



## DRAFT EIR APPENDICES





**This page intentionally left blank**



## APPENDIX A

### NOTICE OF PREPARATION / COMMENT LETTERS



**This page intentionally left blank**



## NOTICE OF PREPARATION



**This page intentionally left blank**



# PUBLIC NOTICE/NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT REPORT

**Project:** Cypress City Center

**Lead Agency:** City of Cypress

**Project Applicant:** Shea Properties

**PROJECT DESCRIPTION:** The City of Cypress (City) is the Lead Agency responsible for preparing an Environmental Impact Report (EIR) addressing potential environmental impacts associated with the Cypress City Center Project (proposed project). The proposed project is located on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California. The project is currently an undeveloped paved parking lot. Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course and periodic temporary truck parking two to three times per year. The project site is bounded by vacant land and surface parking lots associated with the Los Alamitos Race Course to the north, Katella Avenue to the south, Winners Circle to the east, and Siboney Street to the west. Surrounding land uses include the Los Alamitos Race Course to the north; commercial and retail uses to the east; commercial, office, and business park uses to the south; and religious facilities and a commercial center to the west. The project site is within the boundaries of the Cypress Business and Professional Center Specific Plan (Specific Plan), and specifically occupies a portion of Planning Area 5, which is designated for Professional Office uses. The project site currently has a zoning designation of PBP-25A, Planned Business Park (PBP). The Specific Plan is the regulatory plan that constitutes the zoning for the project site. The project would require a Specific Plan Amendment to allow the proposed residential and hotel land uses on the project site.

The proposed project involves the construction and operation of a mixed-use development on the project site. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the property within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1.

Required discretionary actions associated with the project include the following: certification of the EIR; approval of a Development Agreement between SP Acquisition, LLC and the City of Cypress; approval of a Specific Plan Amendment to create a new mixed-use land use district for the project site to allow residential and hotel uses; approval of a Tentative Parcel Map required for the subdivision of the project site; approval of Conditional Use Permits for the hotel, theater, commercial, and restaurant/alcohol uses; and approval of a Design Review Permit.

**POTENTIAL ENVIRONMENTAL IMPACTS:** The Draft EIR (DEIR) will examine potential environmental impacts generated by the proposed project in relation to the following Environmental Analysis categories: Aesthetics, Air Quality, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, and Utilities and Service Systems. These categories reflect the probable environmental effects of the proposed project.

- **Aesthetics.** The proposed project would introduce new structures on the site. The EIR will analyze any impacts of the height and massing of the proposed structures, and will include a consistency analysis with the City's zoning and General Plan regulations governing scenic quality. Project-related impacts with respect to light and glare will also be analyzed in the EIR.
- **Air Quality.** The construction and operation of the proposed project would cause the emission of certain air pollutants. Potential air quality impacts, including consistency with the AQMP, violation of air quality standards, the

increase of criteria pollutants, and exposure of sensitive receptors to substantial pollutant concentrations will be analyzed further in the EIR.

- **Energy.** The construction and operation of the proposed project would involve the use of energy. Project impacts to energy resources will be evaluated as part of the EIR, analyzing short-term and long-term impacts of the project, as well as project consistency with state and local plans related to energy.
- **Geology and Soils.** The proposed project would involve grading and soil disturbance, and would involve the construction of new structures. Potential impacts associated with strong seismic ground shaking, seismic-related ground failure, soil erosion, unsuitable soils, and paleontological resources will be analyzed further in the EIR.
- **Greenhouse Gas Emissions.** During construction of the project, equipment and vehicles would be used that would generate some greenhouse gases (GHG). In addition, the project's use of energy during long-term operations would contribute to the emission of GHGs. Potential GHG impacts will be analyzed further in the EIR.
- **Hazards and Hazardous Materials.** Potential impacts related to the release of hazardous materials into the environment as a result of project construction and operation will be analyzed further in the EIR.
- **Hydrology and Water Quality.** The proposed project would alter the drainage of the subject site, and would introduce construction and operation activities on the site. The EIR will evaluate any potentially significant adverse project impacts related to waste discharge requirements and surface and groundwater water quality, on- or off-site erosion and siltation, changes in the rate or amount of surface runoff, and other hydrology and water quality concerns.
- **Land Use and Planning.** The proposed project includes residential and hotel land uses that are not expressly allowed by the Specific Plan, and includes an amendment to the Specific Plan. The project's potential conflicts with applicable land use plans, policies, or regulations will be addressed in the EIR.
- **Noise.** The construction and operation of the proposed would generate certain levels of noise. Potential impacts related to noise exceeding established thresholds and vibration and ground-borne noise impacts will be analyzed further in the EIR.
- **Population and Housing.** The proposed project would include a maximum of 251 apartment units and the corresponding increase in the City's population. The project's potential to induce substantial population growth, either directly or indirectly, will be assessed in the EIR.
- **Public Services.** The proposed project would bring additional residents and visitors to the City, which may increase the need for public services. Potentially adverse physical impacts associated with new or physically altered governmental facilities related to police, fire, schools, parks, and libraries will be analyzed in the EIR.
- **Recreation.** The proposed project would bring additional residents and visitors to the City, which may increase the demand for recreational facilities. Potential impacts related to the physical deterioration of park facilities, and the construction or expansion of recreational facilities will be evaluated in the EIR.
- **Transportation.** The project construction would generate construction traffic. The operation of the project would bring approximately 164 additional morning peak hour trips and approximately 323 additional afternoon peak hour trips. The project's potential short- and long-term traffic impacts with respect to the exceedance of adopted LOS standards and the project's compliance with program plans, ordinances, and policies addressing the circulation system will be analyzed further in the EIR.
- **Tribal Cultural Resources.** The proposed project would involve ground disturbance, which carries with it some potential for encountering tribal cultural resources. Information provided through tribal consultation will be

incorporated in the EIR analysis and will assist in identifying whether tribal cultural resources are present, and the significance of any potential impacts to such resources.

- **Utilities and Service Systems.** The proposed project would introduce land uses that require utility and drainage services and systems. Potential impacts related to water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, water supply, and solid waste disposal will be analyzed further in the EIR, and mitigation proposed if necessary.

The EIR will also identify appropriate and feasible mitigation measures, if necessary, for each of the environmental impacts listed above. Although the proposed project is not anticipated to result in impacts related to Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Mineral Resources, and Wildfire, these topics will be briefly discussed in the DEIR. An Initial Study has not been prepared for the proposed project. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

**PROJECT SCOPING PROCESS:** Circulation of this Notice of Preparation (NOP) starts a 30-day public review and comment period on the scope of the DEIR that begins on **November 22, 2019**, and ends on **December 23, 2019** at 5:00 p.m. All interested parties, including the public, responsible agencies, and trustee agencies, are invited to provide comments and input on the scope and content of the environmental analysis to be addressed in the DEIR. Responsible and trustee agencies should provide comments and input related to the agencies' respective areas of statutory responsibility. Comments received during the scoping period will be considered during preparation of the DEIR. Public agencies and interested parties will have an additional opportunity to comment on the proposed project during the 45-day public review period to be held after the publication and circulation of the DEIR.

**SCOPING MEETING:** The City will conduct a Public Scoping Meeting in order to present the proposed project and the EIR process and to receive public comments. The City invites interested parties to the following public scoping meeting in order to learn more about the project, ask questions, and submit comments:

**Date/Time:**

**December 11, 2019, 6:00 – 8:00 p.m.**

**Location:**

**Cypress Community Center, Arts and Crafts  
Room, 5700 Orange Avenue, Cypress CA 90630**

**Address Comments to:**

City of Cypress:  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: (714) 229-6720  
Email: CityPlanner@cypressca.org





## DISTRIBUTION LIST



**This page intentionally left blank**

## Agencies (NOP)

Cypress School District  
Attn: Mr. Tim McLellan  
9740 Moody Street  
Cypress, CA 90630

Orange County Transportation Authority  
Attn: Environmental Review  
550 South Main Street  
Orange, CA 92863

Anaheim Union High School District  
Attn: CEQA Review  
501 N. Crescent Way  
Anaheim, CA 92801

Native American Heritage Commission  
Attn: Environmental Review  
1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691

County of Orange, Health Care Agency  
Attn: Environmental Health Division Manager  
P.O. Box 355  
Santa Ana, CA 92702

Caltrans – District 12  
Attn: Local CEQA Review  
1750 E. 4th Street, Suite 100  
Santa Ana, CA 92705

OCFA  
Attn: Fire Prevention Department  
1 Fire Authority Road  
Irvine, CA 92602

Cypress Chamber of Commerce  
5550 W. Cerritos Ave, Suite D  
Cypress, CA 90630

California Department of Fish and Wildlife  
South Coast Region  
Attn: Environmental Review Manager  
4949 Viewridge Avenue  
San Diego, CA 92123

Southern California Edison  
Attn: Environmental Review  
2800 E. Willow Street  
Long Beach, CA 90806

Orange County Flood Control District  
Attn: Environmental Review  
PO Box 4048  
Santa Ana, CA 92702

California Department of Toxic Substances Control  
Attn: Environmental Review  
5796 Corporate Avenue  
Cypress, CA 90630

County of Orange, Waste & Recycling  
Attn: Environmental Review  
320 North Flower Street, #400  
Santa Ana, CA 92703-5000

California Regional Water Quality Control Board –  
Santa Ana Region  
Attn: Mr. Kurt Berchtold  
3737 Main Street, Suite 500  
Riverside, CA 92501-3348

Orange County Water District  
Attn: Environmental Review  
18700 Ward Street  
Fountain Valley, CA 92708

County of Orange, Development Services  
Attn: Environmental Review  
PO Box 4048  
Santa Ana, CA 92702

Southern California Gas Company  
Attn: Environmental Review  
12631 Monarch Avenue  
Garden Grove, CA 92841

Golden State Water Company  
Los Alamitos CSA  
10852 S Cherry Street  
Los Alamitos, CA 90720

SCAG  
Attn: Intergovernmental Review  
900 Wilshire Blvd., Ste. 1700  
Los Angeles, CA 90017

City of Stanton  
Community Development Department  
7800 Katella Avenue  
Stanton, CA 90680

City of Los Alamitos  
Community Development Department  
3191 Katella Avenue  
Los Alamitos, CA 90720

City of Buena Park  
Community Development Department  
6650 Beach Boulevard, First Floor  
Buena Park, CA 90622

City of Anaheim  
Community & Economic Development Dept.  
201 S. Anaheim Blvd., Ste. 1003  
Anaheim, CA 92805

City of Garden Grove  
Community & Economic Development Dept.  
11222 Acacia Parkway  
Garden Grove, CA 92840

Orange County Public Library  
Attn: Environmental Review  
1501 E. St. Andrew Place  
Santa Ana, CA 92705

Orange County Sanitation District  
Attn: Environmental Review  
10844 Ellis Avenue  
Fountain Valley, CA 92708

U.S. Fish & Wildlife Service  
Attn: Environmental Review  
6010 Hidden Valley Road  
Carlsbad, CA 92009

Southern California Gas Company  
Attn: Environmental Review  
P.O. Box 3150  
San Dimas, CA 91773

SCAQMD  
Attn: Environmental Review  
21865 E. Copley Drive  
Diamond Bar, CA 91765

## State Clearinghouse and Orange County Clerk

State of California, State Clearinghouse  
Office of Planning & Research  
1400 Tenth Street, Room 212  
Sacramento, CA 95814

**15 NOP**  
**1 NOC**

### Tribal Representatives (NOP)

Soboba Band of Luiseno Indians  
Scott Cozart, Chairperson  
P. O. Box 487  
San Jacinto, CA 92583

Gabrielino Tongva Tribe  
Sam Dunlap  
TongvaTCR@gmail.com

Agua Caliente Band of Cahuilla Indians  
Attn: Jeff Grubbe, Chairperson  
5401 Dinah Shore Drive  
Palm Springs, CA 92264

Gabrielino-Tongva Tribe  
Attn: Charles Alvarez  
23454 Vanowen Street  
West Hills, CA 91307

Agua Caliente Band of Cahuilla Indians  
Attn: Patricia Garcia-Plotkin, Director  
5401 Dinah Shore Drive  
Palm Springs, CA 92264

Juaneno Band of Mission Indians  
Attn: Sonia Johnston, Chairperson  
P.O. Box 25628  
Santa Ana, CA 92799

Juaneno Band of Mission Indians  
Acjachemen Nation  
Attn: Matias Belardes, Chairperson  
32161 Avenida Los Amigos  
San Juan Capistrano, CA 92675

Juaneno Band of Mission Indians  
Acjachemen Nation - Belardes  
Attn: Joyce Perry, Tribal Manager  
4955 Paseo Segovia  
Irvine, CA 92603

Gabrieleno Band of Mission Indians - Kizh Nation  
Attn: Andrew Salas, Chairperson  
P.O. Box 393  
Covina, CA 91723

Gabrieleno/Tongva San Gabriel  
Band of Mission Indians  
Attn: Anthony Morales, Chairperson  
P.O. Box 693  
San Gabriel, CA 91778

Gabrielino /Tongva Nation  
Attn: Sandonne Goad, Chairperson  
106 1/2 Judge John Aiso St., #231  
Los Angeles, CA 90012

Juaneno Band of Mission Indians  
Acjachemen Nation - Romero  
Attn: Teresa Romero, Chairperson  
31411-A La Matanza Street  
San Juan Capistrano, CA 92675

Gabrielino Tongva Indians of California  
Tribal Council  
Attn: Robert Dorame, Chairperson  
P.O. Box 490  
Bellflower, CA 90707

La Jolla Band of Luiseno Indians  
Attn: Fred Nelson, Chairperson  
22000 Highway 76  
Pauma Valley, CA, 92061

Pala Band of Mission Indians  
Attn: Shasta Gaughen  
Tribal Historic Preservation Officer  
PMB 50, 35008 Pala Temecula Rd.  
Pala, CA 92059

Rincon Band of Luiseno Indians  
Attn: Jim McPherson  
Tribal Historic Preservation Officer  
One Government Center Lane  
Valley Center, CA 92082

Pauma Band of Luiseno Indians  
Attn: Temet Aguilar, Chairperson  
P.O. Box 369  
Pauma Valley, CA 92061

San Luis Rey Band of Mission Indians  
San Luis Rey, Tribal Council  
1889 Sunset Drive  
Vista, CA 92081

Pechanga Band of Luiseno Indians  
Attn: Paul Macarro  
Cultural Resources Coordinator  
P.O. Box 1477  
Temecula, CA 92593

Rincon Band of Luiseno Indians  
Attn: Bo Mazzetti, Chairperson  
One Government Center Lane  
Valley Center, CA 92082

Pechanga Band of Luiseno Indians  
Attn: Mark Macarro, Chairperson  
P.O. Box 1477  
Temecula, CA 92593

Soboba Band of Luiseno Indians  
Attn: Joseph Ontiveros  
Cultural Resource Director  
P.O. BOX 487  
San Jacinto, CA 92581

**Interested Parties (NOP only)**

Shea Properties  
Attn: Elizabeth Cobb  
Vice President, Development  
130 Vantis Street, Ste. 200  
Aliso Viejo, CA 92656



## SCOPING COMMENTS



**This page intentionally left blank**



## RESPONSE LETTERS





**This page intentionally left blank**

**DEPARTMENT OF TRANSPORTATION****DISTRICT 12**

1750 EAST FOURTH STREET, SUITE 100

SANTA ANA, CA 92705

PHONE (657) 328-6310

FAX (657) 328-6510

TTY 711

www.dot.ca.gov

*Making Conservation  
a California Way of Life.*

December 19, 2019

Mr. John Ramirez  
City of Cypress  
5275 Orange Avenue  
Cypress, CA 90630

File: IGR/CEQA  
SCH#: 2019110458  
IGR# 2019-01276  
I-605 PM 1.416  
SR 39 PM 10.666  
SR 22 PM 20.717

Dear Mr. Ramirez,

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the Cypress City Center Project in the City of Cypress. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

The City of Cypress (City) proposes a project that involves the construction and operation of a mixed-use development located on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the property within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1.

The project site is bounded by vacant land and surface parking lots associated with the Los Alamitos Race Course to the north, Katella Avenue to the south, Winners Circle to the east, and Siboney Street to the west. Surrounding land uses include the Los Alamitos Race Course to the north; commercial and retail uses to the east; commercial, office, and business park uses to the south; and religious facilities and a commercial center to the west. The project site is within the boundaries of the Cypress Business and Professional Center Specific Plan (Specific Plan), and specifically occupies a portion of Planning Area 5, which is designated for Professional Office uses. The project site

currently has a zoning designation of PBP-25A, Planned Business Park (PBP). The Specific Plan is the regulatory plan that constitutes the zoning for the project site. The project site is approximately 2 miles from Interstate 605, State Route (SR) 39 and SR 22. Interstate 605 as well as SR 39 and SR 22 are owned and operated by Caltrans. Caltrans is a responsible agency and has the following comments:

### **Traffic Operations**

1. Please refer to the "Guide for the Preparation of Traffic Impact Studies" to prepare the Traffic Impact Studies report to support the transportation section of the DEIR. [https://nacto.org/docs/usdg/guide\\_preparation\\_traffic\\_impact\\_studies\\_caltrans.pdf](https://nacto.org/docs/usdg/guide_preparation_traffic_impact_studies_caltrans.pdf)
2. Please use the latest Highway Capacity Manual methodology to analyze the interrupted flow and/or uninterrupted flow facilities that fall within Caltrans' right of way. For interrupted flow, facility 95 percentile queue length needs to be analyzed. For the uninterrupted flow, facility basic freeway, diverge, merge and weaving will need to be analyzed if it is applicable.  
<https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm>

### **System Planning**

1. Please submit the Transportation Impact Study when it becomes available.
2. As part of state goals to increase active transportation, and given the nearby Class I regional bike path on Valley View and the Class II bike lanes on Cerritos Avenue, Caltrans recommends the inclusion of secure and functional short- and long-term bike parking. Short-term bike parking at public/commercial locations should be located at multiple locations throughout the project site and should be placed in visible areas that are close to main entrances. Bike racks should be installed at least 24" away from walls and other objects (e.g. trash cans, plants, etc.). Long-term secure bike storage for residential units should be provided indoors and on the ground floor. Both short- and long-term bike parking should be designed to accommodate different types of bikes (e.g. cargo bike, bike with trailer).  
For additional guidance on providing functional bike parking, see the attached "Essentials of Bike Parking" guidance created by the Association of Pedestrian and Bicycle Professionals (link to online PDF: <https://www.apbpb.org/Publications>).
3. OCTA Bus Route 50, Long Beach to Orange, has stops at the southern edge and southeastern corner of the development. Please encourage the use of transit among residents, visitors, and workers of the development. Increasing multi-modal transportation will lead to a reduction to congestion, Vehicle Miles Traveled, and improve air quality.

4. Please Coordinate with OCTA and ensure that construction of the development will not interfere with any transit services.

**Designated Freight Delivery Area**

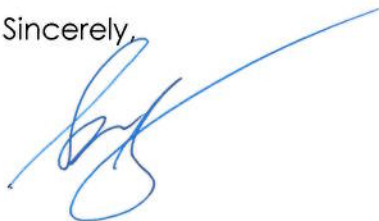
1. Please consider incorporating designated areas/parking for freight delivery, package, and transportation network company's pickup and drop-off.

**Permits:**

1. Any project work proposed in the vicinity of the State right of way will require an encroachment permit, and all environmental concerns must be adequately addressed. Please coordinate with Caltrans in order to meet the requirements for any work within or near State Right-of-Way. A fee may apply. If the cost of work within the State right of way is below one Million Dollars, the Encroachment Permit process will be handled by our Permits Branch; otherwise the permit should be authorized through the Caltrans's Project Development Department. When applying for Encroachment Permit, please incorporate all Environmental Documentation, SWPPP/ WPCP, NPDES, Hydraulic Calculations, R/W certification and all relevant design details including design exception approvals. For specific details for Encroachment Permits procedure, please refer to the Caltrans's Encroachment Permits Manual. The latest edition of the Manual is available on the web site: <http://www.dot.ca.gov/hq/traffops/developserv/permits/>

Please continue to coordinate with Caltrans for any future developments that could potentially impact State transportation facilities. If you have any questions, please do not hesitate to contact Julie Lugaro at 657-328-6368 or [Julie.lugaro@dot.ca.gov](mailto:Julie.lugaro@dot.ca.gov).

Sincerely,



Scott Shelley  
Branch Chief, Regional-IGR-Transit Planning  
District 12



November 25, 2019

City of Cypress  
Mr. Peter Grant, City Manager  
5275 Orange Avenue  
Cypress, CA 90630

**RE: Consideration of a Disposition and Development Agreement for the Sale of City Owned Property at the Northwest Corner of Katella Avenue and Winners Circle (APNs 241-091-022 through -026) to SP Acquisition, LLC for a Mixed-Use Project**

Mr. Grant,

During their regularly scheduled meeting today, the Cypress City Council is scheduled to consider the approval of a Disposition and Development Agreement for the Sale of City Owned Property at the Northwest Corner of Katella Avenue and Winners Circle (APNs 241-091-022 through -026) to SP Acquisition, LLC for a Mixed-Use Project. The prospective purchaser, Shea Properties, has proposed a development concept that includes a 120-room hotel, 64,000 square feet of commercial retail, and 251 resort-style residential apartments.

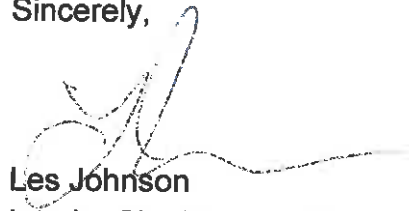
Though it is understood that what is being proposed is a development concept at this time, it is expected that the development will generate a number of new vehicle trips to Katella Avenue. It is also anticipated that a majority of these trips will utilize Katella Avenue west of the subject site. This arterial currently experiences greater than 60,000 average daily trips. As a result, heavy congestion is common during peak hour trip movements, especially to the west of the subject site in the general area of Katella Avenue & Los Alamitos Boulevard. In addition, the amount of activity and variety of trips that includes large trucks also results in excessive wear and increases the frequency and ultimately the cost to adequately maintain Katella Avenue.

As a result, it is requested that the City of Cypress work closely with the City of Los Alamitos to establish a mitigation fee designed and intended to establish an equitable amount to be paid for the future maintenance of Katella Avenue within the City of Los Alamitos. With the environmental review process for the proposed development

commencing this month and likely not to conclude until mid-2020, it is recommended that our request be considered in conjunction with such.

Thank you in advance for your consideration of this request. Should you have any questions or would like to further discuss, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Les Johnson', with a long horizontal flourish extending to the right.

Les Johnson  
Interim City Manager/Development Services Director

NATIVE AMERICAN HERITAGE COMMISSION  
Cultural and Environmental Department  
1550 Harbor Blvd., Suite 100  
West Sacramento, CA 95691 Phone: (916) 373-3710  
Email: [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
Website: <http://www.nahc.ca.gov>



November 25, 2019

John P. Ramirez  
Cypress, City of  
5275 Orange Avenue  
Cypress, CA 90630

RE: SCH# 2019110458, Cypress City Center Project, Orange County

Dear Mr. Ramirez:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

RECEIVED

DEC 4 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT



## AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
  - a. A brief description of the project.
  - b. The lead agency contact information.
  - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
  - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
  - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
  - a. Alternatives to the project.
  - b. Recommended mitigation measures.
  - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
  - a. Type of environmental review necessary.
  - b. Significance of the tribal cultural resources.
  - c. Significance of the project's impacts on tribal cultural resources.
  - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
  - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
  - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).



7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
  - a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
  - a. Avoidance and preservation of the resources in place, including, but not limited to:
    - i. Planning and construction to avoid the resources and protect the cultural and natural context.
    - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - i. Protecting the cultural character and integrity of the resource.
    - ii. Protecting the traditional use of the resource.
    - iii. Protecting the confidentiality of the resource.
  - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
  - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
  - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
  - a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
  - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: [http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation\\_CalEPAPDF.pdf](http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf)

## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf)

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>

## NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
  - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
  - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
  - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
  - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:

[Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov)

Sincerely,



Andrew Green  
Staff Services Analyst

cc: State Clearinghouse



**AFFILIATED AGENCIES**

*Orange County  
Transit District*

*Local Transportation  
Authority*

*Service Authority for  
Freeway Emergencies*

*Consolidated Transportation  
Service Agency*

*Congestion Management  
Agency*

December 20, 2019

Mr. John P. Ramirez, AICP  
City Planner  
City of Cypress  
5275 Orange Ave.  
Cypress, CA 90630

**Subject: Notice of Preparation of Draft Environmental Impact Report for  
the Cypress City Center Project.**

Dear Mr. Ramirez:

Thank you for providing the Orange County Transportation Authority (OCTA) with a copy of the Notice of Preparation of the Draft Environmental Impact Report (NOP/DIER) for the Cypress (City) City Center (Project). The following comments are provided for your consideration:

- Please note that Katella Avenue is part of the Congestion Management Program Highway System and should be analyzed as such for any potential traffic impacts. You may reference the latest Congestion Management Program (CMP) report available on the OCTA website here:  
<http://www.octa.net/Projects-and-Programs/Plans-and-Studies/Congestion-Management-Program/Overview/>

Throughout the development of this project, we encourage communication with OCTA on any matters discussed herein. If you have any questions or comments, please contact me at (714) 560-5907 or at [dphu@octa.net](mailto:dphu@octa.net).

Sincerely,

Dan Phu  
Manager, Environmental Programs

# RINCON BAND OF LUISEÑO INDIANS

## Cultural Resources Department

One Government Center Lane · Valley Center, California 92082 ·  
(760) 297-2330 Fax:(760) 749-8901



December 4, 2019

John P. Ramirez  
City of Cypress  
5275 Orange Avenue  
Cypress, CA 90630

### Re: Cypress City Center

Dear Mr. Ramirez:

This letter is written on behalf of the Rincon Band of Luiseño Indians. Thank you for inviting us to submit comments on the above mention project. Rincon is submitting these comments concerning your projects potential impact on Luiseño cultural resources.

The Rincon Band has concerns for the impacts to historic and cultural resources and the finding of items of significant cultural value that could be disturbed or destroyed and are considered culturally significant to the Luiseño people. This is to inform you; your identified location is not within the Luiseño Aboriginal Territory. We recommend that you locate a tribe within the project area to receive direction on how to handle any inadvertent findings according to their customs and traditions.

If you would like information on tribes within your project area, please contact the Native American Heritage Commission and they will assist with a referral.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Deneen Pelton, Administrative Assistant for  
Cheryl Madrigal, M.A.  
Cultural Resources Manager  
Cultural Resources Department  
Office: 760-297-2635 ext. 318 | Cell: 760-648-3000  
Email: cmadrigal@rincon-nsn.gov

---

Bo Mazzetti  
Tribal Chairman

Tishmall Turner  
Vice Chairwoman

Steve Stallings  
Council Member

Laurie E. Gonzalez  
Council Member

Alfonso Kolb  
Council Member



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

SENT VIA USPS AND E-MAIL:

December 17, 2019

[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

John P. Ramirez, AICP, City Planner  
City of Cypress, Planning Department  
5275 Orange Avenue  
Cypress, CA 90630

## **Notice of Preparation of a Draft Environmental Impact Report for the Proposed Cypress City Center**

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. South Coast AQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Environmental Impact Report (EIR). Please send South Coast AQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to South Coast AQMD. Please forward a copy of the Draft EIR directly to South Coast AQMD at the address shown in the letterhead. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files<sup>1</sup>. These include emission calculation spreadsheets and modeling input and output files (not PDF files). Without all files and supporting documentation, South Coast AQMD staff will be unable to complete our review of the air quality analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

### **Air Quality Analysis**

South Coast AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. South Coast AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from South Coast AQMD's Subscription Services Department by calling (909) 396-3720. More guidance developed since this Handbook is also available on South Coast AQMD's website at: [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)). South Coast AQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: [www.caleemod.com](http://www.caleemod.com).

---

<sup>1</sup> Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.



South Coast AQMD has also developed both regional and localized significance thresholds. South Coast AQMD staff requests that the Lead Agency quantify criteria pollutant emissions and compare the results to South Coast AQMD's CEQA regional pollutant emissions significance thresholds to determine air quality impacts. South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found here at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>. In the event that some elements of the Proposed Project will be operational when other elements of the Proposed Project are still under construction, South Coast AQMD staff recommends that the Lead Agency use its best efforts to identify the overlapping years of construction and operational activities, combine construction emissions (including emissions from demolition) with operational emissions from the overlapping years, and compare the combined emissions to South Coast AQMD's air quality CEQA operational thresholds of significance to determine the level of significance in the Draft EIR.

In addition to analyzing regional air quality impacts, South Coast AQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by South Coast AQMD staff or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis.

In the event that the Proposed Project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis>. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: <http://www.arb.ca.gov/ch/handbook.pdf>. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Guidance<sup>2</sup> on strategies to reduce air pollution exposure near high-volume roadways can be found at: [https://www.arb.ca.gov/ch/rd\\_technical\\_advisory\\_final.PDF](https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF).

---

<sup>2</sup> In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective.

**Mitigation Measures**

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize these impacts. Pursuant to CEQA Guidelines Section 15126.4(a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project, including:

- Chapter 11 “Mitigating the Impact of a Project” of South Coast AQMD’S *CEQA Air Quality Handbook* South Coast AQMD’s CEQA web pages available here: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>
- South Coast AQMD’s Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- South Coast AQMD’s Mitigation Monitoring and Reporting Plan (MMRP) for the 2016 Air Quality Management Plan (2016 AQMP) available here (starting on page 86): <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf>
- CAPCOA’s *Quantifying Greenhouse Gas Mitigation Measures* available here: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

**Alternatives**

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a “no project” alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

**Permits**

If implementation of the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a Responsible Agency for the Proposed Project in the EIR. For more information on permits, please visit South Coast AQMD’s webpage at: <http://www.aqmd.gov/home/permits>. Questions on permits can be directed to South Coast AQMD’s Engineering and Permitting staff at (909) 396-3385.

**Data Sources**

South Coast AQMD rules and relevant air quality reports and data are available by calling South Coast AQMD’s Public Information Center at (909) 396-2001. Much of the information available through the Public Information Center is also available at South Coast AQMD’s webpage at: <http://www.aqmd.gov>.



South Coast AQMD staff is available to work with the Lead Agency to ensure that project's air quality and health risk impacts are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at [lsun@aqmd.gov](mailto:lsun@aqmd.gov).

Sincerely,

*Lijin Sun*

Lijin Sun, J.D.

Program Supervisor, CEQA IGR

Planning, Rule Development & Area Sources

LS  
ORC191126-05  
Control Number



Gavin Newsom  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Kate Gordon  
Director

**Notice of Preparation**

November 22, 2019

To: Reviewing Agencies

Re: Cypress City Center  
SCH# 2019110458

Attached for your review and comment is the Notice of Preparation (NOP) for the Cypress City Center draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**John P. Ramirez**  
Cypress, City of  
5275 Orange Avenue  
Cypress, CA 90630

with a copy to the State Clearinghouse in the Office of Planning and Research at [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov). Please refer to the SCH number noted above in all correspondence concerning this project on our website: <https://ceqanet.opr.ca.gov/2019110458/2>.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan  
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CAI  
TEL 1-916-445-0613 [state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

RECEIVED

DEC 4 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

**Notice of Completion & Environmental Document Transmittal****2019110458**

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613

For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

**Project Title:** Cypress City Center**Lead Agency:** City of Cypress**Contact Person:** John P. Ramirez, AICP**Mailing Address:** 5275 Orange Avenue**Phone:** (714) 229-8727**City:** Cypress**Zip:** 90630**County:** Orange**Project Location:** County: Orange**City/Nearest Community:** Cypress**Cross Streets:** Katella Avenue and Winners Circle**Zip Code:** 90720**Longitude/Latitude (degrees, minutes and seconds):** 33 ° 48 ' 17 " N / 118 ° 02 ' 31 " W **Total Acres:** 13**Assessor's Parcel No.:** See attachment.**Section:** Twp.: Range: Base:**Within 2 Miles:** State Hwy #: I-805, I-405, SR-22**Waterways:** Coyote Creek, San Gabriel River**Airports:** Los Alamitos JFTB**Railways:** Schools: See attachment**Document Type:**

CEQA: ☒ NOP ☐ Draft EIR ☐ NOI ☐ Other: ☒ Joint Document  
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document  
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:  
☐ Mit Neg Dec ☐ Other:

Governor's Office of Planning &amp; Research

NOV 22 2019

**Local Action Type:**

☐ General Plan Update ☒ Specific Plan ☐ Redezone ☐ Annexation  
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment  
☐ General Plan Element ☐ Planned Unit Development ☒ Use Permit ☐ Coastal Permit  
☐ Community Plan ☒ Site Plan ☒ Land Division (Subdivision, etc.) ☐ Other:

STATE CLEARINGHOUSE

**Development Type:**

☒ Residential: Units 251 Acres 7.2 ☐ Transportation: Type  
☐ Office: Sq.ft. Acres Employees ☐ Mining: Mineral  
☒ Commercial: Sq.ft. 160,775 Acres 3.7 Employees ☐ Power: Type MW  
☐ Industrial: Sq.ft. Acres Employees ☐ Waste Treatment: Type MGD  
☐ Educational: ☐ Hazardous Waste: Type  
☐ Recreational: ☐ Other:  
☐ Water Facilities: Type MGD

**Project Issues Discussed in Document:**

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☐ Vegetation  
☐ Agricultural Land ☒ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality  
☒ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater  
☐ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☐ Wetland/Riparian  
☐ Biological Resources ☐ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement  
☐ Coastal Zone ☐ Noise ☒ Solid Waste ☒ Land Use  
☒ Drainage/Absorption ☒ Population/Housing Balance ☐ Toxic/Hazardous ☒ Cumulative Effects  
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☒ Other: Energy Use

**Present Land Use/Zoning/General Plan Designation:**

Undeveloped Parking Lot/PBP-25A Planned Business Park/Specific Plan Area

**Project Description:** (please use a separate page if necessary)

See attached page

Resources Agency

- ☒ **Resources Agency**  
Nadell Gayou
- ☐ **Dept. of Boating & Waterways**  
Denise Peterson
- ☐ **California Coastal Commission**  
Allyson Hitt
- ☐ **Colorado River Board**  
Elsa Contreras
- ☒ **Dept. of Conservation**  
Crina Chan
- ☒ **Cal Fire**  
Dan Foster
- ☐ **Central Valley Flood Protection Board**  
James Herota
- ☐ **Office of Historic Preservation**  
Ron Parsons
- ☒ **Dept of Parks & Recreation**  
Environmental Stewardship Section
- ☐ **S.F. Bay Conservation & Dev't. Comm.**  
Steve Goldbeck
- ☒ **Dept. of Water Resources**  
Resources Agency  
Nadell Gayou
- Fish and Wildlife**
- ☐ **Depart. of Fish & Wildlife**  
Scott Flint  
Environmental Services Division
- ☐ **Fish & Wildlife Region 1**  
Curt Babcock
- ☐ **Fish & Wildlife Region 1E**  
Laurie Harnsberger
- ☐ **Fish & Wildlife Region 2**  
Jeff Drongesen
- ☐ **Fish & Wildlife Region 3**  
Craig Weightman
- ☐ **Fish & Wildlife Region 4**  
Julie Vance
- ☒ **Fish & Wildlife Region 5**  
Leslie Newton-Reed  
Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6**  
Tiffany Ellis  
Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6 I/M**  
Heidi Calvert  
Inyo/Mono, Habitat Conservation Program
- ☐ **Dept. of Fish & Wildlife M**  
William Paznokas  
Marine Region
- Other Departments**
- ☐ **California Department of Education**  
Lesley Taylor
- ☐ **OES (Office of Emergency Services)**  
Monique Wilber
- ☐ **Food & Agriculture**  
Sandra Schubert  
Dept. of Food and Agriculture
- ☐ **Dept. of General Services**  
Cathy Buck  
Environmental Services Section
- ☐ **Housing & Comm. Dev.**  
CEQA Coordinator  
Housing Policy Division
- Independent Commissions/Boards**
- ☐ **Delta Protection Commission**  
Erik Vink
- ☐ **Delta Stewardship Council**  
Anthony Navasero
- ☐ **California Energy Commission**  
Eric Knight

- ☒ **Native American Heritage Comm.**  
Debbie Treadway
- ☐ **Public Utilities Commission**  
Supervisor
- ☐ **Santa Monica Bay Restoration**  
Guangyu Wang
- ☒ **State Lands Commission**  
Jennifer Deleong
- ☐ **Tahoe Regional Planning Agency (TRPA)**  
Cherry Jacques
- Cal State Transportation Agency CalSTA**
- ☒ **Caltrans - Division of Aeronautics**  
Philip Crimmins
- ☐ **Caltrans - Planning**  
HQ LD-IGR  
Christian Bushong
- ☒ **California Highway Patrol**  
Suzann Ikeuchi  
Office of Special Projects
- Dept. of Transportation**
- ☐ **Caltrans, District 1**  
Rex Jackman
- ☐ **Caltrans, District 2**  
Marcelino Gonzalez
- ☐ **Caltrans, District 3**  
Susan Zanchi
- ☐ **Caltrans, District 4**  
Patricia Maurice
- ☐ **Caltrans, District 5**  
Larry Newland
- ☐ **Caltrans, District 6**  
Michael Navarro
- ☐ **Caltrans, District 7**  
Dianna Watson
- ☐ **Caltrans, District 8**  
Mark Roberts
- Cal EPA**
- ☐ **Air Resources Board**
- ☐ **Airport & Freight**  
Jack Wursten
- ☒ **Transportation Projects**  
Nesamani Kalandiyur
- ☐ **Industrial/Energy Projects**  
Mike Tollstrup
- ☐ **California Department of Resources, Recycling & Recovery**  
Kevin Taylor/Jeff Esquivel
- ☐ **State Water Resources Control Board**  
Regional Programs Unit  
Division of Financial Assistance
- ☐ **State Water Resources Control Board**  
Cindy Forbes - Asst Deputy  
Division of Drinking Water
- ☐ **State Water Resources Control Board**  
Div. Drinking Water # \_\_\_\_\_
- ☒ **State Water Resources Control Board**  
Student Intern, 401 Water Quality Certification Unit  
Division of Water Quality
- ☐ **State Water Resources Control Board**  
Phil Crader  
Division of Water Rights
- ☒ **Dept. of Toxic Substances Control Reg. # \_\_\_\_\_**  
CEQA Tracking Center
- ☐ **Department of Pesticide Regulation**  
CEQA Coordinator

- Regional Water Quality Control Board (RWQCB)**
- ☐ **RWQCB 1**  
Cathleen Hudson  
North Coast Region (1)
- ☐ **RWQCB 2**  
Environmental Document Coordinator  
San Francisco Bay Region (2)
- ☐ **RWQCB 3**  
Central Coast Region (3)
- ☐ **RWQCB 4**  
Teresa Rodgers  
Los Angeles Region (4)
- ☐ **RWQCB 5S**  
Central Valley Region (5)
- ☐ **RWQCB 5F**  
Central Valley Region (5)  
Fresno Branch Office
- ☐ **RWQCB 5R**  
Central Valley Region (5)  
Redding Branch Office
- ☐ **RWQCB 6**  
Lahontan Region (6)
- ☐ **RWQCB 6V**  
Lahontan Region (6)  
Victorville Branch Office
- ☐ **RWQCB 7**  
Colorado River Basin Region (7)
- ☒ **RWQCB 8**  
Santa Ana Region (8)
- ☐ **RWQCB 9**  
San Diego Region (9)
- ☐ **Other** \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ **Conservancy**



## RESPONSE FORMS/EMAILS



**This page intentionally left blank**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Donna Ballard  
Address: 6281 Ferne Ave City: Cypress Zip: 90630  
Email Address: \_\_\_\_\_  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)



The city should continue to implement green spaces that add to the aesthetics of the city. We already have an abundance of retail venues. Our city is unique and should remain that way. Cypress residents live here because it is a pleasant city in which to reside. Adding high-rise buildings and/or additional retail will add to the traffic of the city which is already getting out of hand. Cypress residents have always been informed of changes. Please continue to respect our right to know about changes in our city. Meetings with hidden agendas are not appreciated. The Project Meeting was not communicated clearly and many residents did not get the information needed to attend the December 11th meeting. In the future, it would be helpful to include such important information in the city newsletter that reaches all citizens of Cypress.

I am in agreement with the following comments submitted by George Pardon. Mr. Pardon's comments are copied below:

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- Aesthetics – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of what Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer

**Please Comment by December 23, 2019**

went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of what Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning.** Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so



many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation –** Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.



Donna Ballard  
6281 Ferne Ave  
Cypress CA 90630

**From:** borodayko  
**To:** [City Planner](#)  
**Subject:** EIR ON KATELLA AVE  
**Date:** Wednesday, December 18, 2019 1:57:09 PM

---

Mr. Ramirez,

I do not want apartments along Katella Ave. It will make the area too dense in population and cause much more congestion and strain on our Fire, Police, EMS, schools, and parks.

Measure A was approved in 2018 to change the zoning for the race track, and there was to be 20 acres of parkland; but I do not see the park being provided. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

Thank you for your consideration.

Deanna and Alex Borodayko  
4682 Larwin Ave.  
Cypress, Ca. 90630  
714 222 3807

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019

NAME: Heidi Butcher  
ADDRESS: 9924 Carrara Circle CITY: Cypress ZIP: 90630  
EMAIL ADDRESS: Heidi.BW2CSB@global.net  
REPRESENTING: (myself)

Do you wish to be added to the project mailing list?

☐ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720

Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

- Very Concerned about the impact this will have on traffic in areas of Cypress / Los Alamitos that is already heavily saturated with Costco and adjoining Shopping center. By approving this High Density residential property / parking garage (as proposed by Shea Properties) within the 13 acre parcel, we are impacting schools, roads, nearby parks, and local hospital.
- The increased population will also draw more traffic not only on Katella Ave but areas North of Katella wherein Cypress Schools are located.
- The intersection at Katella / Los Alamitos Blvd has already been cited as the 2nd busiest intersection in Orange County. My concern is that this has the risk of getting even busier, with increased potential for traffic bottlenecks and accidents.

Please comment by December 23, 2019

RECEIVED

DEC 16 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019

NAME: WAYNE M. COMEAU  
ADDRESS: 6473 ANGUIA AVENUE CITY: CYPRESS ZIP: 90630  
EMAIL ADDRESS: WCOMEAU@AOL.COM  
REPRESENTING: MYSELF AND NEIGHBORS OPINIONS

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720

Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the *environmental issues* to be addressed in the EIR (please print).

THE HIGH DENSITY HOUSING INCLUDED IN THIS PROJECT WILL SIGNIFICANTLY INCREASE TRAFFIC, CONGESTION, POLLUTION AND WEAR OF THOROUGHFARES (IE KATELLA AVE.) AND NEIGHBORHOODS IN AREA H.D.H. WILL ALSO STRAIN POLICE, FIRE, PARK AND SCHOOL SERVICES. ZONING CHANGE ALLOWING H.D.H. OPENS DOOR TO FUTURE CHALLENGES FOR OWNERS OF COMMERCIAL PROPERTY TO REQUEST SIMILAR ZONING- RESULTING IN MORE TRAFFIC, CONGESTION, POLLUTION ETC.  
THIS PROJECT WILL ALSO REQUIRE MORE ENERGY SUCH AS GAS, ELECTRICITY AND INCREASE IN WASTE REMOVAL BY CITY.

A NON-EIR CONCERN. THE NEED FOR MORE MOVIE THEATERS IN CYPRESS VERY QUESTIONABLE AS A FINANCIAL INVESTMENT

RECEIVED

WME

DEC 16 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

Please comment by December 23, 2019

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019

NAME: LEO FRIEDLAND

ADDRESS: 9621 GRAHAM ST. #47 CITY: CYPRESS ZIP: 90630

EMAIL ADDRESS: \_\_\_\_\_

REPRESENTING: SELF

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720

Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the *environmental issues* to be addressed in the EIR (please print).

THE PROPOSED DEVELOPMENT AS CONSTITUTED

SMACKS OF POSSIBLE COLLUSION BETWEEN MEMBERS OF  
THE CITY COUNCIL AND THE DEVELOPER.

THE PLAN SUBMITTED BY DR. ALURED SEEMS MORE  
SENSIBLE. THE SHEA PLAN WILL PROBABLY RESULT IN  
LITIGATION, AND A TALKING POINT IN THE NEXT  
COUNCIL ELECTION.

Please comment by December 23, 2019

RECEIVED

DEC 23 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: Jimmy Fuller  
ADDRESS: 4237 Cheshire Dr CITY: Cypress ZIP: 90630  
EMAIL ADDRESS: jimmyfuller4237@gmail.com  
REPRESENTING: Self / Resident

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

**Phone:** (714) 229-6720

**Email:** CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

- Concerns re: additional traffic along Katella Ave. Currently a disaster during 6AM-9AM & 4PM-7PM.
- Will traffic be allowed to exit onto the racetrack property to the north? And will that traffic be allowed to then exit back onto Vessels Dr.?
- There is a need for a lot of E.V. charging stations @ this property...
- Aesthetics: I think it's important to add lots of green screening along all sides of the property to shade/protect the project site from Katella (from noise, pollutants, & car lights) & from the racetrack (noise, smell, & lighting).

**Please comment by December 23, 2019**



**From:** Shaunna Hargrave  
**To:** [City Planner](#)  
**Subject:** RE: Scoping Comments - Shea Katella Development  
**Date:** Wednesday, December 18, 2019 4:08:49 PM

---

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

Dear Mr. Ramirez,

I have been a resident of Cypress for the past 9 years, after having returned here after living out of state of many years. I grew up in Cypress and attended Pacifica High School. I suffer from the lack of affordable housing in Orange County, and want to express my desires to see Cypress develop in a manner that gives greater housing options for all. I know how difficult city planning can be, as low-income people struggle to have their needs met and local property owners fight to maintain property values. I support whichever plan will bring the greatest number of apartments to Cypress.

A current search on Zillow for Cypress shows that a 805 sqft condo sells at a price where the estimated monthly costs (mortgage, HOA, etc) are \$2500. This is supposed to be an entry level into home ownership. I know very few of my peers, all with degrees beyond high school, who can afford this. Even if they could, there are only 7 available properties in Cypress at that budget. What about the people who need more space (small families) and who aren't in a position to buy a home? We need options.

Are luxury apartments my first choice? No. But, in a city with voters like I see in Cypress, I'll take what I can get. From what I can tell, even luxury apartments do their part in managing rent prices for all. I leave an article I found [HERE](#), that also contains links to studies on the effects of luxury apartments on rent prices.

Ideally, I would like to see a comprehensive city planning strategy that includes creating more permits for duplexes/triplexes to grow in an organic way, permits for "mother-in-law" units, in addition to zoning for apartments. I'd like to see what I've seen in Ventura and San Luis Obispo, where a certain percentage of dwellings are reserved for county low-income programs. Such a strategy should be future-oriented. Cypress (and OC/LA) cannot remain a metro dominated by the automobile forever. We need to do city planning in a way that makes sense to future public transportation developments. In my view, Katella & Lincoln are the obvious transportation arteries, that will one day feature a light rail or increased bus service. What better place to build apartments? Who is most likely to use public transportation, but apartment dwellers?

I am shocked and concerned by public sentiment that I see on these proposed changes to Cypress. I see people who would rather families cram into small apartments and homes or commute 3 hours a day from Corona/Riverside, just so they don't have an extra 15 minute drive on their Costco run and picking up the kids from school. On a Facebook page, a woman complains about traffic while shopping while callously saying that OC is a "commuter

culture" and people should just accept 1-3 hour commute times each day.

Cypress is a centrally-located city in Orange County. If you build it, they will come. That is a given. I know of college educated couples who work in Cypress and Huntington Beach and commute from Signal Hill and Long Beach. I often work down in Irvine, while my husband commutes to LA. Cypress is a perfect location for us. We have to think bigger than Cypress and be part of the solution for the future of Orange County and this state.

Thank you for your consideration of my comments. Where is the best place that I might follow the progress on this matter. I want to be sure to participate in any public hearings?

Sincerely,  
Shaunna Hargrave  
657-222-5099



**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJCT  
Wednesday, December 11, 2018**

NAME: Millage House Jr

Address: 4220 Avenida Sevilla CITY: Cypress ZIP: 90630

EMAIL ADDRESS: [allhouse55@yahoo.com](mailto:allhouse55@yahoo.com)

REPRESENTING: Self/Resident

Do you wish to wish to be added to the project mailing list? **Yes**

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

**Phone:** (714) 229-6720

**Email:** [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment car is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the ***environment issues*** to be addressed in the EIR.

Mr. Ramirez:

The comment form specially specifies the comments are for records and that they pertain to the '***environment issues***' to be addressed in the EIR. My comments will be submitted in two parts: 1) one to conform to the format request and two a letter to the you, City Planner to share with the Mayor and Council.

As a resident I am not knowledge of the California State Clearinghouse requirements for the EIR submission. An observation on the process is that it is solely based on those categories that have impacts of the components or elements of a site developments. It lists several of the major Cypress areas and development issues; but, the EIR process does not require the the developer to show or use analysis to establish the project's compliance with the all City of Cypress plans ordinances and prolicies. The California State regulation is flawed in a similar manner as it required the SMOG Testing of vehicles; with no requirements for annual safety road worthiness testing. The overall, long term financial analysis for it impact of the City of Cypress does not seem to addressed. See my attached letter for more on this issue.

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJCT  
Wednesday, December 11, 2018**

The City of Cypress should engage a independent licensed professional services company to perform a detailed review of this draft EIR. The should be provided with the City of Cypress, Plans, Housing, Developments, ordinances and policies to ensure that they will be using the City base requirements for this development. They should all be required to have a kickoff meeting so that the Mayor and Council with guiding from staff to review the scope with the emphasis on the City of Cypress requirements

The licensed professional services company shall review and provide detailed comments on all sections of the EIR. I ask that they do a more detailed analysis on the Air Quality, Energy, Hydrology and Water, Noise, Publics services, recreation, Transportaion.

All of the areas will have a long term increased financial effect on the City of Cypress. The City will require funds and they will be asking us to approve more property taxes.

In summary, City of Cypress should contract with a licensed professional service company to preform the review of the Draft EIR.

Millage House, Jr  
4220 Avenida Sevilla  
Cypress, CA 90630-3416

December 20, 2019

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Subject: Draft EIR, **environmental issues** review

Mr. Ramirez, this letter is directed to your attention because of the request to submit comments for the record that pertain to the environmental issues to be address in the EIR.

I referenced in my submission comment:

"An observation on the EIR process is that it is solely based on those\_\_ categories that have impacts of the components or elements of a site development. It lists several of the major Cypress areas and development issues; but, the EIR process does not require the developer to show or use analysis to establish the project's compliance with the all City of Cypress plans ordinances and policies. The California State regulation is flawed in a similar manner as it required the SMOG Testing of vehicles; with no requirements for annual safety road worthiness testing. The overall, long term financial analysis for it impact of the City of Cypress does not seem to addressed. See my attached letter for more on this issue."

My recommendation is for your office to present a formal request to the Mayor and Council a request to direct the planning department to perform a financial planning study on this EIR and its entire development. The result will be a report that addresses the short and long/life expectancy financial, public services, and infrastructure requirements on the City and the residents. This report should be used to support the staff recommendation to the Mayor and council.

The process that the City of Cypress is following seems to be a little flawed and only seems to be addressing the CA state regulations/requirements. The residents need equal representation; since the long term financial responsibly falls on us. The buck stops here. The residents have a right to have full disclosure and the planning Department, Mayor and Council have an obligation to provide this information.

The City of Cypress needs to use a model similar to the one that is currently being used by the City of Anaheim.

Sincerely,

Millage House, Jr.  
4220 Avenida Sevilla  
Cypress, CA 90630-3416

**From:** robinitzler@aol.com  
**To:** [City Planner](#)  
**Subject:** Four-Story High-Density Apartment Building  
**Date:** Saturday, December 21, 2019 5:05:46 PM

---

Mr. John Ramirez  
City Planner  
City of Cypress

Dear Mr. Ramirez:

I am writing regarding the four-story high-density apartment complex that is being planned for the City of Cypress. My husband and I have lived in Cypress since 1978 (first in Tanglewood for 1-1/2 years and then in our current single-family home that we added onto twice). As former New Yorkers, we are flustered as to why the Cypress City Council appears determined to recreate Manhattan traffic gridlock on Cypress and Los Alamitos streets.

The four-story high-density apartment complex is not good for Cypress. If built, whatever benefits it brings to the city will be at Los Alamitos' AND Cypress' expense.

Whenever I speak to residents about the abysmal traffic on Katella Avenue (especially at the Katella/Los Alamitos intersection), many say they get around the awful congestion by using Farquhar Avenue. I started doing that and even with stop signs at each corner traffic currently moves faster than on Katella Avenue. Moreover, you can usually make a left turn onto Los Alamitos Blvd. without waiting through two or three cycles.

If this four-story high-density apartment complex is allowed to go through along with all the other asinine residential building that Cypress has approved, who knows how much more traffic Los Alamitos and Cypress residents will suffer with.

If you would like additional reasons against the four-story, high-density apartment complex, please let me know. In the meantime, on behalf of my husband and myself, we are AGAINST THIS PROJECT!

Sincerely,

Robin Itzler  
Larry Itzler  
10252 Delano Drive  
Cypress

## Property on Katella Condomenian proposed property

From: Star Johnson (oonthgo@sbcglobal.net)

To: cityplanner@cypress.org

Date: Friday, December 20, 2019, 05:13 PM PST

Attention: John P. Ramirez

The development of this property as proposed is unconventional with the surrounding area and landscape.

There isn't anything else in this same area with this elevation. The proposed is said to house 3 people per unit, which I am sure will not be the case. There will undoubtedly be more people per unit.

It sounds like it is planned as a separate community with it's own theater and shops and garage parking.

The traffic will be increased 3 fold of the units proposed,  $253 \times 3 = 759$  more cars traveling on Katella morning and night to work and back. In addition to the occupant traffic will be the theater and shops.

I personally think this has not been thought out very well.

The current daily traffic on Katella is bad enough plus the strip mall that is proposed next or in front of the recent

Senior homes next to Cornerstone Church will add additional traffic.

I really think the Planning committee needs to rethink this whole idea.

I have lived in Cypress for 51 years and would hate to have this ruin our city.

I plan to be at the meeting on Monday.

Sincerely,

  
Star Johnson



**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: Peter Korody  
ADDRESS: 6238 James Alan St CITY: Cypress ZIP: 90630  
EMAIL ADDRESS: pk61801164@aol.com  
REPRESENTING: \_\_\_\_\_

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress

Attn: John P. Ramirez, AICP, City Planner

5275 Orange Avenue

Cypress, CA 90630

**Phone:** (714) 229-6720

**Email:** CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

Traffic At Kate RLA + 605 Freeway  
" " At Valley View + 405 " "

Low income housing Mandates  
will it be placed on the 13 acres.

**Please comment by December 23, 2019**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Vette Krebs & Louis Krebs  
Address: 6371 Ferne Ave City: Cypress Zip: 90630  
Email Address: vettecrystal@msn.com  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

**Please drop off comments at the Planning Department or mail or email them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [john.p.ramirez@cityofcypress.org](mailto:john.p.ramirez@cityofcypress.org)

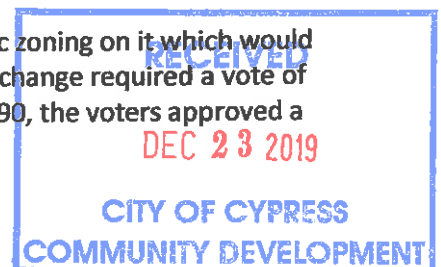
The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning**. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a



**Please Comment by December 23, 2019**

change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student



Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a ~~Dave & Buster's~~ or the Splitsville Luxury Lanes in Downtown Disney, *movie theater or nature center.*

Comments are due by December 23, 2019

---

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: CityPlanner@cypressca.org

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Linda Lawrence  
Address: 6302 Fern Ave City: Cypress Zip: 90630  
Email Address: llsnel/en@aol.com  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

**Please drop off comments at the Planning Department or mail or email them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: \_\_\_\_\_

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

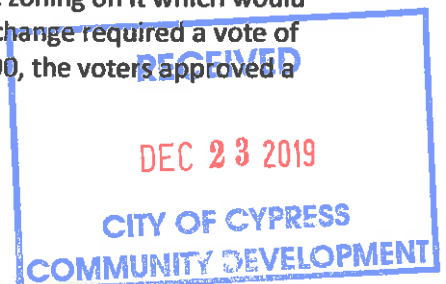
**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning**. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a

**Please Comment by December 23, 2019**



change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.
- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.
- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.
- **Transportation –** Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student

Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.

Comments are due by December 23, 2019

---

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT

Wednesday, December 11, 2019

NAME:

ADDRESS:

CITY:

ZIP:

EMAIL ADDRESS:

REPRESENTING:

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress

Attn: John P. Ramirez, AICP, City Planner

5275 Orange Avenue

Cypress, CA 90630

Phone: (714) 229-6720

Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

This seems to be loosely organized  
to reach only a few citizens & comments.

I am disappointed in city government  
Why don't you have chairs for us to  
write our comments comfortably?

I have seen many upgrades in 45 yrs.  
These are the worst impacts on our city  
now - Dense living high rise results in  
many adults living to share - too many cars  
not enough green space. No one even admits  
Police cannot cover crime investigations.  
We see blighted retail that Cypress Gov  
does not help - city does not maintain  
our city streets, fencing, sidewalks due to funding -  
We are turning into a ghetto & you  
are adding more expense to city.

Please comment by December 23, 2019

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019

NAME: T.R. MCCAULEY 12-23-2019  
ADDRESS: 1333 S. FREMONT CITY: ANAHEIM ZIP: 92804  
EMAIL ADDRESS: N/A  
REPRESENTING: WE THE PEOPLE

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720  
Email: CityPlanner@cypressca.org

RECEIVED

DEC 23 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

POTENTIAL ENVIRONMENTAL IMPACTS:

• AESTHETICS: CITY OF CYPRESS HAS LONG BEEN RECOGNIZED PUBLICLY AND PRIVATELY AS A GOVERNMENT LEADER PROMINENTLY PROTECTING "QUALITY OF LIFE FOR CYPRESS RESIDENTS AND ADJACENT COMMUNITIES." PROPOSED DEVELOPMENT VIOLATES THIS STANDARD BY INTENTIONAL DEVIATION FROM EXISTING ZONING DESIGNATION PBD-25A (PBP). THEREFORE, CCC NOT ONLY NEGATES CYPRESS PROTECTION FOR QUALITY OF LIFE CONCERNS - IT COUNTER ATTACKS PRIOR WRITTEN PLANNING GUARANTEEING PROTECTION TO US CITIZENS. WHY?

Please comment by December 23, 2019

PAGE 1/4

WHY IS EXPLAINED BY UNDERSTANDING THE THRUST OF THIS CCC. IT IS TO GENERATE NEW MONEY IN TAXES AND SERVICES FOR CITY OF CYPRESS. THERE IS NO VISIBLE BENEFIT TO CYPRESS CITIZENS. THE IMPLICATION WE THE PEOPLE BECOMES SECONDARY TO GOVERNMENT OFFICIALS WHO ALWAYS SUCCUMB TO POWER, PROMISES AND REVENUES FROM DEVELOPERS; INCLUDING CAMPAIGN DONATIONS AND OTHER PERQUISITES.

BECAUSE OF THIS CONTRARY VIEW RECOGNIZING THE DEMERITS OF THIS CCC, CITY OF CYPRESS OUGHT TO CEASE AND RESIST THE CURRENT DRIVE FOR THE DEVELOPMENT. OFFER TO US CYPRESS CITIZENS A REFERENDUM VOTE FOR OR AGAINST CCC.

• AESTHETICS CONTINUED:

DEMERITS FOR THIS CCC ARE OBVIOUS FOR THE 13-ACRE SITE:

- BUILDING A FOUR STORY RESIDENTIAL COMPONENT FOR RESIDENTS VERTICALLY STACKS TOO MANY HUMANS IN A NEW AND DENSE POPULATION EXPLOSION.

- DESIGNING THIS RESIDENTIAL COMPONENT PROVIDES AMENITIES WHICH ARE PRIVATE AND EXCLUDES WE THE PEOPLE. WE NEED A PUBLIC PARK ON THIS 13-ACRE VENUE.
- BUILDING A FIVE STORY HOTEL FOR TRANSIENT VISITORS TO OUR HOMETOWN DOUBLES, PERHAPS TRIPLES, THE POPULATION EXPLOSION ALONG WITH THE RESIDENTIAL COMPONENT. THAT'S A DOUBLE JEOPARDY.
- PROPOSING 20,800 SF OF RETAIL AND RESTAURANTS IS NOT DEFINED BUT SIMILARLY EXPANDS POPULATION AND USAGE ISSUES WHICH NEGATIVELY AFFECT OUR CITIZEN QUALITY OF LIFE.
- ADDING A 43,200 SF THEATER WHICH IS PRINCIPALLY FOR P.M. ENTERTAINMENT EMPHASIZES STATED DEMERITS.
- PROPOSED OFFSITE IMPROVEMENTS AS STATED OFFER NO BENEFIT TO WE THE PEOPLE. WE NEED PUBLIC BENEFITS FOR ANY CYPRESS PROJECT.



## POTENTIAL ENVIRONMENTAL IMPACTS :

- LAND USE AND PLANNING: AS RECORDED, PROPOSED PROJECT INCLUDES LAND USES THAT ARE NOT EXPRESSLY ALLOWED BY THE SPECIFIC PLAN. THEREFORE, EXPRESSLY DISALLOWED. WE CITIZENS DEMAND THAT NO AMENDMENT BE MADE TO THE SPECIFIC PLAN.
- POPULATION AND HOUSING: INCLUDING A MINIMUM OF 25 APARTMENT UNITS IN NO WAY MINIMIZES POPULATION EXPLOSION. STRUGGLING RESIDENTS WILL ADD CO-TENANTS TO REDUCE THE HIGH-COST OF LIVING. THAT'S ANOTHER THREAT TO OUR COMMUNITIES STANDARD OF LIVING.

THERE ARE ACCORDINGLY, MANY UNRESOLVED PITFALLS BY EXAMINING THE REALITY FOR CCC.

PLEASE HEAR US, LISTEN TO US, RESPOND TO US, WE THE PEOPLE. HONOR US BY GIVING TO US THE RIGHT TO VOTE ON THIS CCC.

RESPECTFULLY,  
T.R. MCCAULEY

**From:** tpupilov@aol.com  
**To:** [City Planner](#)  
**Subject:** Fwd: Shea project / Katella  
**Date:** Sunday, December 22, 2019 4:38:37 PM

---

-----Original Message-----

From: TRACY MACKEY <tpupilov@aol.com>  
To: georgepardon <georgepardon@gmail.com>  
Sent: Sat, Dec 21, 2019 9:25 pm  
Subject: Shea project / Katella

I very strongly oppose the building of apartments in this said area. It will have a very huge effect on the traffic flow regarding Katella going East to West, also impacting shopping centers throughout Cypress and mainly Los Alamitos. Also the homes considered "Carrier Row", our parks, our grocery stores, all the facilities west of this complex will see the greatest effect. Cypress or not, it will lead to disaster.

At this time we are in the process of a huge luxury apartment complex on Cerritos and Chestnut St., a huge townhome development, plus a hotel within 2 miles of each other in Los Alamitos. This is on Los Alamitos Blvd by Old Town. Sausalito and Los Alamitos Blvd.

These quaint towns that we've lived in for over 50 years is being over developed and causing grid lock on all the main streets and on our residential streets.

This is pure greed shown from these developers, it has literally destroyed both Cypress but mainly Los Alamitos. I realize the city line, but I also see how our town has become a nightmare even to go to a grocery store within a mile from my home. Our children can't ride bikes because of cars zooming down the side streets and the main streets. Extremely dangerous and extremely selfish to take away the joys of children.

It is an absolute disgrace that these city planners are ruining and destroying our homes. Not only removing safety for our children. It is so crowded on the roads, bumper to bumper traffic throughout the day. Unsafe air quality, dredging up contaminated ground that was forbidden to be used for any construction for the last 30 years.

I've had 3 neighbors that have owned their homes since the late 50's to the 70's sell their properties to get away from this mass development that has effected their daily routines, within this last year alone!

Shame on you for using and trying to develop any piece of dirt left in this 5 mile radius. You have destroyed a once beautiful area with over population and over building.

What's also amazing to many, there are so many empty office buildings, vacant stores, but you developers still manage to construct new buildings... That are also empty still!!!

Believe me when I tell you, it is all people talk about, complaining and disliking living here any longer.

I loved my safe town, I loved being able to walk without fear to the local corner store for an ice cream with my children. Or ride our bicycles through Rossmoor and laugh and enjoy the day. Not any more, too many cars, too many people, a complete tragedy waiting to happen. Everyday, all day!

I ask please do not develop your plan of another huge "luxury apartment complex". You will be hurting so many people just to make your pocket book larger.

Respectfully,

Tracy Mackey  
Los Alamitos

Sent from my iPhone

**From:** Brent Marino  
**To:** [City Planner](#)  
**Subject:** EIR  
**Date:** Wednesday, December 18, 2019 2:47:58 PM

---

Regarding the Shea development on Katella...  
I agree 100% with the quote I attached below.

The 4 story high density plan is a radical step away from Cypress' aesthetics.

The impact to parking, traffic, air quality, population, and overall congestion will impact our infrastructure, property values, and quality of life. Our property is located on Ferne Ave. west of Holder Ave. Apartments in the area are 2 stories, lower density.

A 4-story apartment building which necessitates a multi-level parking garage to accommodate the influx of vehicles does not provide continuity to Cypress. We have new apartments on Lincoln which have added to parking, traffic, and other problems. This 4-story plan may be in Shea's best interest but is not in ours.

Cypress residents would like Development that would improve the quality of life and maintain our City's image. 2-story non-dense residential, affordable senior apartments, or a family-friendly hub of activity, dining, retail would be in-line and match Cypress' current demographic. This proposed plan is fraught with far reaching consequences including the impact to traffic on streets running North/South through Cypress and the congestion it will cause for neighborhood schools.

“Comments:

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning.** Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall. <https://linkprotect.cudasvc.com/url? a=https%3a%2f%2fwww.ocregister.com%2f2019%2f06%2f26%2fplan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council%2f&c=E.1.1n4xEn7ZXgoc11SA7-tVOMZycYG9shrw-FOfiX3IWwvMQoAHrPCzZfZcG2Is6ETB2yECnFlqp9wvoBzcYznm94stEFvfMazpDC8AymRhwp5R0QsAtWLKoOXVUdM.&typo=1>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents.

These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

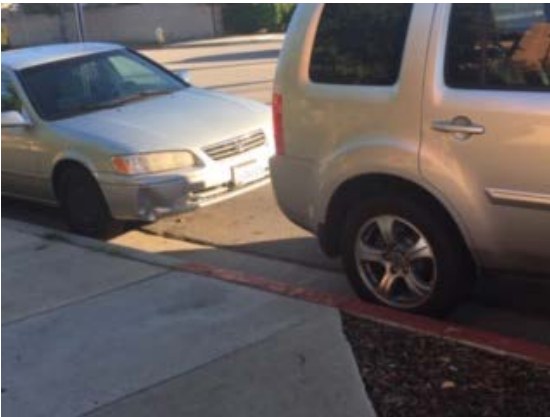
- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney."

Thank you,  
Ingrid and Brent Marino  
23 year residents





Photos: Typical parking problems created by increasing numbers of drivers per apartment unit. Pictured, Casa Grande on Denni, 12/15/19.  
Sent from my iPhone

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: Steven Mauss  
ADDRESS: 4183 Teresa Ave CITY: Cypress ZIP: 90630  
EMAIL ADDRESS: Steven.Mauss@gmail.com  
REPRESENTING: Self

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

**Phone:** (714) 229-6720

**Email:** CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

The density of the residential is too high by  
a factor of 3. The traffic on Katella would be  
horrendous, impacting air quality and emergency  
services.

**Please comment by December 23, 2019**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: JON + YOLIE MIASNIK  
ADDRESS: 10864 ALEGRIA CT CITY: CYPRESS ZIP: 90720  
EMAIL ADDRESS: YMIASNIK@GMAIL.COM  
REPRESENTING: \_\_\_\_\_

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

**Phone:** (714) 229-6720  
**Email:** CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

CONCERN ABOUT CLIENTLE FOR PROPOSED  
HOTEL.

**Please comment by December 23, 2019**



**From:** Angie Mizrahi  
**To:** [City Planner](#)  
**Subject:** Acreage vs anchorage on Katella  
**Date:** Wednesday, December 18, 2019 10:54:55 AM

---

Good afternoon Mr. Ramirez.

I am writing to you in regards to the property being developed. I do not support a four story building full of extra people in our community using our resources and crowding our streets. However, I am also a realist that lives off of Walker a much traveled road where people are still able to speed past the speed limit. If we were to have a new apartment complex that is an appropriate location. I personally would like to see the building no taller than the tallest along that street. There is no reason for it to stick out like a sore thumb we all know that apartments are not aesthetically constructed. I drive by the apartments near Bella Terra and cringe. Near a college was fitting for those, not here! Please!

I am actually more thrilled about the possibility of family entertainment.

Please look at Big Als as a possible fit, if they will come this way we would all benefit!

There is a gorgeous, very family orientated mall in Meridian ID called the Village it has this on one corner as an anchor and it is always busy with families, teams, parties and just people enjoying a meal. A Dave and Busters but better. This mall has a small playground and water fountain in the center of the outdoor mall area and at least 4 restaurants face the playground with outdoor seating where families can enjoy outdoor time, watch a sport on tv and watch their children at the playground area all at the same time. The fountain and small water fall are host duck race fundraisers and has colored music for the holidays, There is a small stage also in the center where local bands can rent and entertain guests. The center is very well planned and worth your trip to see what would generate money, family and unity here in CYP!

If we have to develop this land. Please consider an environment where we can come together with our community and its youth to enjoy what life has to offer and allow us to stay local.

Kind Regards,

Angie Mizrahi

**CITY OF CYPRESS  
COMMUNITY DEVELOPMENT**

December 22, 2019

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Re: Cypress City Center Project Comment Form

Dear Mr. Ramirez,

Before I get into my comments regarding the EIR comment form I must express my disappointment in the fact that the city purposely decided to hold the EIR session with such short notice and place a deadline on citizens to respond two days prior to Christmas. These actions reflect poorly upon the city council and those involved in this project.

The following is my formal submission in regards to the City Center Project EIR Comment form due December 23, 2019.

### **Aesthetics**

Katella avenue is a primary transportation corridor in within the city of Cypress and Orange County. Given how heavily this corridor is used by city residents I have the following comments and concerns:

- Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low-density residential community.
- The proposed project introduces the first 4 story apartment building and the first parking garage in our city.
- This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is.
- In 2016, the same City Council members that are serving now and approved of this development opposed a 66-unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns.
  - The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre.
  - Everyone agreed that this development with the height limit was more representative of who Cypress is.
  - How could our city have changed so dramatically in 4 years?
  - Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

## Air Quality

- The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components.
- Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

## Land Use and Planning

- Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project.
- Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987.
- In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties.
  - The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents.
  - The residents at that time evidently believed the city leaders would honor the voice of the residents.
  - As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning.
  - It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents.
- The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.
- The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component.
  - Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential.
    - If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation.
    - If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful.
    - *Side Note/Example for Comparison:* Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.  
<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- Questions:
  - Is the developer, Shea, aware that a competing movie theatre located in Garden Grove on Valley View at Chapmen is currently being built?
  - If the movie theatre and/or restaurants are not successful will the developer be allowed to convert the property in to an additional high-density housing development?


## Population and Housing

The current residential occupancy in our city averages 3 people per residence.

- If that average holds out, the population in our city would grow by 750 residents due to this project.
- Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to **substantial overcrowding in residential units**.
- In fact, the standard is that two people can occupy each bedroom with one additional person in the living space.
  - As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents.
  - These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially under park a residential development.
    - This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant.
- The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.
- Questions:
  - 1) What is the proposed breakdown in unit types: Studio, 1 bedroom, 2 bedroom and 3 bedrooms?
  - 2) For the breakdowns in number 1, what are the maximum occupancy per unit based on unit types (studio, 1 bedroom, 2 bedrooms and 3 bedrooms)?
  - 3) What percentage/number of designated units will be affordable housing?
  - 4) What are the proposed number of parking spaces in the parking garage?
  - 5) What are the number of proposed handicapped parking spaces in the parking garage?
  - 6) What are the number of proposed handicapped parking spaces outside of the garage/close to the building entrance(s)?
  - 7) What are the number of visitor parking spaces proposed inside of the parking garage?
  - 8) What are the number of visitor spaces proposed outside of the parking garage?

- 9) Is the city considering all current **and** future developments in looking at the overall “big picture” for the city?
  - *Consideration examples:*
    - *3 commercial tenants, Yamaha, Vans and Mitsubishi Motors have vacated and/or are in the process of vacating. This leaves 3 major commercial properties at the intersection of Katella & Holder potentially available to new tenants.*
      - *Question 1: Once new tenants are identified how will these types of new tenants potentially impact traffic flow, and near-by residential neighborhoods, on Katella in conjunction with the new Shea City Center development?*
    - *Measure A Los Alamitos Race Track at some point will be sold and subsequently developed.*
      - *Question 2: What long-term planning consideration is being take into account with the additional traffic increase on Katella and Cerritos due to this new development and the 2 additional parks?*

### **Public Services**

- This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.
-  **Questions:**
  - 1) What is the proposed number of increase(s) to the number of police officers required to support this new development?
  - 2) What is the proposed number of increase(s) to the number of firefighters required to support this new development?
  - 3) What is the proposed number of increase(s) to the number of paramedics required to support this new development?

### **Hydrology & Water Quality**

- **Questions:**
  - 1) With the current and ever-increasing water conservation rules placed on each city/water agency, what considerations are being taken to ensure that water rates to current city residents and businesses will not be impacted by the addition of this development?

### **Recreation**

- When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided.
- No new park land will come from this project.
- While there will be park developer fees paid as part of the construction costs, this is one-time money and no new park will be provided.
- **Question:**
  - 1) What are the estimated impacts to existing parks?

## Transportation

Since this project will sit on Katella, many think about the traffic impacts on Katella.

- The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services.
- The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction.
  - The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit.
    - As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services.
    - The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic.
    - If overcrowding in these units takes place then the problem is worse.
- This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create.
  - These intersections need to be studied.
- **Question:**
  - 1) Will this new development require new bus stop(s) along Katella to support a new housing development?

I believe strongly that the city should step back and consider alternative projects for this property:

- A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage.
- Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.
- The city should consider a high-end grocery store such as Trader Joe's, Sprouts or Whole Foods be a part of this development. The City of Cypress residents have been requesting better grocery options than that are currently provided in the city.
- The city should also examine the feasibility of affordable senior apartments. The City of Cypress currently has 2 designated apartment complexes that have a multi-year wait list. The city demographics and demand support this need

I would like to know when residents will have the opportunity to meet with the city and the developer for a two-way dialog in addition to the city properly communicating this meeting to the residents. Simply announcing on the city website and in an ad for a paid newspaper for which many residents do not subscribe to is an insufficient means of communicating with the residents.

Regards,



Brooke Nafarrete  
6251 Ferne Ave.  
Cypress, CA. 90630

RECEIVED  
DEC 23 2019  
CITY OF CYPRESS  
COMMUNITY DEVELOPMENT



December 22, 2019

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Re: Cypress City Center Project Comment Form

Dear Mr. Ramirez,

Before I get into my comments regarding the EIR comment form I must express my disappointment in the fact that the city purposely decided to hold the EIR session with such short notice and place a deadline on citizens to respond two days prior to Christmas. These actions reflect poorly upon the city council and those involved in this project.

The following is my formal submission in regards to the City Center Project EIR Comment form due December 23, 2019.

### **Aesthetics**

Katella avenue is a primary transportation corridor in within the city of Cypress and Orange County. Given how heavily this corridor is used by city residents I have the following comments and concerns:

- Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low-density residential community.
- The proposed project introduces the first 4 story apartment building and the first parking garage in our city.
- This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is.
- In 2016, the same City Council members that are serving now and approved of this development opposed a 66-unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns.
  - The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre.
  - Everyone agreed that this development with the height limit was more representative of who Cypress is.
  - How could our city have changed so dramatically in 4 years?
  - Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

## Air Quality

- The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components.
- Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

## Land Use and Planning

- Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project.
- Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987.
- In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties.
  - The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents.
  - The residents at that time evidently believed the city leaders would honor the voice of the residents.
  - As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning.
  - It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents.
- The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.
- The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component.
  - Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential.
    - If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation.
    - If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful.
    - *Side Note/Example for Comparison:* Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.  
<https://www.oregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

## Air Quality

- The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components.
- Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

## Land Use and Planning

- Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project.
- Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987.
- In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties.
  - The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents.
  - The residents at that time evidently believed the city leaders would honor the voice of the residents.
  - As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning.
  - It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents.
- The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.
- The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component.
  - Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential.
    - If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation.
    - If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful.
    - *Side Note/Example for Comparison:* Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.  
<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- Questions:
  - Is the developer, Shea, aware that a competing movie theatre located in Garden Grove on Valley View at Chapmen is currently being built?
  - If the movie theatre and/or restaurants are not successful will the developer be allowed to convert the property in to an additional high-density housing development?

### Population and Housing

The current residential occupancy in our city averages 3 people per residence.

- If that average holds out, the population in our city would grow by 750 residents due to this project.
- Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to **substantial overcrowding in residential units**.
- In fact, the standard is that two people can occupy each bedroom with one additional person in the living space.
  - As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents.
  - These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially under park a residential development.
    - This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant.
- The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.
- Questions:
  - 1) What is the proposed breakdown in unit types: Studio, 1 bedroom, 2 bedroom and 3 bedrooms?
  - 2) For the breakdowns in number 1, what are the maximum occupancy per unit based on unit types (studio, 1 bedroom, 2 bedrooms and 3 bedrooms)?
  - 3) What percentage/number of designated units will be affordable housing?
  - 4) What are the proposed number of parking spaces in the parking garage?
  - 5) What are the number of proposed handicapped parking spaces in the parking garage?
  - 6) What are the number of proposed handicapped parking spaces outside of the garage/close to the building entrance(s)?
  - 7) What are the number of visitor parking spaces proposed inside of the parking garage?
  - 8) What are the number of visitor spaces proposed outside of the parking garage?

- 9) Is the city considering all current and future developments in looking at the overall "big picture" for the city?
  - *Consideration examples:*
    - *3 commercial tenants, Yamaha, Vans and Mitsubishi Motors have vacated and/or are in the process of vacating. This leaves 3 major commercial properties at the intersection of Katella & Holder potentially available to new tenants.*
      - *Question 1: Once new tenants are identified how will these types of new tenants potentially impact traffic flow, and near-by residential neighborhoods, on Katella in conjunction with the new Shea City Center development?*

### **Public Services**

- This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.
- **Questions:**
  - 1) What is the proposed number of increase(s) to the number of police officers required to support this new development?
  - 2) What is the proposed number of increase(s) to the number of firefighters required to support this new development?
  - 3) What is the proposed number of increase(s) to the number of paramedics required to support this new development?

### **Hydrology & Water Quality**

- **Questions:**
  - 1) With the current and ever-increasing water conservation rules placed on each city/water agency, what considerations are being taken to ensure that water rates to current city residents and businesses will not be impacted by the addition of this development?

### **Recreation**

- When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided.
- No new park land will come from this project.
- While there will be park developer fees paid as part of the construction costs, this is one-time money and no new park will be provided.
- **Question:**
  - 1) What are the estimated impacts to existing parks?

## Transportation

Since this project will sit on Katella, many think about the traffic impacts on Katella.

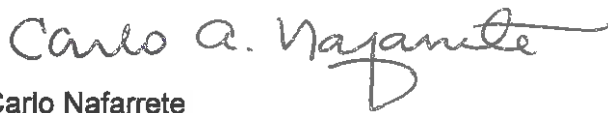
- The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services.
- The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction.
  - The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit.
    - As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services.
    - The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic.
    - If overcrowding in these units takes place then the problem is worse.
- This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create.
  - These intersections need to be studied.
- Question:
  - 1) Will this new development require new bus stop(s) along Katella to support a new housing development?

I believe strongly that the city should step back and consider alternative projects for this property:

- A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage.
- Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.
- The city should consider a high-end grocery store such as Trader Joe's, Sprouts or Whole Foods be a part of this development. The City of Cypress residents have been requesting better grocery options than that are currently provided in the city.
- The city should also examine the feasibility of affordable senior apartments. The City of Cypress currently has 2 designated apartment complexes that have a multi-year wait list. The city demographics and demand support this need

I would like to know when residents will have the opportunity to meet with the city and the developer for a two-way dialog in addition to the city properly communicating this meeting to the residents. Simply announcing on the city website and in an ad for a paid newspaper for which many residents do not subscribe to is an insufficient means of communicating with the residents.

Regards,



Carlo Nafarrete  
6251 Ferne Ave.  
Cypress, CA. 90630

# Katella Ave Property



**hwnista@aol.com**  
Yesterday, 6:05 PM  
City Planner ▾

Reply all | ▾

Inbox

Label: Cypress 6 Month Retention Policy (6 months) Expires: 6/15/2020 6:05 PM



Phish Alert



I have been following information provided on the Katella Avenue project and I do not like what I am reading. This development does not fit in with the rest of Cypress and I am very disappointed in the direction the city council is taking this city, I have been a resident of Cypress since 1975 and the proposals I have seem of high density residential buildings is not what the people of Cypress want. This was demonstrated by two recent issues put before the voters who turned down high density residential proposals but the city council seems to ignore the will of the voters and approved this project. I would sincerely encourage the city council to review this project again and support a lower density project.

Howard Nista  
9750 Rome St  
Cypress

**From:** Melody Nista  
**To:** [City Planner](#)  
**Subject:** Katella project  
**Date:** Sunday, December 22, 2019 8:10:11 AM

---

Please don't build all those apartments on Katella.

Now we hear that if retail can't be found more apartments will be squeezed onto the property

The will of the citizens is of utmost importance. We've voted for one thing only to find the city council is doing the complete opposite.

Melody Nista  
9750 Rome St

Sent from my iPad



**From:** cindy omalley  
**To:** [City Planner](#)  
**Subject:** 13 Acre Plan  
**Date:** Sunday, December 22, 2019 7:57:12 PM

---

I am strongly opposed to the current plan! I'm angry that you would propose a plan like this.  
I'm too busy to write more but just know How much I oppose it!

Concerned Cypress Resident,

Cynthia O'Malley

**From:** Lector Orrick  
**To:** [City Planner](#)  
**Subject:** Fw: It's all about parking, 3 times 251 equals a whopping 753 spaces required!  
**Date:** Wednesday, December 18, 2019 3:54:53 PM

---

----- Forwarded Message -----

**From:** George Pardon <georgepardon@gmail.com>  
**To:** Lector Orrick <col\_lector@yahoo.com>  
**Sent:** Wednesday, December 18, 2019, 01:52:52 PM PST  
**Subject:** Re: It's all about parking, 3 times 251 equals a whopping 753 spaces required!

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

REPRESENTING: \_\_\_\_\_

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

**Please comment by December 23, 2019**

## Environmental Topics to be Addressed

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems



Sent from my iPhone

On Dec 18, 2019, at 1:39 PM, Lector Orrick <col\_lector@yahoo.com> wrote:

Sent me the form, I don't have Facebook. Take a look at parking problem for apartments on n/e corner of Bloomfield and Cerritos. Parking require is going to be way understate. 3 parking spaces required for H and W both working a one teenage son with a drivers license and more than likely a car. Calif very expensive for 80-100 K combined per year. Deluxe apartments great with adequate but lets no agree to build a Slum/Ghetto at the git go. Thanks in advance, Lector and Carolyn Orrick, Cypress residents since 1975.

PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019

NAME: Tisha Orabuena  
ADDRESS: 10531 Hester St CITY: Cypress ZIP: 90630  
EMAIL ADDRESS: lovebnmom2@aol.com  
REPRESENTING: myself

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

Please drop comments in the Comment Box or mail them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720

Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the *environmental issues* to be addressed in the EIR (please print).

I am concerned about the development  
and wish to stay in the loop on the plans  
and voting

Thank you.

Tisha Orabuena

RECEIVED

DEC 23 2019

CITY OF CYPRESS  
COMMUNITY DEVELOPMENT

Please comment by December 23, 2019

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: George Pardon  
Address: 10447 Santa Clara Street, Cypress 90630  
Email Address: [georgepardon@gmail.com](mailto:georgepardon@gmail.com)  
Representing: Self

Do you wish to be added to the project mailing list?    YES



**Please drop off comments at the Planning Department or mail or email them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning**. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a

**Please Comment by December 23, 2019**

change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

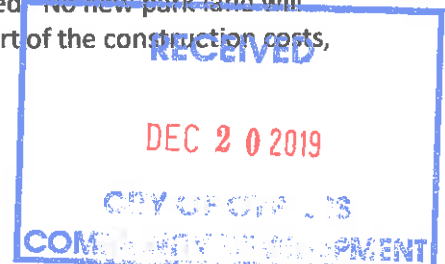
The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. When the City Council approved the Exclusive Negotiation Agreement with Shea in April 2019, the agreement clearly said the density was 63 units per acre which was based on 251 units on 4 acres. The rendering submitted by Shea also said 63 units per acre. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall. <https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/> The report should specifically delineate the City Council's plan on any re-zoning and study any ramifications accordingly. The residents have had to deal with bait and switch scenarios in the past.

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

Please Comment by December 23, 2019





change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

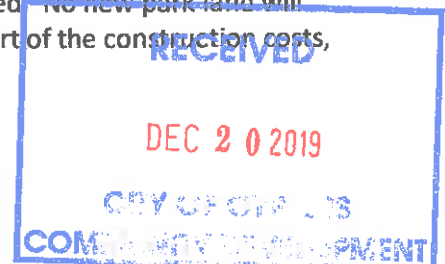
The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. When the City Council approved the Exclusive Negotiation Agreement with Shea in April 2019, the agreement clearly said the density was 63 units per acre which was based on 251 units on 4 acres. The rendering submitted by Shea also said 63 units per acre. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall. <https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/> The report should specifically delineate the City Council's plan on any re-zoning and study any ramifications accordingly. The residents have had to deal with bait and switch scenarios in the past.

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

Please Comment by December 23, 2019





• **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

**Project Alternatives:**

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage.

Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.



**Please Comment by December 23, 2019**

**From:** Lynn Pardon  
**To:** [City Planner](#)  
**Subject:** Cypress City Center - Public Scoping Meeting Comment Card Revised  
**Date:** Saturday, December 21, 2019 12:05:20 AM  
**Attachments:** [Cypress City Center - Public Scoping Meeting Comment Card Revised.docx](#)

---

Dear Mr. Ramirez,

Thank you for the time you spent with George and me discussing our concerns on the pending developments on the 13 Acre Site on Katella Avenue in Cypress. In talking it over, I realized I would like to revise my EIR comments to include my additional concerns. Nothing else is changed in my submission except for an added paragraph at the end of Land Use and Planning and a paragraph added under Drainage and Absorption, noted below. Please forward my attached revised comments to the EIR committee.

Sincerely,  
Lynn Pardon

Land Use and Planning - While my hope is that the residential density in this project is lowered significantly, if this project moves forward, I think the residential component should be moved to the Winner's Circle side of the project site. Having the residential component along the race track entrance doesn't seem like a good fit. Also, if the race track ever closes, there is supposed to be a town center immediately north of this project site with Siboney as a likely entrance to the town center. This project site should be laid with consideration of any future development. Having the residential component adjacent to Winners Circle also allows residents easy walking access to Costco and the other restaurants in that development rather than the residents having to walk in front of or behind the movie theater which doesn't seem as safe.

Drainage and Absorption - Because of a high water table, much of Cypress is prone to flooding during heavy or frequent rains, as the water takes time to dissipate. I expect the builders of this project to pay extra special attention to the need for a water retention basin and runoff directions to assure that when it rains the subject property, surrounding businesses and streets are not affected by flooding. For instance, on westbound Katella the 3<sup>rd</sup> lane east of Lexington floods to the extent of closure, which becomes a safety issue as cars abruptly make a lane change to avoid the flooded lane. I personally experienced this several times in 2019. There is a required water retention basin in the parking lot of Cottonwood Church which helps their property but not the flooding on Katella Avenue itself. So it is imperative that each property handle the water retention necessary in order to relieve flooding in surrounding areas.

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Lynn Pardon  
Address: 10447 Santa Clara Street City: Cypress Zip: 90630  
Email Address: lpardon@sbcglobal.net  
Representing: Self  
Do you wish to be added to the project mailing list? YES

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.
- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.
- **Land Use and Planning** - Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning

**Please Comment by December 23, 2019**

permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

While my hope is that the residential density in this project is lowered significantly, if this project moves forward, I think the residential component should be moved to the Winner's Circle side of the project site. Having the residential component along the race track entrance doesn't seem like a good fit. Also, if the race track ever closes, there is supposed to be a town center immediately north of this project site with Siboney as a likely entrance to the town center. This project site should be laid with consideration of any future development. Having the residential component adjacent to Winners Circle also allows residents easy walking access to Costco and the other restaurants in that development rather than the residents having to walk in front of or behind the movie theater which doesn't seem as safe.

- Drainage and Absorption – Because of a high water table, much of Cypress is prone to flooding during heavy or frequent rains, as the water takes time to dissipate. I expect the builders of this project to pay extra special attention to the need for a water retention basin and runoff directions to assure that when it rains the subject property, surrounding businesses and streets are not affected by flooding. For instance, on westbound Katella the 3<sup>rd</sup> lane east of Lexington floods to the extent of closure, which becomes a safety issue as cars abruptly make a lane change to avoid the flooded lane. I personally experienced this several times in 2019. There is a required water retention basin in the parking lot of Cottonwood Church which helps their property but not the flooding on Katella Street itself. So it is imperative that each property handle the water retention necessary in order to relieve flooding in surrounding areas.

- Population and Housing - The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two

people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- Public Services - This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.
- Recreation - When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.
- Transportation – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

A project alternative would be to significantly lower the density of the apartment complex as well as the overall height of the residential units to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.

Comments are due by December 23, 2019

---

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: Clyde Schechter

ADDRESS: 9684 Via Media CITY: Cypress ZIP: 90630

EMAIL ADDRESS: clyde.schechter@gmail.com

REPRESENTING: Self

Do you wish to be added to the project mailing list?

☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

**Phone:** (714) 229-6720

**Email:** CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the *environmental issues* to be addressed in the EIR (please print).

With 250 units planned, at a rental that will be affordable primarily to households with two (or more) income earners, we can anticipate  
that the development will bring in around 500 additional cars. The proposed four-story garage, with 55 spots per story can accommodate  
less than half of that. Where will the rest of the cars park? Worse, being cars of people with jobs, we can anticipate that all 500 of them  
will enter and leave the development within a short time at evening and morning rush hours, adding to the already intense traffic on  
Katella Avenue.

As the existing Cypress schools are already packing students into temporary structures (trailers, actually) for classrooms, the school  
systems (CSD and AUHSD) are already working at over 100% capacity. Some proportion of the households that can afford this housing  
will have children and will further overburden the local schools. This will, in turn, add to traffic congestion experienced at drop-off and  
pick-up time on the streets adjacent to the Cypress schools.

Cypress does not need more people living here, and it certainly does not need the associated crowding and traffic congestion. What  
Cypress needs is more business establishments catering to the needs of the existing residents.

**Please comment by December 23, 2019**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Christine Scheichl  
Address: 6272 Ferne Ave City: Cypress Zip: 90630  
Email Address: \_\_\_\_\_  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)



The city should continue to implement green spaces that add to the aesthetics of the city. We already have an abundance of retail venues. Our city is unique and should remain that way. Cypress residents live here because it is a pleasant city in which to reside. Adding high-rise buildings and/or additional retail will add to the traffic of the city which is already getting out of hand. Cypress residents have always been informed of changes. Please continue to respect our right to know about changes in our city. Meetings with hidden agendas are not appreciated. The Project Meeting was not communicated clearly and many residents did not get the information needed to attend the December 11th meeting. In the future, it would be helpful to include such important information in the city newsletter that reaches all citizens of Cypress.

I am in agreement with the following comments submitted by George Pardon. Mr. Pardon's comments are copied below:

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- Aesthetics – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of what Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer

**Please Comment by December 23, 2019**

went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of what Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning.** Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so



many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.
- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.
- **Transportation –** Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.



Christine Scheichl  
6272 Ferne Ave  
Cypress CA 90630

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: Marcela Vabovic  
ADDRESS: 5491 Ball Rd CITY: Cypress ZIP: 90660  
EMAIL ADDRESS: marcekvat@yahoo.com  
REPRESENTING: Resident / business owner

Do you wish to be added to the project mailing list?

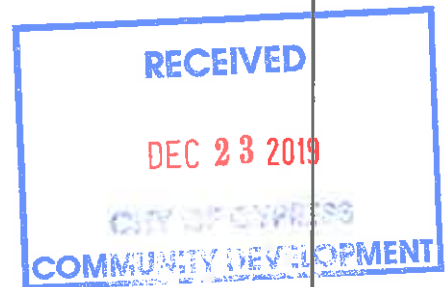
☒ YES

☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720  
Email: CityPlanner@cypressca.org



The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

Being a resident and business owner in the city of Cypress, your project represent no benefit. I presently drive 102 miles from home to work, it can take me 20 minute of commute time.

- 4 story building with over 200 units of residence. will bring in more cars (traffic) and multiple families living in one unit. \*Air quality \*Aesthetics \*Noise

- Movie Theatre - is only a business that is struggling to survive.

- Shipping Center, with the rise of online shopping, shipping centers are struggling to survive.

Your report might show information and numbers expressing the city is capable of developing but for a resident the impact of environment is not a positive outcome.

**Please comment by December 23, 2019**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019**

NAME: WILLIAM HUTCHINS  
ADDRESS: 9148 CHRISTOPHER ST. CITY: CYPRESS ZIP: 90630  
EMAIL ADDRESS: WHUTCHINS@CA.RR.COM  
REPRESENTING: SELF

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

**Please drop comments in the Comment Box or mail them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630

Phone: (714) 229-6720  
Email: CityPlanner@cypressca.org

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comments for the record that pertain to the **environmental issues** to be addressed in the EIR (please print).

A PROJECT OF THIS TYPE IS TOTALLY OUT OF CHARACTER  
WITH OUR CITY, AND WILL ONLY SERVE TO ADD  
MORE CONGESTION TO OUR STREETS AND BUSINESSES,  
ALONG WITH ADDING MORE LOAD TO OUR OVERTAXED  
AND UNDER-MAINTAINED POWER GRID & WATER SUPPLY.  
IT'S PRETTY OBVIOUS WHAT THIS SCURGE OF  
HIGH-DENSITY HOUSING IS DOING TO OUR COMMUNITY  
WHEN WE HAVE TO WAIT DURING TWO LIGHT CYCLES  
TO MAKE A LEFT TURN, OR WAIT SOMETIMES  
40 MINUTES OR MORE TO GET A SEAT IN A LOCAL  
RESTAURANT. CRAP HOUSING LIKE THIS HAS NO  
PLACE IN OUR CITY, IT'S SAD ENOUGH THAT WE  
GOT STUCK WITH ALL OF THE BONNANI / BOWMAN  
PROJECTS AND NOW YOU WANT TO TRAIN US TO  
ACCEPT THESE MASSIVE BIRDCAGES IN THE NAME  
OF MORE TAX REVENUE.

Please comment by December 23, 2019



**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Joe & Judy Venawine  
Address: 10292 JANICE LYNN St. City: Cypress Zip: 90630  
Email Address: NA  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

**Please drop off comments at the Planning Department or mail or email them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

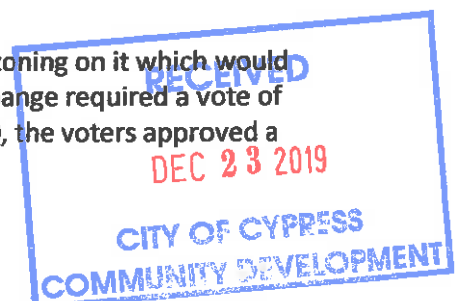
**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.

- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.

- **Land Use and Planning**. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a

**Please Comment by December 23, 2019**



change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student

Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.

Comments are due by December 23, 2019

---

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)



**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: WAYNE YENAWINE  
Address: 6282 FERRE City: CYPRESS Zip: 90630  
Email Address: ELDIA.BLOONE@CA.PR.COM  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

**Please drop off comments at the Planning Department or mail or email them to:**

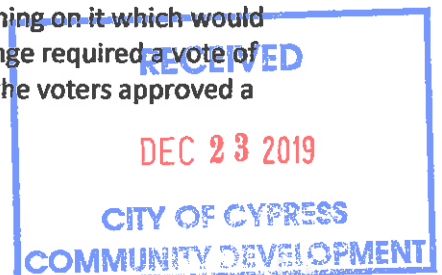
City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

**Comments:**

- **Aesthetics** – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.
- **Air Quality** – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.
- **Land Use and Planning**. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a

**Please Comment by December 23, 2019**





change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student

Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.

Comments are due by December 23, 2019

—

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

**Please Comment by December 23, 2019**

**PUBLIC SCOPING MEETING  
CYPRESS CITY CENTER PROJECT  
Wednesday, December 11, 2019  
Please Comment by December 23, 2019**

Name: Linda Zimmerman \_\_\_\_\_  
Address: 5036 Eucalyptus Circle \_\_\_\_\_ City: Cypress \_\_\_\_\_ Zip: 90630 \_\_\_\_\_  
Email Address: kennys1mom@hotmail.com \_\_\_\_\_  
Representing: \_\_\_\_\_

Do you wish to be added to the project mailing list?    YES      NO X

**Please drop off comments at the Planning Department or mail or email them to:**

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)

The purpose of this comment card is to solicit input regarding the scope and content of the Environmental Impact Report (EIR). Please submit comment for the record that pertain to the environmental issues to be addressed in the EIR (please print).

Comments (copied from George Pardon):

- Aesthetics – Katella Ave is a primary transportation corridor in Orange County. Putting a 4-story high density apartment building with a parking garage along a primary city boundary is going to give an image to those driving by that Cypress is something other than a low density residential community. The proposed project introduces the first 4 story apartment building and the first parking garage. This is not representative of who Cypress is. Drive around our city and you will see that this apartment complex with a parking garage is not aesthetically or otherwise representative of who Cypress is. In fact, in 2016, the same City Council members that are serving now opposed a 66 unit residential townhome development on Orange Ave across from City Hall because some units were 3 story and they had traffic and safety concerns. The density on that project was less than twenty units per acre. The developer went back and revised their project to 52 units that were 2 stories with a density closer to 15 units per acre. Everyone agreed that this development with the height limit was more representative of who Cypress is. How could our city have changed so dramatically in 4 years? Even the apartments on Lincoln are substantially lower density when you make the density calculation based on the site the residential units physically occupy. Most residents would tell you that they still believe the density on those Lincoln units is too high.
- Air Quality – The density calculation that the city has suggested is very misleading because it gives no consideration to the hotel, movie theater, and retail components. Increased traffic given the compactness of this site will clearly lend itself to poorer air quality.
- Land Use and Planning. Prior to 1990, this property had Public/Semi-Public zoning on it which would have prohibited any of the uses being proposed by the project. Any zoning change required a vote of the residents due to Measure D that was approved by voters in 1987. In 1990, the voters approved a

**Please Comment by December 23, 2019**

change to the zoning on some of the frontage road along Katella and along Walker St. The zoning permitted the commercial/retail/office projects currently found on those frontage properties. The residents did not approve a zoning change that permitted residential. However, when the zoning was changed, there was unfortunately no caveat in the language that said that future zoning changes would have to be voted on by the residents. The residents at that time evidently believed the city leaders would honor the voice of the residents. As residents have seen some of the zoning changes that have been made by the city leadership in recent years, there is a growing demand for a separate planning commission to give residents a greater voice in zoning. It was this concern of the change in zoning that is now being considered that when the zoning was changed for the race track property in 2018, language was incorporated in that initiative that requires another vote of the residents to change the zoning of the race track property from the zoning approved by the residents. The city leaders should honor the voice of the residents from that 1990 vote or take it back to a vote to see if the residents want this type of residential development on this site.

The analysis has to take into consideration how the city plans to rezone the property to accommodate the residential component. Given the density calculation of 18.9 units per acre put forth by the city, then one can conclude that all 13.3 acres will be rezoned residential. If only the 4 acres is zoned residential then the 18.9 unit per acre density calculation doesn't work since the other 9 acres wouldn't permit residential so shouldn't be part of the calculation. If, on the other hand, the City Council rezones all 13 acres for residential, nothing would prevent the property owner five or so years from now to seek approval for another apartment building on the retail sites if those aren't successful. In fact, Shea was just approved in June 2019 to build 44 single-family homes and 61 townhouses on what is now Mission Foothill Marketplace in Mission Viejo, a mostly vacated mall.

<https://www.ocregister.com/2019/06/26/plan-to-convert-mission-foothill-marketplaces-main-building-into-105-homes-approved-by-mission-viejo-city-council/>

- **Population and Housing.** The current residential occupancy in our city averages 3 people per residence. If that average holds out, the population in our city would grow by 750 residents due to this project. Reality is that many recent studies have concluded that the higher rents being demanded in Orange County have led to substantial overcrowding in residential units. In fact, the standard is that two people can occupy each bedroom with one additional person in the living space. As such, if the average apartment in this complex has 2 bedrooms, then each apartment could legally accommodate 5 people which could bring the overall occupancy to 1,250 residents. These new occupancy studies showing the overcrowding issues ultimately falsify the results of a traffic study and lead a developer to substantially underpark a residential development. This doesn't happen on a retail development as there are only so many seats in a movie theater or restaurant. The residential component of this project dramatically changes the clear intent of this property when the voters approved a zoning change in 1990.

- **Public Services.** This development will significantly increase the demand for police, fire, schools, parks, and libraries especially given the residential component.

- **Recreation.** When Measure A was approved in 2018 to change the zoning for the race track, one of the significant benefits was that 20 acres of park land were going to be provided. No new park land will come from this project. While there will be park developer fees paid as part of the construction costs, this is one time money and no new park will be provided.

- **Transportation** – Since this project will sit on Katella, many think about the traffic impacts on Katella. The problem is to gain access or use any of the city services, the new residents will travel north along already impacted interior roads to gain access to schools, parks, and other public services. The Student

Yield Factor established by the State Allocation Board would increase in enrollment due to new housing construction. The states guideline says you can expect .5 elementary students per new residential unit and .2 junior high and high schools for a combination of .7 students per residential unit. As such, we could see an increase of about 175 students needing to go to school and be provided transportation to schools, sporting activities, parks, and public services. The fact that the elementary school district has indicated a willingness to open one of the closed schools, there will still be increased traffic. If overcrowding in these units takes place then the problem is worse.

This project will create many impacted intersections along Katella Ave but also along Walker and Lexington that will be affected by the Katella Ave traffic patterns this project will create. These intersections need to be studied.

A project alternative would be one with significantly lower density in the apartment complex as well as the overall height of the residential units being limited to two stories and eliminate the parking garage. Another alternative project would be one with no residential with the residential replaced with a family friendly entertainment center like a Dave & Buster's or the Splitsville Luxury Lanes in Downtown Disney.

Comments are due by December 23, 2019

---

Please drop off comments at the Planning Department or mail or email them to:

City of Cypress  
Attn: John P. Ramirez, AICP, City Planner  
5275 Orange Avenue  
Cypress, CA 90630  
Phone: 714-229-6720  
Email: [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)



## APPENDIX B

# AIR QUALITY, GREENHOUSE GASES, AND ENERGY ANALYSIS DATA



**This page intentionally left blank**

## Cypress Town Center - South Coast AQMD Air District, Winter

**Cypress Town Center**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	414.00	Space	1.50	165,600.00	0
Parking Lot	577.00	Space	6.91	230,800.00	0
Hotel	120.00	Room	0.90	174,240.00	0
Movie Theater (No Matinee)	10.00	Screen	0.99	27,500.00	0
Apartments Mid Rise	251.00	Dwelling Unit	2.50	251,000.00	718
Regional Shopping Center	20.80	1000sqft	0.48	20,800.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2022
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	502.65	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data



Cypress Town Center - South Coast AQMD Air District, Winter

Project Characteristics - CO2 Intensity Factor is based on 2020 forecast in City of Cypress General Plan, 33% RPS, Cap and Trade, and reduction in SF6.

Land Use - Parking structure designed for residential use only. Total Project site 13.28 acres.

Construction Phase - Complete project buildout scheduled at 20 months.

Off-road Equipment - Pile driving equipment will be used during the construction phase of the mid rise apartments and hotel.

Demolition - Estimated total of 8,600 tons of debris from demolishment will be removed from project site.

Grading - 10,000 cubic yards of material will be imported to the project site.

Vehicle Trips - Total daily trip generation is 4,978 vehicle trips.

Woodstoves - No woodstoves or fireplaces will be implimented in this project.

## Energy Use -

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

## Water Mitigation -

## Off-road Equipment -

[illegible]

## Cypress Town Center - South Coast AQMD Air District, Winter

tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	300.00	330.00
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	213.35	0.00
tblFireplaces	NumberNoFireplace	25.10	0.00
tblFireplaces	NumberWood	12.55	0.00
tblLandUse	LotAcreage	3.73	1.50
tblLandUse	LotAcreage	5.19	6.91
tblLandUse	LotAcreage	4.00	0.90
tblLandUse	LotAcreage	0.63	0.99
tblLandUse	LotAcreage	6.61	2.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblProjectCharacteristics	CO2IntensityFactor	702.44	502.65
tblVehicleTrips	ST_TR	6.39	5.06
tblVehicleTrips	ST_TR	8.19	7.78
tblVehicleTrips	ST_TR	376.00	204.60
tblVehicleTrips	ST_TR	49.97	35.10
tblVehicleTrips	SU_TR	5.86	5.06
tblVehicleTrips	SU_TR	5.95	7.78
tblVehicleTrips	SU_TR	314.00	204.60
tblVehicleTrips	SU_TR	25.24	35.10
tblVehicleTrips	WD_TR	6.65	5.06
tblVehicleTrips	WD_TR	8.17	7.78
tblVehicleTrips	WD_TR	220.00	204.60
tblVehicleTrips	WD_TR	42.70	35.10
tblWoodstoves	NumberCatalytic	12.55	0.00

## Cypress Town Center - South Coast AQMD Air District, Winter

tblWoodstoves	:	NumberNoncatalytic	:	12.55	:	0.00
---------------	---	--------------------	---	-------	---	------

**2.0 Emissions Summary**

---

## Cypress Town Center - South Coast AQMD Air District, Winter

**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.2151	50.2641	40.6504	0.1122	18.2675	2.1989	20.4664	9.9840	2.0230	12.0071	0.0000	11,255.57 49	11,255.57 49	1.9486	0.0000	11,285.22 58
2021	4.7157	35.2500	38.6896	0.1104	5.7262	1.2467	6.9729	1.5372	1.1673	2.7045	0.0000	11,078.157 5	11,078.157 5	1.1559	0.0000	11,107.054 6
2022	62.9821	32.1190	37.1227	0.1084	5.7262	1.0630	6.7892	1.5372	0.9956	2.5328	0.0000	10,885.77 31	10,885.77 31	1.1313	0.0000	10,914.05 64
Maximum	62.9821	50.2641	40.6504	0.1122	18.2675	2.1989	20.4664	9.9840	2.0230	12.0071	0.0000	11,255.57 49	11,255.57 49	1.9486	0.0000	11,285.22 58

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.2151	50.2641	40.6504	0.1122	7.2470	2.1989	9.4460	3.9263	2.0230	5.9494	0.0000	11,255.574 9	11,255.574 9	1.9486	0.0000	11,285.225 8
2021	4.7157	35.2500	38.6896	0.1104	5.7262	1.2467	6.9729	1.5372	1.1673	2.7045	0.0000	11,078.157 5	11,078.157 5	1.1559	0.0000	11,107.054 6
2022	62.9821	32.1190	37.1227	0.1084	5.7262	1.0630	6.7892	1.5372	0.9956	2.5328	0.0000	10,885.77 31	10,885.77 31	1.1313	0.0000	10,914.05 64
Maximum	62.9821	50.2641	40.6504	0.1122	7.2470	2.1989	9.4460	3.9263	2.0230	5.9494	0.0000	11,255.57 49	11,255.57 49	1.9486	0.0000	11,285.22 58

## Cypress Town Center - South Coast AQMD Air District, Winter

	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
Percent Reduction	0.00	0.00	0.00	0.00	37.08	0.00	32.20	46.39	0.00	35.13	0.00	0.00	0.00	0.00	0.00	0.00

## Cypress Town Center - South Coast AQMD Air District, Winter

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Energy	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
Mobile	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.47 50	31,824.47 50	1.6271		31,865.15 14
<b>Total</b>	<b>18.7463</b>	<b>41.0701</b>	<b>107.3760</b>	<b>0.3286</b>	<b>26.5418</b>	<b>0.5629</b>	<b>27.1046</b>	<b>7.1015</b>	<b>0.5458</b>	<b>7.6474</b>	<b>0.0000</b>	<b>34,908.70 37</b>	<b>34,908.70 37</b>	<b>1.7221</b>	<b>0.0559</b>	<b>34,968.40 09</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Energy	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
Mobile	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.47 50	31,824.47 50	1.6271		31,865.15 14
<b>Total</b>	<b>18.7463</b>	<b>41.0701</b>	<b>107.3760</b>	<b>0.3286</b>	<b>26.5418</b>	<b>0.5629</b>	<b>27.1046</b>	<b>7.1015</b>	<b>0.5458</b>	<b>7.6474</b>	<b>0.0000</b>	<b>34,908.70 37</b>	<b>34,908.70 37</b>	<b>1.7221</b>	<b>0.0559</b>	<b>34,968.40 09</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

---

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2020	10/28/2020	5	20	
2	Site Preparation	Site Preparation	10/29/2020	11/11/2020	5	10	
3	Grading	Grading	11/12/2020	12/23/2020	5	30	
4	Building Construction	Building Construction	12/24/2020	3/30/2022	5	330	
5	Paving	Paving	3/31/2022	5/11/2022	5	30	
6	Architectural Coating	Architectural Coating	5/12/2022	8/3/2022	5	60	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 8.41

Residential Indoor: 508,275; Residential Outdoor: 169,425; Non-Residential Indoor: 333,810; Non-Residential Outdoor: 111,270; Striped Parking Area: 23,784 (Architectural Coating – sqft)

#### OffRoad Equipment

## Cypress Town Center - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Other Construction Equipment	1	8.00	172	0.42

Trips and VMT



## Cypress Town Center - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	850.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	439.00	128.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	88.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2016	0.0000	9.2016	1.3932	0.0000	1.3932			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
<b>Total</b>	<b>3.3121</b>	<b>33.2010</b>	<b>21.7532</b>	<b>0.0388</b>	<b>9.2016</b>	<b>1.6587</b>	<b>10.8603</b>	<b>1.3932</b>	<b>1.5419</b>	<b>2.9351</b>		<b>3,747.7049</b>	<b>3,747.7049</b>	<b>1.0580</b>		<b>3,774.1536</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.2 Demolition - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3321	11.7145	2.4774	0.0324	0.7427	0.0379	0.7805	0.2035	0.0362	0.2397		3,497.3167	3,497.3167	0.2495		3,503.5534
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699
<b>Total</b>	<b>0.4061</b>	<b>11.7645</b>	<b>3.0295</b>	<b>0.0340</b>	<b>0.9103</b>	<b>0.0391</b>	<b>0.9495</b>	<b>0.2480</b>	<b>0.0374</b>	<b>0.2854</b>		<b>3,657.8714</b>	<b>3,657.8714</b>	<b>0.2541</b>		<b>3,664.2232</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5886	0.0000	3.5886	0.5434	0.0000	0.5434			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
<b>Total</b>	<b>3.3121</b>	<b>33.2010</b>	<b>21.7532</b>	<b>0.0388</b>	<b>3.5886</b>	<b>1.6587</b>	<b>5.2473</b>	<b>0.5434</b>	<b>1.5419</b>	<b>2.0852</b>	<b>0.0000</b>	<b>3,747.7049</b>	<b>3,747.7049</b>	<b>1.0580</b>		<b>3,774.1536</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.2 Demolition - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3321	11.7145	2.4774	0.0324	0.7427	0.0379	0.7805	0.2035	0.0362	0.2397		3,497.3167	3,497.3167	0.2495		3,503.5534
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699
<b>Total</b>	<b>0.4061</b>	<b>11.7645</b>	<b>3.0295</b>	<b>0.0340</b>	<b>0.9103</b>	<b>0.0391</b>	<b>0.9495</b>	<b>0.2480</b>	<b>0.0374</b>	<b>0.2854</b>		<b>3,657.8714</b>	<b>3,657.8714</b>	<b>0.2541</b>		<b>3,664.2232</b>

**3.3 Site Preparation - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
<b>Total</b>	<b>4.0765</b>	<b>42.4173</b>	<b>21.5136</b>	<b>0.0380</b>	<b>18.0663</b>	<b>2.1974</b>	<b>20.2637</b>	<b>9.9307</b>	<b>2.0216</b>	<b>11.9523</b>		<b>3,685.1016</b>	<b>3,685.1016</b>	<b>1.1918</b>		<b>3,714.8975</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
<b>Total</b>	<b>0.0888</b>	<b>0.0599</b>	<b>0.6626</b>	<b>1.9300e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>192.6657</b>	<b>192.6657</b>	<b>5.5300e-003</b>		<b>192.8038</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
<b>Total</b>	<b>4.0765</b>	<b>42.4173</b>	<b>21.5136</b>	<b>0.0380</b>	<b>7.0458</b>	<b>2.1974</b>	<b>9.2433</b>	<b>3.8730</b>	<b>2.0216</b>	<b>5.8946</b>	<b>0.0000</b>	<b>3,685.1016</b>	<b>3,685.1016</b>	<b>1.1918</b>		<b>3,714.8975</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.3 Site Preparation - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
<b>Total</b>	<b>0.0888</b>	<b>0.0599</b>	<b>0.6626</b>	<b>1.9300e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>192.6657</b>	<b>192.6657</b>	<b>5.5300e-003</b>		<b>192.8038</b>

**3.4 Grading - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
<b>Total</b>	<b>4.4501</b>	<b>50.1975</b>	<b>31.9583</b>	<b>0.0620</b>	<b>8.6733</b>	<b>2.1739</b>	<b>10.8472</b>	<b>3.5965</b>	<b>2.0000</b>	<b>5.5965</b>		<b>6,005.8653</b>	<b>6,005.8653</b>	<b>1.9424</b>		<b>6,054.4257</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.4 Grading - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0987	0.0666	0.7362	2.1500e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5600e-003	0.0609		214.0730	214.0730	6.1400e-003		214.2265
<b>Total</b>	<b>0.0987</b>	<b>0.0666</b>	<b>0.7362</b>	<b>2.1500e-003</b>	<b>0.2236</b>	<b>1.7000e-003</b>	<b>0.2253</b>	<b>0.0593</b>	<b>1.5600e-003</b>	<b>0.0609</b>		<b>214.0730</b>	<b>214.0730</b>	<b>6.1400e-003</b>		<b>214.2265</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
<b>Total</b>	<b>4.4501</b>	<b>50.1975</b>	<b>31.9583</b>	<b>0.0620</b>	<b>3.3826</b>	<b>2.1739</b>	<b>5.5565</b>	<b>1.4026</b>	<b>2.0000</b>	<b>3.4026</b>	<b>0.0000</b>	<b>6,005.8653</b>	<b>6,005.8653</b>	<b>1.9424</b>		<b>6,054.4257</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.4 Grading - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0987	0.0666	0.7362	2.1500e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5600e-003	0.0609		214.0730	214.0730	6.1400e-003		214.2265
<b>Total</b>	<b>0.0987</b>	<b>0.0666</b>	<b>0.7362</b>	<b>2.1500e-003</b>	<b>0.2236</b>	<b>1.7000e-003</b>	<b>0.2253</b>	<b>0.0593</b>	<b>1.5600e-003</b>	<b>0.0609</b>		<b>214.0730</b>	<b>214.0730</b>	<b>6.1400e-003</b>		<b>214.2265</b>

**3.5 Building Construction - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6085	24.3678	20.9254	0.0330		1.3905	1.3905		1.3019	1.3019		3,145.3088	3,145.3088	0.8144		3,165,6688
<b>Total</b>	<b>2.6085</b>	<b>24.3678</b>	<b>20.9254</b>	<b>0.0330</b>		<b>1.3905</b>	<b>1.3905</b>		<b>1.3019</b>	<b>1.3019</b>		<b>3,145.3088</b>	<b>3,145.3088</b>	<b>0.8144</b>		<b>3,165,6688</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4403	13.4178	3.5659	0.0320	0.8192	0.0675	0.8868	0.2359	0.0646	0.3005		3,411.3639	3,411.3639	0.2369		3,417.2859
Worker	2.1663	1.4619	16.1590	0.0472	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		4,698.9022	4,698.9022	0.1348		4,702.2711
<b>Total</b>	<b>2.6066</b>	<b>14.8797</b>	<b>19.7249</b>	<b>0.0792</b>	<b>5.7262</b>	<b>0.1048</b>	<b>5.8310</b>	<b>1.5372</b>	<b>0.0989</b>	<b>1.6361</b>		<b>8,110.2661</b>	<b>8,110.2661</b>	<b>0.3716</b>		<b>8,119.5570</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6085	24.3678	20.9254	0.0330		1.3905	1.3905		1.3019	1.3019	0.0000	3,145.3088	3,145.3088	0.8144		3,165.6688
<b>Total</b>	<b>2.6085</b>	<b>24.3678</b>	<b>20.9254</b>	<b>0.0330</b>		<b>1.3905</b>	<b>1.3905</b>		<b>1.3019</b>	<b>1.3019</b>	<b>0.0000</b>	<b>3,145.3088</b>	<b>3,145.3088</b>	<b>0.8144</b>		<b>3,165.6688</b>



## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4403	13.4178	3.5659	0.0320	0.8192	0.0675	0.8868	0.2359	0.0646	0.3005		3,411.3639	3,411.3639	0.2369		3,417.2859
Worker	2.1663	1.4619	16.1590	0.0472	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		4,698.9022	4,698.9022	0.1348		4,702.2711
<b>Total</b>	<b>2.6066</b>	<b>14.8797</b>	<b>19.7249</b>	<b>0.0792</b>	<b>5.7262</b>	<b>0.1048</b>	<b>5.8310</b>	<b>1.5372</b>	<b>0.0989</b>	<b>1.6361</b>		<b>8,110.2661</b>	<b>8,110.2661</b>	<b>0.3716</b>		<b>8,119.5570</b>

**3.5 Building Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3162	21.7651	20.5859	0.0330		1.1852	1.1852		1.1097	1.1097		3,145.3331	3,145.3331	0.8075		3,165.5198
<b>Total</b>	<b>2.3162</b>	<b>21.7651</b>	<b>20.5859</b>	<b>0.0330</b>		<b>1.1852</b>	<b>1.1852</b>		<b>1.1097</b>	<b>1.1097</b>		<b>3,145.3331</b>	<b>3,145.3331</b>	<b>0.8075</b>		<b>3,165.5198</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2021****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3749	12.1694	3.2418	0.0317	0.8192	0.0254	0.8446	0.2358	0.0243	0.2601		3,386.2425	3,386.2425	0.2266		3,391.9066
Worker	2.0246	1.3156	14.8619	0.0456	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,546.5820	4,546.5820	0.1219		4,549.6282
<b>Total</b>	<b>2.3995</b>	<b>13.4850</b>	<b>18.1037</b>	<b>0.0774</b>	<b>5.7262</b>	<b>0.0615</b>	<b>5.7877</b>	<b>1.5372</b>	<b>0.0575</b>	<b>1.5947</b>		<b>7,932.8244</b>	<b>7,932.8244</b>	<b>0.3484</b>		<b>7,941.5348</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3162	21.7651	20.5859	0.0330		1.1852	1.1852		1.1097	1.1097	0.0000	3,145.3331	3,145.3331	0.8075		3,165.5198
<b>Total</b>	<b>2.3162</b>	<b>21.7651</b>	<b>20.5859</b>	<b>0.0330</b>		<b>1.1852</b>	<b>1.1852</b>		<b>1.1097</b>	<b>1.1097</b>	<b>0.0000</b>	<b>3,145.3331</b>	<b>3,145.3331</b>	<b>0.8075</b>		<b>3,165.5198</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2021****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3749	12.1694	3.2418	0.0317	0.8192	0.0254	0.8446	0.2358	0.0243	0.2601		3,386.2425	3,386.2425	0.2266		3,391.9066
Worker	2.0246	1.3156	14.8619	0.0456	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,546.5820	4,546.5820	0.1219		4,549.6282
<b>Total</b>	<b>2.3995</b>	<b>13.4850</b>	<b>18.1037</b>	<b>0.0774</b>	<b>5.7262</b>	<b>0.0615</b>	<b>5.7877</b>	<b>1.5372</b>	<b>0.0575</b>	<b>1.5947</b>		<b>7,932.8244</b>	<b>7,932.8244</b>	<b>0.3484</b>		<b>7,941.5348</b>

**3.5 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0781	19.3890	20.3396	0.0330		1.0059	1.0059		0.9423	0.9423		3,146.1117	3,146.1117	0.8033		3,166.1951
<b>Total</b>	<b>2.0781</b>	<b>19.3890</b>	<b>20.3396</b>	<b>0.0330</b>		<b>1.0059</b>	<b>1.0059</b>		<b>0.9423</b>	<b>0.9423</b>		<b>3,146.1117</b>	<b>3,146.1117</b>	<b>0.8033</b>		<b>3,166.1951</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3517	11.5420	3.0655	0.0314	0.8192	0.0220	0.8412	0.2358	0.0210	0.2569		3,356.086 1	3,356.086 1	0.2180		3,361.535 0
Worker	1.9041	1.1881	13.7176	0.0440	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,383.575 3	4,383.575 3	0.1100		4,386.326 2
<b>Total</b>	<b>2.2558</b>	<b>12.7301</b>	<b>16.7831</b>	<b>0.0754</b>	<b>5.7262</b>	<b>0.0571</b>	<b>5.7833</b>	<b>1.5372</b>	<b>0.0534</b>	<b>1.5906</b>		<b>7,739.661 4</b>	<b>7,739.661 4</b>	<b>0.3280</b>		<b>7,747.861 3</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0781	19.3890	20.3396	0.0330		1.0059	1.0059		0.9423	0.9423	0.0000	3,146.1117	3,146.1117	0.8033		3,166.195 1
<b>Total</b>	<b>2.0781</b>	<b>19.3890</b>	<b>20.3396</b>	<b>0.0330</b>		<b>1.0059</b>	<b>1.0059</b>		<b>0.9423</b>	<b>0.9423</b>	<b>0.0000</b>	<b>3,146.111 7</b>	<b>3,146.111 7</b>	<b>0.8033</b>		<b>3,166.195 1</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.5 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3517	11.5420	3.0655	0.0314	0.8192	0.0220	0.8412	0.2358	0.0210	0.2569		3,356.086 1	3,356.086 1	0.2180		3,361.535 0
Worker	1.9041	1.1881	13.7176	0.0440	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,383.575 3	4,383.575 3	0.1100		4,386.326 2
<b>Total</b>	<b>2.2558</b>	<b>12.7301</b>	<b>16.7831</b>	<b>0.0754</b>	<b>5.7262</b>	<b>0.0571</b>	<b>5.7833</b>	<b>1.5372</b>	<b>0.0534</b>	<b>1.5906</b>		<b>7,739.661 4</b>	<b>7,739.661 4</b>	<b>0.3280</b>		<b>7,747.861 3</b>

**3.6 Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.6035					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7063</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>		<b>2,207.660 3</b>	<b>2,207.660 3</b>	<b>0.7140</b>		<b>2,225.510 4</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.6 Paving - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745
<b>Total</b>	<b>0.0651</b>	<b>0.0406</b>	<b>0.4687</b>	<b>1.5000e-003</b>	<b>0.1677</b>	<b>1.2000e-003</b>	<b>0.1689</b>	<b>0.0445</b>	<b>1.1000e-003</b>	<b>0.0456</b>		<b>149.7805</b>	<b>149.7805</b>	<b>3.7600e-003</b>		<b>149.8745</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6035					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7063</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>	<b>0.0000</b>	<b>2,207.6603</b>	<b>2,207.6603</b>	<b>0.7140</b>		<b>2,225.5104</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.6 Paving - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745
<b>Total</b>	<b>0.0651</b>	<b>0.0406</b>	<b>0.4687</b>	<b>1.5000e-003</b>	<b>0.1677</b>	<b>1.2000e-003</b>	<b>0.1689</b>	<b>0.0445</b>	<b>1.1000e-003</b>	<b>0.0456</b>		<b>149.7805</b>	<b>149.7805</b>	<b>3.7600e-003</b>		<b>149.8745</b>

**3.7 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.3959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>62.6005</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**3.7 Architectural Coating - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3817	0.2382	2.7498	8.8200e-003	0.9836	7.0300e-003	0.9907	0.2609	6.4800e-003	0.2673		878.7121	878.7121	0.0221		879.2636
<b>Total</b>	<b>0.3817</b>	<b>0.2382</b>	<b>2.7498</b>	<b>8.8200e-003</b>	<b>0.9836</b>	<b>7.0300e-003</b>	<b>0.9907</b>	<b>0.2609</b>	<b>6.4800e-003</b>	<b>0.2673</b>		<b>878.7121</b>	<b>878.7121</b>	<b>0.0221</b>		<b>879.2636</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.3959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>62.6005</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>



## Cypress Town Center - South Coast AQMD Air District, Winter

**3.7 Architectural Coating - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3817	0.2382	2.7498	8.8200e-003	0.9836	7.0300e-003	0.9907	0.2609	6.4800e-003	0.2673		878.7121	878.7121	0.0221		879.2636
<b>Total</b>	<b>0.3817</b>	<b>0.2382</b>	<b>2.7498</b>	<b>8.8200e-003</b>	<b>0.9836</b>	<b>7.0300e-003</b>	<b>0.9907</b>	<b>0.2609</b>	<b>6.4800e-003</b>	<b>0.2673</b>		<b>878.7121</b>	<b>878.7121</b>	<b>0.0221</b>		<b>879.2636</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## Cypress Town Center - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.47 50	31,824.47 50	1.6271		31,865.15 14
Unmitigated	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.47 50	31,824.47 50	1.6271		31,865.15 14

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,270.06	1,270.06	1270.06	4,339,988	4,339,988
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	933.60	933.60	933.60	2,227,729	2,227,729
Movie Theater (No Matinee)	2,046.00	2,046.00	2046.00	4,335,510	4,335,510
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	730.08	730.08	730.08	1,579,049	1,579,049
Total	4,979.74	4,979.74	4,979.74	12,482,276	12,482,276

## 4.3 Trip Type Information

## Cypress Town Center - South Coast AQMD Air District, Winter

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	16.60	8.40	6.90	1.80	79.20	19.00	66	17	17
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Enclosed Parking with Elevator	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Hotel	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Movie Theater (No Matinee)	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Regional Shopping Center	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

## Cypress Town Center - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
NaturalGas Unmitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1

## Cypress Town Center - South Coast AQMD Air District, Winter

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7858.34	0.0848	0.7242	0.3082	4.6200e-003		0.0586	0.0586		0.0586	0.0586		924.5101	924.5101	0.0177	0.0170	930.0040
Enclosed Parking with Elevator	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
Hotel	16349.9	0.1763	1.6029	1.3465	9.6200e-003		0.1218	0.1218		0.1218	0.1218		1,923.5197	1,923.5197	0.0369	0.0353	1,934.9503
Movie Theater (No Matinee)	1574.66	0.0170	0.1544	0.1297	9.3000e-004		0.0117	0.0117		0.0117	0.0117		185.2538	185.2538	3.5500e-003	3.4000e-003	186.3547
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
Regional Shopping Center	113.973	1.2300e-003	0.0112	9.3900e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4085	13.4085	2.6000e-004	2.5000e-004	13.4882
<b>Total</b>		<b>0.2793</b>	<b>2.4927</b>	<b>1.7937</b>	<b>0.0152</b>		<b>0.1930</b>	<b>0.1930</b>		<b>0.1930</b>	<b>0.1930</b>		<b>3,046.6922</b>	<b>3,046.6922</b>	<b>0.0584</b>	<b>0.0559</b>	<b>3,064.7971</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7.85834	0.0848	0.7242	0.3082	4.6200e-003		0.0586	0.0586		0.0586	0.0586		924.5101	924.5101	0.0177	0.0170	930.0040
Enclosed Parking with Elevator	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
Hotel	16.3499	0.1763	1.6029	1.3465	9.6200e-003		0.1218	0.1218		0.1218	0.1218		1,923.5197	1,923.5197	0.0369	0.0353	1,934.9503
Movie Theater (No Matinee)	1.57466	0.0170	0.1544	0.1297	9.3000e-004		0.0117	0.0117		0.0117	0.0117		185.2538	185.2538	3.5500e-003	3.4000e-003	186.3547
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
Regional Shopping Center	0.113973	1.2300e-003	0.0112	9.3900e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4085	13.4085	2.6000e-004	2.5000e-004	13.4882
<b>Total</b>		<b>0.2793</b>	<b>2.4927</b>	<b>1.7937</b>	<b>0.0152</b>		<b>0.1930</b>	<b>0.1930</b>		<b>0.1930</b>	<b>0.1930</b>		<b>3,046.6922</b>	<b>3,046.6922</b>	<b>0.0584</b>	<b>0.0559</b>	<b>3,064.7971</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

## Cypress Town Center - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Unmitigated	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0257					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6370	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150		37.5365	37.5365	0.0366		38.4523
<b>Total</b>	<b>11.1792</b>	<b>0.2401</b>	<b>20.8469</b>	<b>1.1000e-003</b>		<b>0.1150</b>	<b>0.1150</b>		<b>0.1150</b>	<b>0.1150</b>	<b>0.0000</b>	<b>37.5365</b>	<b>37.5365</b>	<b>0.0366</b>	<b>0.0000</b>	<b>38.4523</b>

## Cypress Town Center - South Coast AQMD Air District, Winter

**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	lb/day										lb/day					
Architectural Coating	1.0257					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6370	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150		37.5365	37.5365	0.0366		38.4523
<b>Total</b>	<b>11.1792</b>	<b>0.2401</b>	<b>20.8469</b>	<b>1.1000e-003</b>		<b>0.1150</b>	<b>0.1150</b>		<b>0.1150</b>	<b>0.1150</b>	<b>0.0000</b>	<b>37.5365</b>	<b>37.5365</b>	<b>0.0366</b>	<b>0.0000</b>	<b>38.4523</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

**8.0 Waste Detail****8.1 Mitigation Measures Waste**



## Cypress Town Center - South Coast AQMD Air District, Winter

**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**

---

## Cypress Town Center - South Coast AQMD Air District, Summer

**Cypress Town Center**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

---

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	414.00	Space	1.50	165,600.00	0
Parking Lot	577.00	Space	6.91	230,800.00	0
Hotel	120.00	Room	0.90	174,240.00	0
Movie Theater (No Matinee)	10.00	Screen	0.99	27,500.00	0
Apartments Mid Rise	251.00	Dwelling Unit	2.50	251,000.00	718
Regional Shopping Center	20.80	1000sqft	0.48	20,800.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2022
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	502.65	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Cypress Town Center - South Coast AQMD Air District, Summer

Project Characteristics - CO2 Intensity Factor is based on 2020 forecast in City of Cypress General Plan, 33% RPS, Cap and Trade, and reduction in SF6.

Land Use - Parking structure designed for residential use only. Total Project site 13.28 acres.

Construction Phase - Complete project buildout scheduled at 20 months.

Off-road Equipment - Pile driving equipment will be used during the construction phase of the mid rise apartments and hotel.

Demolition - Estimated total of 8,600 tons of debris from demolishment will be removed from project site.

Grading - 10,000 cubic yards of material will be imported to the project site.

Vehicle Trips - Total daily trip generation is 4,978 vehicle trips.

Woodstoves - No woodstoves or fireplaces will be implimented in this project.

### Energy Use -

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

## Water Mitigation -

## Off-road Equipment -

[illegible]

## Cypress Town Center - South Coast AQMD Air District, Summer

tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	300.00	330.00
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	213.35	0.00
tblFireplaces	NumberNoFireplace	25.10	0.00
tblFireplaces	NumberWood	12.55	0.00
tblLandUse	LotAcreage	3.73	1.50
tblLandUse	LotAcreage	5.19	6.91
tblLandUse	LotAcreage	4.00	0.90
tblLandUse	LotAcreage	0.63	0.99
tblLandUse	LotAcreage	6.61	2.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblProjectCharacteristics	CO2IntensityFactor	702.44	502.65
tblVehicleTrips	ST_TR	6.39	5.06
tblVehicleTrips	ST_TR	8.19	7.78
tblVehicleTrips	ST_TR	376.00	204.60
tblVehicleTrips	ST_TR	49.97	35.10
tblVehicleTrips	SU_TR	5.86	5.06
tblVehicleTrips	SU_TR	5.95	7.78
tblVehicleTrips	SU_TR	314.00	204.60
tblVehicleTrips	SU_TR	25.24	35.10
tblVehicleTrips	WD_TR	6.65	5.06
tblVehicleTrips	WD_TR	8.17	7.78
tblVehicleTrips	WD_TR	220.00	204.60
tblVehicleTrips	WD_TR	42.70	35.10
tblWoodstoves	NumberCatalytic	12.55	0.00

## Cypress Town Center - South Coast AQMD Air District, Summer

tblWoodstoves	:	NumberNoncatalytic	:	12.55	:	0.00
---------------	---	--------------------	---	-------	---	------

**2.0 Emissions Summary**

---

## Cypress Town Center - South Coast AQMD Air District, Summer

**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0150	50.2583	42.0709	0.1164	18.2675	2.1989	20.4664	9.9840	2.0230	12.0071	0.0000	11,682.2417	11,682.2417	1.9490	0.0000	11,711.7268
2021	4.5255	35.1750	40.0211	0.1145	5.7262	1.2459	6.9721	1.5372	1.1665	2.7037	0.0000	11,494.0460	11,494.0460	1.1492	0.0000	11,522.7747
2022	62.9489	32.0629	38.3702	0.1124	5.7262	1.0623	6.7885	1.5372	0.9950	2.5322	0.0000	11,290.1765	11,290.1765	1.1246	0.0000	11,318.2907
Maximum	62.9489	50.2583	42.0709	0.1164	18.2675	2.1989	20.4664	9.9840	2.0230	12.0071	0.0000	11,682.2417	11,682.2417	1.9490	0.0000	11,711.7268

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0150	50.2583	42.0709	0.1164	7.2470	2.1989	9.4460	3.9263	2.0230	5.9494	0.0000	11,682.2417	11,682.2417	1.9490	0.0000	11,711.7268
2021	4.5255	35.1750	40.0211	0.1145	5.7262	1.2459	6.9721	1.5372	1.1665	2.7037	0.0000	11,494.0460	11,494.0460	1.1492	0.0000	11,522.7747
2022	62.9489	32.0629	38.3702	0.1124	5.7262	1.0623	6.7885	1.5372	0.9950	2.5322	0.0000	11,290.1765	11,290.1765	1.1246	0.0000	11,318.2907
Maximum	62.9489	50.2583	42.0709	0.1164	7.2470	2.1989	9.4460	3.9263	2.0230	5.9494	0.0000	11,682.2417	11,682.2417	1.9490	0.0000	11,711.7268

## Cypress Town Center - South Coast AQMD Air District, Summer

	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
Percent Reduction	0.00	0.00	0.00	0.00	37.08	0.00	32.20	46.39	0.00	35.13	0.00	0.00	0.00	0.00	0.00	0.00

## Cypress Town Center - South Coast AQMD Air District, Summer

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Energy	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
Mobile	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.33 27	33,632.33 27	1.6149		33,672.70 41
<b>Total</b>	<b>19.1490</b>	<b>40.5677</b>	<b>112.1227</b>	<b>0.3465</b>	<b>26.5418</b>	<b>0.5610</b>	<b>27.1028</b>	<b>7.1015</b>	<b>0.5440</b>	<b>7.6456</b>	<b>0.0000</b>	<b>36,716.56 14</b>	<b>36,716.56 14</b>	<b>1.7099</b>	<b>0.0559</b>	<b>36,775.95 35</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Energy	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
Mobile	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.33 27	33,632.33 27	1.6149		33,672.70 41
<b>Total</b>	<b>19.1490</b>	<b>40.5677</b>	<b>112.1227</b>	<b>0.3465</b>	<b>26.5418</b>	<b>0.5610</b>	<b>27.1028</b>	<b>7.1015</b>	<b>0.5440</b>	<b>7.6456</b>	<b>0.0000</b>	<b>36,716.56 14</b>	<b>36,716.56 14</b>	<b>1.7099</b>	<b>0.0559</b>	<b>36,775.95 35</b>



## Cypress Town Center - South Coast AQMD Air District, Summer

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2020	10/28/2020	5	20	
2	Site Preparation	Site Preparation	10/29/2020	11/11/2020	5	10	
3	Grading	Grading	11/12/2020	12/23/2020	5	30	
4	Building Construction	Building Construction	12/24/2020	3/30/2022	5	330	
5	Paving	Paving	3/31/2022	5/11/2022	5	30	
6	Architectural Coating	Architectural Coating	5/12/2022	8/3/2022	5	60	

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 75****Acres of Paving: 8.41****Residential Indoor: 508,275; Residential Outdoor: 169,425; Non-Residential Indoor: 333,810; Non-Residential Outdoor: 111,270; Striped Parking Area: 23,784 (Architectural Coating – sqft)****OffRoad Equipment**

## Cypress Town Center - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Other Construction Equipment	1	8.00	172	0.42

Trips and VMT

## Cypress Town Center - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	850.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	439.00	128.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	88.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2016	0.0000	9.2016	1.3932	0.0000	1.3932			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
<b>Total</b>	<b>3.3121</b>	<b>33.2010</b>	<b>21.7532</b>	<b>0.0388</b>	<b>9.2016</b>	<b>1.6587</b>	<b>10.8603</b>	<b>1.3932</b>	<b>1.5419</b>	<b>2.9351</b>		<b>3,747.7049</b>	<b>3,747.7049</b>	<b>1.0580</b>		<b>3,774.1536</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.2 Demolition - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3228	11.5660	2.3014	0.0330	0.7427	0.0373	0.7799	0.2035	0.0357	0.2392		3,562.899 1	3,562.899 1	0.2391		3,568.876 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
<b>Total</b>	<b>0.3907</b>	<b>11.6117</b>	<b>2.9146</b>	<b>0.0347</b>	<b>0.9103</b>	<b>0.0386</b>	<b>0.9489</b>	<b>0.2480</b>	<b>0.0368</b>	<b>0.2848</b>		<b>3,734.561 8</b>	<b>3,734.561 8</b>	<b>0.2440</b>		<b>3,740.662 3</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5886	0.0000	3.5886	0.5434	0.0000	0.5434			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.704 9	3,747.704 9	1.0580		3,774.153 6
<b>Total</b>	<b>3.3121</b>	<b>33.2010</b>	<b>21.7532</b>	<b>0.0388</b>	<b>3.5886</b>	<b>1.6587</b>	<b>5.2473</b>	<b>0.5434</b>	<b>1.5419</b>	<b>2.0852</b>	<b>0.0000</b>	<b>3,747.704 9</b>	<b>3,747.704 9</b>	<b>1.0580</b>		<b>3,774.153 6</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.2 Demolition - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3228	11.5660	2.3014	0.0330	0.7427	0.0373	0.7799	0.2035	0.0357	0.2392		3,562.899 1	3,562.899 1	0.2391		3,568.876 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
<b>Total</b>	<b>0.3907</b>	<b>11.6117</b>	<b>2.9146</b>	<b>0.0347</b>	<b>0.9103</b>	<b>0.0386</b>	<b>0.9489</b>	<b>0.2480</b>	<b>0.0368</b>	<b>0.2848</b>		<b>3,734.561 8</b>	<b>3,734.561 8</b>	<b>0.2440</b>		<b>3,740.662 3</b>

**3.3 Site Preparation - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.101 6	3,685.101 6	1.1918		3,714.897 5
<b>Total</b>	<b>4.0765</b>	<b>42.4173</b>	<b>21.5136</b>	<b>0.0380</b>	<b>18.0663</b>	<b>2.1974</b>	<b>20.2637</b>	<b>9.9307</b>	<b>2.0216</b>	<b>11.9523</b>		<b>3,685.101 6</b>	<b>3,685.101 6</b>	<b>1.1918</b>		<b>3,714.897 5</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
<b>Total</b>	<b>0.0814</b>	<b>0.0547</b>	<b>0.7359</b>	<b>2.0700e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>205.9951</b>	<b>205.9951</b>	<b>5.9200e-003</b>		<b>206.1432</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
<b>Total</b>	<b>4.0765</b>	<b>42.4173</b>	<b>21.5136</b>	<b>0.0380</b>	<b>7.0458</b>	<b>2.1974</b>	<b>9.2433</b>	<b>3.8730</b>	<b>2.0216</b>	<b>5.8946</b>	<b>0.0000</b>	<b>3,685.1016</b>	<b>3,685.1016</b>	<b>1.1918</b>		<b>3,714.8975</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.3 Site Preparation - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
<b>Total</b>	<b>0.0814</b>	<b>0.0547</b>	<b>0.7359</b>	<b>2.0700e-003</b>	<b>0.2012</b>	<b>1.5300e-003</b>	<b>0.2027</b>	<b>0.0534</b>	<b>1.4100e-003</b>	<b>0.0548</b>		<b>205.9951</b>	<b>205.9951</b>	<b>5.9200e-003</b>		<b>206.1432</b>

**3.4 Grading - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
<b>Total</b>	<b>4.4501</b>	<b>50.1975</b>	<b>31.9583</b>	<b>0.0620</b>	<b>8.6733</b>	<b>2.1739</b>	<b>10.8472</b>	<b>3.5965</b>	<b>2.0000</b>	<b>5.5965</b>		<b>6,005.8653</b>	<b>6,005.8653</b>	<b>1.9424</b>		<b>6,054.4257</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.4 Grading - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0905	0.0608	0.8176	2.3000e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5600e-003	0.0609		228.8835	228.8835	6.5800e-003		229.0480
<b>Total</b>	<b>0.0905</b>	<b>0.0608</b>	<b>0.8176</b>	<b>2.3000e-003</b>	<b>0.2236</b>	<b>1.7000e-003</b>	<b>0.2253</b>	<b>0.0593</b>	<b>1.5600e-003</b>	<b>0.0609</b>		<b>228.8835</b>	<b>228.8835</b>	<b>6.5800e-003</b>		<b>229.0480</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
<b>Total</b>	<b>4.4501</b>	<b>50.1975</b>	<b>31.9583</b>	<b>0.0620</b>	<b>3.3826</b>	<b>2.1739</b>	<b>5.5565</b>	<b>1.4026</b>	<b>2.0000</b>	<b>3.4026</b>	<b>0.0000</b>	<b>6,005.8653</b>	<b>6,005.8653</b>	<b>1.9424</b>		<b>6,054.4257</b>



## Cypress Town Center - South Coast AQMD Air District, Summer

**3.4 Grading - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0905	0.0608	0.8176	2.3000e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5600e-003	0.0609		228.8835	228.8835	6.5800e-003		229.0480
<b>Total</b>	<b>0.0905</b>	<b>0.0608</b>	<b>0.8176</b>	<b>2.3000e-003</b>	<b>0.2236</b>	<b>1.7000e-003</b>	<b>0.2253</b>	<b>0.0593</b>	<b>1.5600e-003</b>	<b>0.0609</b>		<b>228.8835</b>	<b>228.8835</b>	<b>6.5800e-003</b>		<b>229.0480</b>

**3.5 Building Construction - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6085	24.3678	20.9254	0.0330		1.3905	1.3905		1.3019	1.3019		3,145.3088	3,145.3088	0.8144		3,165.6688
<b>Total</b>	<b>2.6085</b>	<b>24.3678</b>	<b>20.9254</b>	<b>0.0330</b>		<b>1.3905</b>	<b>1.3905</b>		<b>1.3019</b>	<b>1.3019</b>		<b>3,145.3088</b>	<b>3,145.3088</b>	<b>0.8144</b>		<b>3,165.6688</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4204	13.4317	3.1984	0.0329	0.8192	0.0665	0.8858	0.2359	0.0637	0.2995		3,512.940 2	3,512.940 2	0.2206		3,518.454 2
Worker	1.9862	1.3351	17.9471	0.0504	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		5,023.992 6	5,023.992 6	0.1444		5,027.603 7
<b>Total</b>	<b>2.4066</b>	<b>14.7668</b>	<b>21.1455</b>	<b>0.0834</b>	<b>5.7262</b>	<b>0.1038</b>	<b>5.8300</b>	<b>1.5372</b>	<b>0.0980</b>	<b>1.6351</b>		<b>8,536.932 9</b>	<b>8,536.932 9</b>	<b>0.3650</b>		<b>8,546.057 9</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6085	24.3678	20.9254	0.0330		1.3905	1.3905		1.3019	1.3019	0.0000	3,145.308 8	3,145.308 8	0.8144		3,165.668 8
<b>Total</b>	<b>2.6085</b>	<b>24.3678</b>	<b>20.9254</b>	<b>0.0330</b>		<b>1.3905</b>	<b>1.3905</b>		<b>1.3019</b>	<b>1.3019</b>	<b>0.0000</b>	<b>3,145.308 8</b>	<b>3,145.308 8</b>	<b>0.8144</b>		<b>3,165.668 8</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4204	13.4317	3.1984	0.0329	0.8192	0.0665	0.8858	0.2359	0.0637	0.2995		3,512.940 2	3,512.940 2	0.2206		3,518.454 2
Worker	1.9862	1.3351	17.9471	0.0504	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		5,023.992 6	5,023.992 6	0.1444		5,027.603 7
<b>Total</b>	<b>2.4066</b>	<b>14.7668</b>	<b>21.1455</b>	<b>0.0834</b>	<b>5.7262</b>	<b>0.1038</b>	<b>5.8300</b>	<b>1.5372</b>	<b>0.0980</b>	<b>1.6351</b>		<b>8,536.932 9</b>	<b>8,536.932 9</b>	<b>0.3650</b>		<b>8,546.057 9</b>

**3.5 Building Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3162	21.7651	20.5859	0.0330		1.1852	1.1852		1.1097	1.1097		3,145.333 1	3,145.333 1	0.8075		3,165.519 8
<b>Total</b>	<b>2.3162</b>	<b>21.7651</b>	<b>20.5859</b>	<b>0.0330</b>		<b>1.1852</b>	<b>1.1852</b>		<b>1.1097</b>	<b>1.1097</b>		<b>3,145.333 1</b>	<b>3,145.333 1</b>	<b>0.8075</b>		<b>3,165.519 8</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2021****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3562	12.2081	2.8970	0.0327	0.8192	0.0246	0.8438	0.2358	0.0235	0.2594		3,487.212 4	3,487.212 4	0.2110		3,492.486 0
Worker	1.8531	1.2018	16.5382	0.0488	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,861.500 6	4,861.500 6	0.1307		4,864.768 9
<b>Total</b>	<b>2.2093</b>	<b>13.4099</b>	<b>19.4352</b>	<b>0.0815</b>	<b>5.7262</b>	<b>0.0607</b>	<b>5.7869</b>	<b>1.5372</b>	<b>0.0568</b>	<b>1.5940</b>		<b>8,348.712 9</b>	<b>8,348.712 9</b>	<b>0.3417</b>		<b>8,357.254 9</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3162	21.7651	20.5859	0.0330		1.1852	1.1852		1.1097	1.1097	0.0000	3,145.333 1	3,145.333 1	0.8075		3,165.519 8
<b>Total</b>	<b>2.3162</b>	<b>21.7651</b>	<b>20.5859</b>	<b>0.0330</b>		<b>1.1852</b>	<b>1.1852</b>		<b>1.1097</b>	<b>1.1097</b>	<b>0.0000</b>	<b>3,145.333 1</b>	<b>3,145.333 1</b>	<b>0.8075</b>		<b>3,165.519 8</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2021****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3562	12.2081	2.8970	0.0327	0.8192	0.0246	0.8438	0.2358	0.0235	0.2594		3,487.212 4	3,487.212 4	0.2110		3,492.486 0
Worker	1.8531	1.2018	16.5382	0.0488	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,861.500 6	4,861.500 6	0.1307		4,864.768 9
<b>Total</b>	<b>2.2093</b>	<b>13.4099</b>	<b>19.4352</b>	<b>0.0815</b>	<b>5.7262</b>	<b>0.0607</b>	<b>5.7869</b>	<b>1.5372</b>	<b>0.0568</b>	<b>1.5940</b>		<b>8,348.712 9</b>	<b>8,348.712 9</b>	<b>0.3417</b>		<b>8,357.254 9</b>

**3.5 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0781	19.3890	20.3396	0.0330		1.0059	1.0059		0.9423	0.9423		3,146.1117	3,146.111 7	0.8033		3,166.195 1
<b>Total</b>	<b>2.0781</b>	<b>19.3890</b>	<b>20.3396</b>	<b>0.0330</b>		<b>1.0059</b>	<b>1.0059</b>		<b>0.9423</b>	<b>0.9423</b>		<b>3,146.111 7</b>	<b>3,146.111 7</b>	<b>0.8033</b>		<b>3,166.195 1</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3340	11.5882	2.7379	0.0324	0.8192	0.0213	0.8405	0.2358	0.0204	0.2562		3,456.7568	3,456.7568	0.2031		3,461.8337
Worker	1.7382	1.0856	15.2927	0.0470	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,687.3081	4,687.3081	0.1182		4,690.2619
<b>Total</b>	<b>2.0722</b>	<b>12.6739</b>	<b>18.0306</b>	<b>0.0794</b>	<b>5.7262</b>	<b>0.0564</b>	<b>5.7826</b>	<b>1.5372</b>	<b>0.0527</b>	<b>1.5899</b>		<b>8,144.0649</b>	<b>8,144.0649</b>	<b>0.3212</b>		<b>8,152.0956</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0781	19.3890	20.3396	0.0330		1.0059	1.0059		0.9423	0.9423	0.0000	3,146.1117	3,146.1117	0.8033		3,166.1951
<b>Total</b>	<b>2.0781</b>	<b>19.3890</b>	<b>20.3396</b>	<b>0.0330</b>		<b>1.0059</b>	<b>1.0059</b>		<b>0.9423</b>	<b>0.9423</b>	<b>0.0000</b>	<b>3,146.1117</b>	<b>3,146.1117</b>	<b>0.8033</b>		<b>3,166.1951</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.5 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3340	11.5882	2.7379	0.0324	0.8192	0.0213	0.8405	0.2358	0.0204	0.2562		3,456.7568	3,456.7568	0.2031		3,461.8337
Worker	1.7382	1.0856	15.2927	0.0470	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,687.3081	4,687.3081	0.1182		4,690.2619
<b>Total</b>	<b>2.0722</b>	<b>12.6739</b>	<b>18.0306</b>	<b>0.0794</b>	<b>5.7262</b>	<b>0.0564</b>	<b>5.7826</b>	<b>1.5372</b>	<b>0.0527</b>	<b>1.5899</b>		<b>8,144.0649</b>	<b>8,144.0649</b>	<b>0.3212</b>		<b>8,152.0956</b>

**3.6 Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6035					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7063</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>		<b>2,207.6603</b>	<b>2,207.6603</b>	<b>0.7140</b>		<b>2,225.5104</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.6 Paving - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595
<b>Total</b>	<b>0.0594</b>	<b>0.0371</b>	<b>0.5225</b>	<b>1.6100e-003</b>	<b>0.1677</b>	<b>1.2000e-003</b>	<b>0.1689</b>	<b>0.0445</b>	<b>1.1000e-003</b>	<b>0.0456</b>		<b>160.1586</b>	<b>160.1586</b>	<b>4.0400e-003</b>		<b>160.2595</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6035					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7063</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>	<b>0.0000</b>	<b>2,207.6603</b>	<b>2,207.6603</b>	<b>0.7140</b>		<b>2,225.5104</b>



## Cypress Town Center - South Coast AQMD Air District, Summer

**3.6 Paving - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595
<b>Total</b>	<b>0.0594</b>	<b>0.0371</b>	<b>0.5225</b>	<b>1.6100e-003</b>	<b>0.1677</b>	<b>1.2000e-003</b>	<b>0.1689</b>	<b>0.0445</b>	<b>1.1000e-003</b>	<b>0.0456</b>		<b>160.1586</b>	<b>160.1586</b>	<b>4.0400e-003</b>		<b>160.2595</b>

**3.7 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.3959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>62.6005</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.7 Architectural Coating - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3484	0.2176	3.0655	9.4300e-003	0.9836	7.0300e-003	0.9907	0.2609	6.4800e-003	0.2673		939.5971	939.5971	0.0237		940.1892
<b>Total</b>	<b>0.3484</b>	<b>0.2176</b>	<b>3.0655</b>	<b>9.4300e-003</b>	<b>0.9836</b>	<b>7.0300e-003</b>	<b>0.9907</b>	<b>0.2609</b>	<b>6.4800e-003</b>	<b>0.2673</b>		<b>939.5971</b>	<b>939.5971</b>	<b>0.0237</b>		<b>940.1892</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.3959					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>62.6005</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**3.7 Architectural Coating - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3484	0.2176	3.0655	9.4300e-003	0.9836	7.0300e-003	0.9907	0.2609	6.4800e-003	0.2673		939.5971	939.5971	0.0237		940.1892
<b>Total</b>	<b>0.3484</b>	<b>0.2176</b>	<b>3.0655</b>	<b>9.4300e-003</b>	<b>0.9836</b>	<b>7.0300e-003</b>	<b>0.9907</b>	<b>0.2609</b>	<b>6.4800e-003</b>	<b>0.2673</b>		<b>939.5971</b>	<b>939.5971</b>	<b>0.0237</b>		<b>940.1892</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## Cypress Town Center - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.33 27	33,632.33 27	1.6149		33,672.70 41
Unmitigated	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.33 27	33,632.33 27	1.6149		33,672.70 41

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,270.06	1,270.06	1270.06	4,339,988	4,339,988
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	933.60	933.60	933.60	2,227,729	2,227,729
Movie Theater (No Matinee)	2,046.00	2,046.00	2046.00	4,335,510	4,335,510
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	730.08	730.08	730.08	1,579,049	1,579,049
Total	4,979.74	4,979.74	4,979.74	12,482,276	12,482,276

## 4.3 Trip Type Information

## Cypress Town Center - South Coast AQMD Air District, Summer

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	16.60	8.40	6.90	1.80	79.20	19.00	66	17	17
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Enclosed Parking with Elevator	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Hotel	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Movie Theater (No Matinee)	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Regional Shopping Center	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

## Cypress Town Center - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1
NaturalGas Unmitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.692 2	3,046.692 2	0.0584	0.0559	3,064.797 1

## Cypress Town Center - South Coast AQMD Air District, Summer

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7858.34	0.0848	0.7242	0.3082	4.6200e-003		0.0586	0.0586		0.0586	0.0586		924.5101	924.5101	0.0177	0.0170	930.0040
Enclosed Parking with Elevator	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
Hotel	16349.9	0.1763	1.6029	1.3465	9.6200e-003		0.1218	0.1218		0.1218	0.1218		1,923.5197	1,923.5197	0.0369	0.0353	1,934.9503
Movie Theater (No Matinee)	1574.66	0.0170	0.1544	0.1297	9.3000e-004		0.0117	0.0117		0.0117	0.0117		185.2538	185.2538	3.5500e-003	3.4000e-003	186.3547
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
Regional Shopping Center	113.973	1.2300e-003	0.0112	9.3900e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4085	13.4085	2.6000e-004	2.5000e-004	13.4882
<b>Total</b>		<b>0.2793</b>	<b>2.4927</b>	<b>1.7937</b>	<b>0.0152</b>		<b>0.1930</b>	<b>0.1930</b>		<b>0.1930</b>	<b>0.1930</b>		<b>3,046.6922</b>	<b>3,046.6922</b>	<b>0.0584</b>	<b>0.0559</b>	<b>3,064.7971</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7.85834	0.0848	0.7242	0.3082	4.6200e-003		0.0586	0.0586		0.0586	0.0586		924.5101	924.5101	0.0177	0.0170	930.0040
Enclosed Parking with Elevator	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
Hotel	16.3499	0.1763	1.6029	1.3465	9.6200e-003		0.1218	0.1218		0.1218	0.1218		1,923.5197	1,923.5197	0.0369	0.0353	1,934.9503
Movie Theater (No Matinee)	1.57466	0.0170	0.1544	0.1297	9.3000e-004		0.0117	0.0117		0.0117	0.0117		185.2538	185.2538	3.5500e-003	3.4000e-003	186.3547
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
Regional Shopping Center	0.113973	1.2300e-003	0.0112	9.3900e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4085	13.4085	2.6000e-004	2.5000e-004	13.4882
<b>Total</b>		<b>0.2793</b>	<b>2.4927</b>	<b>1.7937</b>	<b>0.0152</b>		<b>0.1930</b>	<b>0.1930</b>		<b>0.1930</b>	<b>0.1930</b>		<b>3,046.6922</b>	<b>3,046.6922</b>	<b>0.0584</b>	<b>0.0559</b>	<b>3,064.7971</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**



## Cypress Town Center - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523
Unmitigated	11.1792	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150	0.0000	37.5365	37.5365	0.0366	0.0000	38.4523

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.0257					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6370	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150		37.5365	37.5365	0.0366		38.4523
<b>Total</b>	<b>11.1792</b>	<b>0.2401</b>	<b>20.8469</b>	<b>1.1000e-003</b>		<b>0.1150</b>	<b>0.1150</b>		<b>0.1150</b>	<b>0.1150</b>	<b>0.0000</b>	<b>37.5365</b>	<b>37.5365</b>	<b>0.0366</b>	<b>0.0000</b>	<b>38.4523</b>

## Cypress Town Center - South Coast AQMD Air District, Summer

**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	lb/day										lb/day					
Architectural Coating	1.0257					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6370	0.2401	20.8469	1.1000e-003		0.1150	0.1150		0.1150	0.1150		37.5365	37.5365	0.0366		38.4523
<b>Total</b>	<b>11.1792</b>	<b>0.2401</b>	<b>20.8469</b>	<b>1.1000e-003</b>		<b>0.1150</b>	<b>0.1150</b>		<b>0.1150</b>	<b>0.1150</b>	<b>0.0000</b>	<b>37.5365</b>	<b>37.5365</b>	<b>0.0366</b>	<b>0.0000</b>	<b>38.4523</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

## Cypress Town Center - South Coast AQMD Air District, Summer

**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**

---

## Cypress Town Center - South Coast AQMD Air District, Annual

**Cypress Town Center**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	414.00	Space	1.50	165,600.00	0
Parking Lot	577.00	Space	6.91	230,800.00	0
Hotel	120.00	Room	0.90	174,240.00	0
Movie Theater (No Matinee)	10.00	Screen	0.99	27,500.00	0
Apartments Mid Rise	251.00	Dwelling Unit	2.50	251,000.00	718
Regional Shopping Center	20.80	1000sqft	0.48	20,800.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2022
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	502.65	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Cypress Town Center - South Coast AQMD Air District, Annual

Project Characteristics - CO2 Intensity Factor is based on 2020 forecast in City of Cypress General Plan, 33% RPS, Cap and Trade, and reduction in SF6.

Land Use - Parking structure designed for residential use only. Total Project site 13.28 acres.

Construction Phase - Complete project buildout scheduled at 20 months.

Off-road Equipment - Pile driving equipment will be used during the construction phase of the mid rise apartments and hotel.

Demolition - Estimated total of 8,600 tons of debris from demolishment will be removed from project site.

Grading - 10,000 cubic yards of material will be imported to the project site.

Vehicle Trips - Total daily trip generation is 4,978 vehicle trips.

Woodstoves - No woodstoves or fireplaces will be implimented in this project.

### Energy Use -

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

## Water Mitigation -

## Off-road Equipment -

[illegible]

## Cypress Town Center - South Coast AQMD Air District, Annual

tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	300.00	330.00
tblConstructionPhase	NumDays	20.00	30.00
tblFireplaces	NumberGas	213.35	0.00
tblFireplaces	NumberNoFireplace	25.10	0.00
tblFireplaces	NumberWood	12.55	0.00
tblLandUse	LotAcreage	3.73	1.50
tblLandUse	LotAcreage	5.19	6.91
tblLandUse	LotAcreage	4.00	0.90
tblLandUse	LotAcreage	0.63	0.99
tblLandUse	LotAcreage	6.61	2.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblProjectCharacteristics	CO2IntensityFactor	702.44	502.65
tblVehicleTrips	ST_TR	6.39	5.06
tblVehicleTrips	ST_TR	8.19	7.78
tblVehicleTrips	ST_TR	376.00	204.60
tblVehicleTrips	ST_TR	49.97	35.10
tblVehicleTrips	SU_TR	5.86	5.06
tblVehicleTrips	SU_TR	5.95	7.78
tblVehicleTrips	SU_TR	314.00	204.60
tblVehicleTrips	SU_TR	25.24	35.10
tblVehicleTrips	WD_TR	6.65	5.06
tblVehicleTrips	WD_TR	8.17	7.78
tblVehicleTrips	WD_TR	220.00	204.60
tblVehicleTrips	WD_TR	42.70	35.10
tblWoodstoves	NumberCatalytic	12.55	0.00

## Cypress Town Center - South Coast AQMD Air District, Annual

tblWoodstoves	:	NumberNoncatalytic	:	12.55	:	0.00
---------------	---	--------------------	---	-------	---	------

**2.0 Emissions Summary**

---

## Cypress Town Center - South Coast AQMD Air District, Annual

**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1409	1.5368	0.9715	2.2300e-003	0.3426	0.0651	0.4076	0.1257	0.0601	0.1858	0.0000	200.8582	200.8582	0.0470	0.0000	202.0334
2021	0.5886	4.6331	5.0836	0.0146	0.7338	0.1626	0.8965	0.1973	0.1523	0.3496	0.0000	1,327.6837	1,327.6837	0.1361	0.0000	1,331.0854
2022	2.0452	1.2363	1.5424	4.1800e-003	0.2086	0.0447	0.2532	0.0560	0.0419	0.0978	0.0000	378.9920	378.9920	0.0430	0.0000	380.0676
Maximum	2.0452	4.6331	5.0836	0.0146	0.7338	0.1626	0.8965	0.1973	0.1523	0.3496	0.0000	1,327.6837	1,327.6837	0.1361	0.0000	1,331.0854

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1409	1.5368	0.9715	2.2300e-003	0.1520	0.0651	0.2170	0.0540	0.0601	0.1141	0.0000	200.8581	200.8581	0.0470	0.0000	202.0333
2021	0.5886	4.6331	5.0836	0.0146	0.7338	0.1626	0.8965	0.1973	0.1523	0.3496	0.0000	1,327.6832	1,327.6832	0.1361	0.0000	1,331.0849
2022	2.0452	1.2363	1.5424	4.1800e-003	0.2086	0.0447	0.2532	0.0560	0.0419	0.0978	0.0000	378.9918	378.9918	0.0430	0.0000	380.0675
Maximum	2.0452	4.6331	5.0836	0.0146	0.7338	0.1626	0.8965	0.1973	0.1523	0.3496	0.0000	1,327.6832	1,327.6832	0.1361	0.0000	1,331.0849



## Cypress Town Center - South Coast 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
Percent Reduction	0.00	0.00	0.00	0.00	14.83	0.00	12.24	18.92	0.00	11.32	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)
1	10-1-2020	12-31-2020	1.6693	1.6693
2	1-1-2021	3-31-2021	1.2846	1.2846
3	4-1-2021	6-30-2021	1.2903	1.2903
4	7-1-2021	9-30-2021	1.3044	1.3044
5	10-1-2021	12-31-2021	1.3132	1.3132
6	1-1-2022	3-31-2022	1.1633	1.1633
7	4-1-2022	6-30-2022	1.3424	1.3424
8	7-1-2022	9-30-2022	0.7841	0.7841
		Highest	1.6693	1.6693

## Cypress Town Center - South Coast AQMD Air District, Annual

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0036	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604
Energy	0.0510	0.4549	0.3274	2.7800e-003		0.0352	0.0352		0.0352	0.0352	0.0000	1,437.9420	1,437.9420	0.0635	0.0204	1,445.6066
Mobile	1.2943	7.1012	15.6182	0.0577	4.7430	0.0462	4.7892	1.2710	0.0431	1.3140	0.0000	5,336.4146	5,336.4146	0.2659	0.0000	5,343.0624
Waste						0.0000	0.0000		0.0000	0.0000	73.0260	0.0000	73.0260	4.3157	0.0000	180.9188
Water						0.0000	0.0000		0.0000	0.0000	10.1466	126.0983	136.2448	1.0494	0.0261	170.2620
<b>Total</b>	<b>3.3489</b>	<b>7.5862</b>	<b>18.5515</b>	<b>0.0606</b>	<b>4.7430</b>	<b>0.0957</b>	<b>4.8387</b>	<b>1.2710</b>	<b>0.0926</b>	<b>1.3636</b>	<b>83.1726</b>	<b>6,904.7114</b>	<b>6,987.8840</b>	<b>5.6987</b>	<b>0.0465</b>	<b>7,144.2103</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0036	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604
Energy	0.0510	0.4549	0.3274	2.7800e-003		0.0352	0.0352		0.0352	0.0352	0.0000	1,437.9420	1,437.9420	0.0635	0.0204	1,445.6066
Mobile	1.2943	7.1012	15.6182	0.0577	4.7430	0.0462	4.7892	1.2710	0.0431	1.3140	0.0000	5,336.4146	5,336.4146	0.2659	0.0000	5,343.0624
Waste						0.0000	0.0000		0.0000	0.0000	73.0260	0.0000	73.0260	4.3157	0.0000	180.9188
Water						0.0000	0.0000		0.0000	0.0000	8.1172	105.2085	113.3257	0.8398	0.0209	140.5611
<b>Total</b>	<b>3.3489</b>	<b>7.5862</b>	<b>18.5515</b>	<b>0.0606</b>	<b>4.7430</b>	<b>0.0957</b>	<b>4.8387</b>	<b>1.2710</b>	<b>0.0926</b>	<b>1.3636</b>	<b>81.1432</b>	<b>6,883.8216</b>	<b>6,964.9649</b>	<b>5.4891</b>	<b>0.0413</b>	<b>7,114.5094</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.44</b>	<b>0.30</b>	<b>0.33</b>	<b>3.68</b>	<b>11.12</b>	<b>0.42</b>

**3.0 Construction Detail****Construction Phase**

## Cypress Town Center - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2020	10/28/2020	5	20	
2	Site Preparation	Site Preparation	10/29/2020	11/11/2020	5	10	
3	Grading	Grading	11/12/2020	12/23/2020	5	30	
4	Building Construction	Building Construction	12/24/2020	3/30/2022	5	330	
5	Paving	Paving	3/31/2022	5/11/2022	5	30	
6	Architectural Coating	Architectural Coating	5/12/2022	8/3/2022	5	60	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 8.41**

**Residential Indoor: 508,275; Residential Outdoor: 169,425; Non-Residential Indoor: 333,810; Non-Residential Outdoor: 111,270; Striped Parking Area: 23,784 (Architectural Coating – sqft)**

**OffRoad Equipment**

## Cypress Town Center - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Other Construction Equipment	1	8.00	172	0.42

Trips and VMT

## Cypress Town Center - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	850.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	439.00	128.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	88.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0920	0.0000	0.0920	0.0139	0.0000	0.0139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
<b>Total</b>	<b>0.0331</b>	<b>0.3320</b>	<b>0.2175</b>	<b>3.9000e-004</b>	<b>0.0920</b>	<b>0.0166</b>	<b>0.1086</b>	<b>0.0139</b>	<b>0.0154</b>	<b>0.0294</b>	<b>0.0000</b>	<b>33.9986</b>	<b>33.9986</b>	<b>9.6000e-003</b>	<b>0.0000</b>	<b>34.2386</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.2 Demolition - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2700e-003	0.1193	0.0238	3.3000e-004	7.3100e-003	3.8000e-004	7.6800e-003	2.0100e-003	3.6000e-004	2.3600e-003	0.0000	32.0722	32.0722	2.2100e-003	0.0000	32.1275
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	6.7000e-004	5.1000e-004	5.6800e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4815	1.4815	4.0000e-005	0.0000	1.4826
<b>Total</b>	<b>3.9400e-003</b>	<b>0.1198</b>	<b>0.0295</b>	<b>3.5000e-004</b>	<b>8.9600e-003</b>	<b>3.9000e-004</b>	<b>9.3400e-003</b>	<b>2.4500e-003</b>	<b>3.7000e-004</b>	<b>2.8100e-003</b>	<b>0.0000</b>	<b>33.5537</b>	<b>33.5537</b>	<b>2.2500e-003</b>	<b>0.0000</b>	<b>33.6100</b>

**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					0.0359	0.0000	0.0359	5.4300e-003	0.0000	5.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
<b>Total</b>	<b>0.0331</b>	<b>0.3320</b>	<b>0.2175</b>	<b>3.9000e-004</b>	<b>0.0359</b>	<b>0.0166</b>	<b>0.0525</b>	<b>5.4300e-003</b>	<b>0.0154</b>	<b>0.0209</b>	<b>0.0000</b>	<b>33.9986</b>	<b>33.9986</b>	<b>9.6000e-003</b>	<b>0.0000</b>	<b>34.2385</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.2 Demolition - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2700e-003	0.1193	0.0238	3.3000e-004	7.3100e-003	3.8000e-004	7.6800e-003	2.0100e-003	3.6000e-004	2.3600e-003	0.0000	32.0722	32.0722	2.2100e-003	0.0000	32.1275
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	6.7000e-004	5.1000e-004	5.6800e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4815	1.4815	4.0000e-005	0.0000	1.4826
<b>Total</b>	<b>3.9400e-003</b>	<b>0.1198</b>	<b>0.0295</b>	<b>3.5000e-004</b>	<b>8.9600e-003</b>	<b>3.9000e-004</b>	<b>9.3400e-003</b>	<b>2.4500e-003</b>	<b>3.7000e-004</b>	<b>2.8100e-003</b>	<b>0.0000</b>	<b>33.5537</b>	<b>33.5537</b>	<b>2.2500e-003</b>	<b>0.0000</b>	<b>33.6100</b>

**3.3 Site Preparation - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
<b>Total</b>	<b>0.0204</b>	<b>0.2121</b>	<b>0.1076</b>	<b>1.9000e-004</b>	<b>0.0903</b>	<b>0.0110</b>	<b>0.1013</b>	<b>0.0497</b>	<b>0.0101</b>	<b>0.0598</b>	<b>0.0000</b>	<b>16.7153</b>	<b>16.7153</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8505</b>



## Cypress Town Center - South Coast AQMD Air District, Annual

**3.3 Site Preparation - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8889	0.8889	3.0000e-005	0.0000	0.8895
<b>Total</b>	<b>4.0000e-004</b>	<b>3.1000e-004</b>	<b>3.4100e-003</b>	<b>1.0000e-005</b>	<b>9.9000e-004</b>	<b>1.0000e-005</b>	<b>1.0000e-003</b>	<b>2.6000e-004</b>	<b>1.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.8889</b>	<b>0.8889</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.8895</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
<b>Total</b>	<b>0.0204</b>	<b>0.2121</b>	<b>0.1076</b>	<b>1.9000e-004</b>	<b>0.0352</b>	<b>0.0110</b>	<b>0.0462</b>	<b>0.0194</b>	<b>0.0101</b>	<b>0.0295</b>	<b>0.0000</b>	<b>16.7153</b>	<b>16.7153</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8505</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.3 Site Preparation - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	3.1000e-004	3.4100e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8889	0.8889	3.0000e-005	0.0000	0.8895
<b>Total</b>	<b>4.0000e-004</b>	<b>3.1000e-004</b>	<b>3.4100e-003</b>	<b>1.0000e-005</b>	<b>9.9000e-004</b>	<b>1.0000e-005</b>	<b>1.0000e-003</b>	<b>2.6000e-004</b>	<b>1.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.8889</b>	<b>0.8889</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.8895</b>

**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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872
<b>Total</b>	<b>0.0668</b>	<b>0.7530</b>	<b>0.4794</b>	<b>9.3000e-004</b>	<b>0.1301</b>	<b>0.0326</b>	<b>0.1627</b>	<b>0.0540</b>	<b>0.0300</b>	<b>0.0840</b>	<b>0.0000</b>	<b>81.7264</b>	<b>81.7264</b>	<b>0.0264</b>	<b>0.0000</b>	<b>82.3872</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.4 Grading - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9630	2.9630	9.0000e-005	0.0000	2.9651
<b>Total</b>	<b>1.3400e-003</b>	<b>1.0300e-003</b>	<b>0.0114</b>	<b>3.0000e-005</b>	<b>3.2900e-003</b>	<b>3.0000e-005</b>	<b>3.3200e-003</b>	<b>8.7000e-004</b>	<b>2.0000e-005</b>	<b>9.0000e-004</b>	<b>0.0000</b>	<b>2.9630</b>	<b>2.9630</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.9651</b>

**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					0.0507	0.0000	0.0507	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
<b>Total</b>	<b>0.0668</b>	<b>0.7530</b>	<b>0.4794</b>	<b>9.3000e-004</b>	<b>0.0507</b>	<b>0.0326</b>	<b>0.0834</b>	<b>0.0210</b>	<b>0.0300</b>	<b>0.0510</b>	<b>0.0000</b>	<b>81.7263</b>	<b>81.7263</b>	<b>0.0264</b>	<b>0.0000</b>	<b>82.3871</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.4 Grading - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.0300e-003	0.0114	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9630	2.9630	9.0000e-005	0.0000	2.9651
<b>Total</b>	<b>1.3400e-003</b>	<b>1.0300e-003</b>	<b>0.0114</b>	<b>3.0000e-005</b>	<b>3.2900e-003</b>	<b>3.0000e-005</b>	<b>3.3200e-003</b>	<b>8.7000e-004</b>	<b>2.0000e-005</b>	<b>9.0000e-004</b>	<b>0.0000</b>	<b>2.9630</b>	<b>2.9630</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.9651</b>

**3.5 Building Construction - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8300e-003	0.0731	0.0628	1.0000e-004		4.1700e-003	4.1700e-003		3.9100e-003	3.9100e-003	0.0000	8.5601	8.5601	2.2200e-003	0.0000	8.6155
<b>Total</b>	<b>7.8300e-003</b>	<b>0.0731</b>	<b>0.0628</b>	<b>1.0000e-004</b>		<b>4.1700e-003</b>	<b>4.1700e-003</b>		<b>3.9100e-003</b>	<b>3.9100e-003</b>	<b>0.0000</b>	<b>8.5601</b>	<b>8.5601</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>8.6155</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0410	0.0102	1.0000e-004	2.4200e-003	2.0000e-004	2.6200e-003	7.0000e-004	1.9000e-004	8.9000e-004	0.0000	9.4446	9.4446	6.2000e-004	0.0000	9.4601
Worker	5.8800e-003	4.5100e-003	0.0499	1.4000e-004	0.0145	1.1000e-004	0.0146	3.8400e-003	1.0000e-004	3.9400e-003	0.0000	13.0076	13.0076	3.7000e-004	0.0000	13.0169
<b>Total</b>	<b>7.1700e-003</b>	<b>0.0455</b>	<b>0.0600</b>	<b>2.4000e-004</b>	<b>0.0169</b>	<b>3.1000e-004</b>	<b>0.0172</b>	<b>4.5400e-003</b>	<b>2.9000e-004</b>	<b>4.8300e-003</b>	<b>0.0000</b>	<b>22.4521</b>	<b>22.4521</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>22.4769</b>

**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	7.8300e-003	0.0731	0.0628	1.0000e-004		4.1700e-003	4.1700e-003		3.9100e-003	3.9100e-003	0.0000	8.5601	8.5601	2.2200e-003	0.0000	8.6155
<b>Total</b>	<b>7.8300e-003</b>	<b>0.0731</b>	<b>0.0628</b>	<b>1.0000e-004</b>		<b>4.1700e-003</b>	<b>4.1700e-003</b>		<b>3.9100e-003</b>	<b>3.9100e-003</b>	<b>0.0000</b>	<b>8.5601</b>	<b>8.5601</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>8.6155</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0410	0.0102	1.0000e-004	2.4200e-003	2.0000e-004	2.6200e-003	7.0000e-004	1.9000e-004	8.9000e-004	0.0000	9.4446	9.4446	6.2000e-004	0.0000	9.4601
Worker	5.8800e-003	4.5100e-003	0.0499	1.4000e-004	0.0145	1.1000e-004	0.0146	3.8400e-003	1.0000e-004	3.9400e-003	0.0000	13.0076	13.0076	3.7000e-004	0.0000	13.0169
<b>Total</b>	<b>7.1700e-003</b>	<b>0.0455</b>	<b>0.0600</b>	<b>2.4000e-004</b>	<b>0.0169</b>	<b>3.1000e-004</b>	<b>0.0172</b>	<b>4.5400e-003</b>	<b>2.9000e-004</b>	<b>4.8300e-003</b>	<b>0.0000</b>	<b>22.4521</b>	<b>22.4521</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>22.4769</b>

**3.5 Building Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3023	2.8403	2.6865	4.3100e-003		0.1547	0.1547		0.1448	0.1448	0.0000	372.3685	372.3685	0.0956	0.0000	374.7583
<b>Total</b>	<b>0.3023</b>	<b>2.8403</b>	<b>2.6865</b>	<b>4.3100e-003</b>		<b>0.1547</b>	<b>0.1547</b>		<b>0.1448</b>	<b>0.1448</b>	<b>0.0000</b>	<b>372.3685</b>	<b>372.3685</b>	<b>0.0956</b>	<b>0.0000</b>	<b>374.7583</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2021****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0475	1.6163	0.4007	4.2100e-003	0.1053	3.2500e-003	0.1085	0.0304	3.1100e-003	0.0335	0.0000	407.8223	407.8223	0.0258	0.0000	408.4671
Worker	0.2388	0.1765	1.9964	6.0600e-003	0.6285	4.7100e-003	0.6333	0.1669	4.3400e-003	0.1713	0.0000	547.4929	547.4929	0.0147	0.0000	547.8599
<b>Total</b>	<b>0.2863</b>	<b>1.7928</b>	<b>2.3972</b>	<b>0.0103</b>	<b>0.7338</b>	<b>7.9600e-003</b>	<b>0.7418</b>	<b>0.1973</b>	<b>7.4500e-003</b>	<b>0.2048</b>	<b>0.0000</b>	<b>955.3152</b>	<b>955.3152</b>	<b>0.0405</b>	<b>0.0000</b>	<b>956.3271</b>

**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	0.3023	2.8403	2.6865	4.3100e-003		0.1547	0.1547		0.1448	0.1448	0.0000	372.3680	372.3680	0.0956	0.0000	374.7579
<b>Total</b>	<b>0.3023</b>	<b>2.8403</b>	<b>2.6865</b>	<b>4.3100e-003</b>		<b>0.1547</b>	<b>0.1547</b>		<b>0.1448</b>	<b>0.1448</b>	<b>0.0000</b>	<b>372.3680</b>	<b>372.3680</b>	<b>0.0956</b>	<b>0.0000</b>	<b>374.7579</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2021****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0475	1.6163	0.4007	4.2100e-003	0.1053	3.2500e-003	0.1085	0.0304	3.1100e-003	0.0335	0.0000	407.8223	407.8223	0.0258	0.0000	408.4671
Worker	0.2388	0.1765	1.9964	6.0600e-003	0.6285	4.7100e-003	0.6333	0.1669	4.3400e-003	0.1713	0.0000	547.4929	547.4929	0.0147	0.0000	547.8599
<b>Total</b>	<b>0.2863</b>	<b>1.7928</b>	<b>2.3972</b>	<b>0.0103</b>	<b>0.7338</b>	<b>7.9600e-003</b>	<b>0.7418</b>	<b>0.1973</b>	<b>7.4500e-003</b>	<b>0.2048</b>	<b>0.0000</b>	<b>955.3152</b>	<b>955.3152</b>	<b>0.0405</b>	<b>0.0000</b>	<b>956.3271</b>

**3.5 Building Construction - 2022****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	0.0655	0.6108	0.6407	1.0400e-003		0.0317	0.0317		0.0297	0.0297	0.0000	89.9043	89.9043	0.0230	0.0000	90.4782
<b>Total</b>	<b>0.0655</b>	<b>0.6108</b>	<b>0.6407</b>	<b>1.0400e-003</b>		<b>0.0317</b>	<b>0.0317</b>		<b>0.0297</b>	<b>0.0297</b>	<b>0.0000</b>	<b>89.9043</b>	<b>89.9043</b>	<b>0.0230</b>	<b>0.0000</b>	<b>90.4782</b>



## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2022****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	0.0108	0.3699	0.0914	1.0100e-003	0.0254	6.8000e-004	0.0261	7.3300e-003	6.5000e-004	7.9800e-003	0.0000	97.5732	97.5732	5.9900e-003	0.0000	97.7229
Worker	0.0541	0.0385	0.4450	1.4100e-003	0.1517	1.1100e-003	0.1528	0.0403	1.0200e-003	0.0413	0.0000	127.4154	127.4154	3.2000e-003	0.0000	127.4954
<b>Total</b>	<b>0.0649</b>	<b>0.4084</b>	<b>0.5364</b>	<b>2.4200e-003</b>	<b>0.1771</b>	<b>1.7900e-003</b>	<b>0.1789</b>	<b>0.0476</b>	<b>1.6700e-003</b>	<b>0.0493</b>	<b>0.0000</b>	<b>224.9885</b>	<b>224.9885</b>	<b>9.1900e-003</b>	<b>0.0000</b>	<b>225.2183</b>

**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	0.0655	0.6108	0.6407	1.0400e-003		0.0317	0.0317		0.0297	0.0297	0.0000	89.9042	89.9042	0.0230	0.0000	90.4781
<b>Total</b>	<b>0.0655</b>	<b>0.6108</b>	<b>0.6407</b>	<b>1.0400e-003</b>		<b>0.0317</b>	<b>0.0317</b>		<b>0.0297</b>	<b>0.0297</b>	<b>0.0000</b>	<b>89.9042</b>	<b>89.9042</b>	<b>0.0230</b>	<b>0.0000</b>	<b>90.4781</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.5 Building Construction - 2022****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	0.0108	0.3699	0.0914	1.0100e-003	0.0254	6.8000e-004	0.0261	7.3300e-003	6.5000e-004	7.9800e-003	0.0000	97.5732	97.5732	5.9900e-003	0.0000	97.7229
Worker	0.0541	0.0385	0.4450	1.4100e-003	0.1517	1.1100e-003	0.1528	0.0403	1.0200e-003	0.0413	0.0000	127.4154	127.4154	3.2000e-003	0.0000	127.4954
<b>Total</b>	<b>0.0649</b>	<b>0.4084</b>	<b>0.5364</b>	<b>2.4200e-003</b>	<b>0.1771</b>	<b>1.7900e-003</b>	<b>0.1789</b>	<b>0.0476</b>	<b>1.6700e-003</b>	<b>0.0493</b>	<b>0.0000</b>	<b>224.9885</b>	<b>224.9885</b>	<b>9.1900e-003</b>	<b>0.0000</b>	<b>225.2183</b>

**3.6 Paving - 2022****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	0.0165	0.1669	0.2187	3.4000e-004		8.5200e-003	8.5200e-003		7.8400e-003	7.8400e-003	0.0000	30.0413	30.0413	9.7200e-003	0.0000	30.2842
Paving	9.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0256</b>	<b>0.1669</b>	<b>0.2187</b>	<b>3.4000e-004</b>		<b>8.5200e-003</b>	<b>8.5200e-003</b>		<b>7.8400e-003</b>	<b>7.8400e-003</b>	<b>0.0000</b>	<b>30.0413</b>	<b>30.0413</b>	<b>9.7200e-003</b>	<b>0.0000</b>	<b>30.2842</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.6 Paving - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.3000e-004	7.2400e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.0731	2.0731	5.0000e-005	0.0000	2.0745
<b>Total</b>	<b>8.8000e-004</b>	<b>6.3000e-004</b>	<b>7.2400e-003</b>	<b>2.0000e-005</b>	<b>2.4700e-003</b>	<b>2.0000e-005</b>	<b>2.4900e-003</b>	<b>6.6000e-004</b>	<b>2.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>2.0731</b>	<b>2.0731</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>2.0745</b>

**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	0.0165	0.1669	0.2187	3.4000e-004		8.5200e-003	8.5200e-003		7.8400e-003	7.8400e-003	0.0000	30.0413	30.0413	9.7200e-003	0.0000	30.2842
Paving	9.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0256</b>	<b>0.1669</b>	<b>0.2187</b>	<b>3.4000e-004</b>		<b>8.5200e-003</b>	<b>8.5200e-003</b>		<b>7.8400e-003</b>	<b>7.8400e-003</b>	<b>0.0000</b>	<b>30.0413</b>	<b>30.0413</b>	<b>9.7200e-003</b>	<b>0.0000</b>	<b>30.2842</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.6 Paving - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.3000e-004	7.2400e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.0731	2.0731	5.0000e-005	0.0000	2.0745
<b>Total</b>	<b>8.8000e-004</b>	<b>6.3000e-004</b>	<b>7.2400e-003</b>	<b>2.0000e-005</b>	<b>2.4700e-003</b>	<b>2.0000e-005</b>	<b>2.4900e-003</b>	<b>6.6000e-004</b>	<b>2.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>2.0731</b>	<b>2.0731</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>2.0745</b>

**3.7 Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8719					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1400e-003	0.0423	0.0544	9.0000e-005		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	7.6598	7.6598	5.0000e-004	0.0000	7.6722
<b>Total</b>	<b>1.8780</b>	<b>0.0423</b>	<b>0.0544</b>	<b>9.0000e-005</b>		<b>2.4500e-003</b>	<b>2.4500e-003</b>		<b>2.4500e-003</b>	<b>2.4500e-003</b>	<b>0.0000</b>	<b>7.6598</b>	<b>7.6598</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>7.6722</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.7 Architectural Coating - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0103	7.3500e-003	0.0850	2.7000e-004	0.0290	2.1000e-004	0.0292	7.6900e-003	1.9000e-004	7.8900e-003	0.0000	24.3249	24.3249	6.1000e-004	0.0000	24.3402
<b>Total</b>	<b>0.0103</b>	<b>7.3500e-003</b>	<b>0.0850</b>	<b>2.7000e-004</b>	<b>0.0290</b>	<b>2.1000e-004</b>	<b>0.0292</b>	<b>7.6900e-003</b>	<b>1.9000e-004</b>	<b>7.8900e-003</b>	<b>0.0000</b>	<b>24.3249</b>	<b>24.3249</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>24.3402</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8719					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1400e-003	0.0423	0.0544	9.0000e-005		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	7.6598	7.6598	5.0000e-004	0.0000	7.6722
<b>Total</b>	<b>1.8780</b>	<b>0.0423</b>	<b>0.0544</b>	<b>9.0000e-005</b>		<b>2.4500e-003</b>	<b>2.4500e-003</b>		<b>2.4500e-003</b>	<b>2.4500e-003</b>	<b>0.0000</b>	<b>7.6598</b>	<b>7.6598</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>7.6722</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**3.7 Architectural Coating - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0103	7.3500e-003	0.0850	2.7000e-004	0.0290	2.1000e-004	0.0292	7.6900e-003	1.9000e-004	7.8900e-003	0.0000	24.3249	24.3249	6.1000e-004	0.0000	24.3402
<b>Total</b>	<b>0.0103</b>	<b>7.3500e-003</b>	<b>0.0850</b>	<b>2.7000e-004</b>	<b>0.0290</b>	<b>2.1000e-004</b>	<b>0.0292</b>	<b>7.6900e-003</b>	<b>1.9000e-004</b>	<b>7.8900e-003</b>	<b>0.0000</b>	<b>24.3249</b>	<b>24.3249</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>24.3402</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## Cypress Town Center - South Coast 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					
Mitigated	1.2943	7.1012	15.6182	0.0577	4.7430	0.0462	4.7892	1.2710	0.0431	1.3140	0.0000	5,336.414 6	5,336.414 6	0.2659	0.0000	5,343.062 4
Unmitigated	1.2943	7.1012	15.6182	0.0577	4.7430	0.0462	4.7892	1.2710	0.0431	1.3140	0.0000	5,336.414 6	5,336.414 6	0.2659	0.0000	5,343.062 4

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,270.06	1,270.06	1270.06	4,339,988	4,339,988
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	933.60	933.60	933.60	2,227,729	2,227,729
Movie Theater (No Matinee)	2,046.00	2,046.00	2046.00	4,335,510	4,335,510
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	730.08	730.08	730.08	1,579,049	1,579,049
Total	4,979.74	4,979.74	4,979.74	12,482,276	12,482,276

## 4.3 Trip Type Information

## Cypress Town Center - South Coast AQMD Air District, Annual

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	16.60	8.40	6.90	1.80	79.20	19.00	66	17	17
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Enclosed Parking with Elevator	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Hotel	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Movie Theater (No Matinee)	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Regional Shopping Center	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**



## Cypress Town Center - South Coast 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	933.5279	933.5279	0.0539	0.0111	938.1951
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	933.5279	933.5279	0.0539	0.0111	938.1951
NaturalGas Mitigated	0.0510	0.4549	0.3274	2.7800e-003		0.0352	0.0352		0.0352	0.0352	0.0000	504.4141	504.4141	9.6700e-003	9.2500e-003	507.4115
NaturalGas Unmitigated	0.0510	0.4549	0.3274	2.7800e-003		0.0352	0.0352		0.0352	0.0352	0.0000	504.4141	504.4141	9.6700e-003	9.2500e-003	507.4115

## Cypress Town Center - South Coast AQMD Air District, Annual

**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					
Apartments Mid Rise	2.86829e+006	0.0155	0.1322	0.0562	8.4000e-004		0.0107	0.0107		0.0107	0.0107	0.0000	153.0630	153.0630	2.9300e-003	2.8100e-003	153.9726
Enclosed Parking with Elevator	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
Hotel	5.96772e+006	0.0322	0.2925	0.2457	1.7600e-003		0.0222	0.0222		0.0222	0.0222	0.0000	318.4603	318.4603	6.1000e-003	5.8400e-003	320.3527
Movie Theater (No Matinee)	574750	3.1000e-003	0.0282	0.0237	1.7000e-004		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	30.6709	30.6709	5.9000e-004	5.6000e-004	30.8531
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
Regional Shopping Center	41600	2.2000e-004	2.0400e-003	1.7100e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.2199	2.2199	4.0000e-005	4.0000e-005	2.2331
<b>Total</b>		<b>0.0510</b>	<b>0.4549</b>	<b>0.3274</b>	<b>2.7800e-003</b>		<b>0.0352</b>	<b>0.0352</b>		<b>0.0352</b>	<b>0.0352</b>	<b>0.0000</b>	<b>504.4141</b>	<b>504.4141</b>	<b>9.6600e-003</b>	<b>9.2500e-003</b>	<b>507.4116</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**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					
Apartments Mid Rise	2.86829e+006	0.0155	0.1322	0.0562	8.4000e-004		0.0107	0.0107		0.0107	0.0107	0.0000	153.0630	153.0630	2.9300e-003	2.8100e-003	153.9726
Enclosed Parking with Elevator	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
Hotel	5.96772e+006	0.0322	0.2925	0.2457	1.7600e-003		0.0222	0.0222		0.0222	0.0222	0.0000	318.4603	318.4603	6.1000e-003	5.8400e-003	320.3527
Movie Theater (No Matinee)	574750	3.1000e-003	0.0282	0.0237	1.7000e-004		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	30.6709	30.6709	5.9000e-004	5.6000e-004	30.8531
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
Regional Shopping Center	41600	2.2000e-004	2.0400e-003	1.7100e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.2199	2.2199	4.0000e-005	4.0000e-005	2.2331
<b>Total</b>		<b>0.0510</b>	<b>0.4549</b>	<b>0.3274</b>	<b>2.7800e-003</b>		<b>0.0352</b>	<b>0.0352</b>		<b>0.0352</b>	<b>0.0352</b>	<b>0.0000</b>	<b>504.4141</b>	<b>504.4141</b>	<b>9.6600e-003</b>	<b>9.2500e-003</b>	<b>507.4116</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	997800	227.4967	0.0131	2.7200e-003	228.6341
Enclosed Parking with Elevator	970416	221.2531	0.0128	2.6400e-003	222.3593
Hotel	1.57513e+006	359.1267	0.0207	4.2900e-003	360.9222
Movie Theater (No Matinee)	232375	52.9811	3.0600e-003	6.3000e-004	53.2460
Parking Lot	80780	18.4177	1.0600e-003	2.2000e-004	18.5098
Regional Shopping Center	237952	54.2526	3.1300e-003	6.5000e-004	54.5239
<b>Total</b>		<b>933.5279</b>	<b>0.0539</b>	<b>0.0112</b>	<b>938.1951</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	997800	227.4967	0.0131	2.7200e-003	228.6341
Enclosed Parking with Elevator	970416	221.2531	0.0128	2.6400e-003	222.3593
Hotel	1.57513e+006	359.1267	0.0207	4.2900e-003	360.9222
Movie Theater (No Matinee)	232375	52.9811	3.0600e-003	6.3000e-004	53.2460
Parking Lot	80780	18.4177	1.0600e-003	2.2000e-004	18.5098
Regional Shopping Center	237952	54.2526	3.1300e-003	6.5000e-004	54.5239
<b>Total</b>		<b>933.5279</b>	<b>0.0539</b>	<b>0.0112</b>	<b>938.1951</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

## Cypress Town Center - South Coast 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					
Mitigated	2.0036	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604
Unmitigated	2.0036	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604

## 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	0.1872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7368					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0796	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604
<b>Total</b>	<b>2.0036</b>	<b>0.0300</b>	<b>2.6059</b>	<b>1.4000e-004</b>		<b>0.0144</b>	<b>0.0144</b>		<b>0.0144</b>	<b>0.0144</b>	<b>0.0000</b>	<b>4.2566</b>	<b>4.2566</b>	<b>4.1500e-003</b>	<b>0.0000</b>	<b>4.3604</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**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	0.1872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7368					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0796	0.0300	2.6059	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2566	4.2566	4.1500e-003	0.0000	4.3604
<b>Total</b>	<b>2.0036</b>	<b>0.0300</b>	<b>2.6059</b>	<b>1.4000e-004</b>		<b>0.0144</b>	<b>0.0144</b>		<b>0.0144</b>	<b>0.0144</b>	<b>0.0000</b>	<b>4.2566</b>	<b>4.2566</b>	<b>4.1500e-003</b>	<b>0.0000</b>	<b>4.3604</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

## Cypress Town Center - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	113.3257	0.8398	0.0209	140.5611
Unmitigated	136.2448	1.0494	0.0261	170.2620



## Cypress Town Center - South Coast AQMD Air District, Annual

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.3537 / 10.3099	79.8541	0.5372	0.0135	97.2991
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	3.04401 / 0.338224	10.8594	0.0998	2.4600e-003	14.0866
Movie Theater (No Matinee)	11.044 / 0.704939	38.0766	0.3619	8.9100e-003	49.7784
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.54071 / 0.944305	7.4548	0.0506	1.2700e-003	9.0980
<b>Total</b>		<b>136.2448</b>	<b>1.0494</b>	<b>0.0261</b>	<b>170.2620</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.0829 / 9.68101	67.5133	0.4300	0.0108	81.4875
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	2.43521 / 0.317592	8.8066	0.0798	1.9700e-003	11.3889
Movie Theater (No Matinee)	8.83523 / 0.661937	30.7095	0.2895	7.1300e-003	40.0722
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.23257 / 0.886703	6.2963	0.0405	1.0200e-003	7.6125
<b>Total</b>		<b>113.3257</b>	<b>0.8398</b>	<b>0.0209</b>	<b>140.5611</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

## Cypress Town Center - South Coast AQMD Air District, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	73.0260	4.3157	0.0000	180.9188
Unmitigated	73.0260	4.3157	0.0000	180.9188

## Cypress Town Center - South Coast AQMD Air District, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115.46	23.4373	1.3851	0.0000	58.0650
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	65.7	13.3365	0.7882	0.0000	33.0406
Movie Theater (No Matinee)	156.75	31.8188	1.8804	0.0000	78.8298
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	21.84	4.4333	0.2620	0.0000	10.9834
<b>Total</b>		<b>73.0260</b>	<b>4.3157</b>	<b>0.0000</b>	<b>180.9188</b>

## Cypress Town Center - South Coast AQMD Air District, Annual

**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	115.46	23.4373	1.3851	0.0000	58.0650
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	65.7	13.3365	0.7882	0.0000	33.0406
Movie Theater (No Matinee)	156.75	31.8188	1.8804	0.0000	78.8298
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	21.84	4.4333	0.2620	0.0000	10.9834
<b>Total</b>		<b>73.0260</b>	<b>4.3157</b>	<b>0.0000</b>	<b>180.9188</b>

**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**

## Cypress Town Center - South Coast AQMD Air District, Annual

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

---



## APPENDIX C

### BIOLOGICAL RESOURCES SPECIES TABLES



**This page intentionally left blank**



## Literature Review and Records Search

LSA Biologist Jeremy Rosenthal conducted a literature review and records search on December 30, 2019, to identify the existence and potential for occurrence of sensitive or special-status plant and animal species<sup>1</sup> in the vicinity of the project site. Mr. Rosenthal also examined federal and State lists of sensitive species. Current electronic database records reviewed included the following:

- **California Natural Diversity Data Base information (CNDDB – RareFind 5)**, which is administered by the California Department of Fish and Wildlife (CDFW). This database covers sensitive plant and animal species as well as sensitive natural communities that occur in California. Records from seven USGS quadrangles surrounding the project site (*Anaheim, La Habra, Long Beach, Newport Beach, Seal Beach, South Gate, and Whitter*) were obtained from this database to assist with the field survey.
- **California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants**, which uses four specific categories or "lists" of sensitive plant species to assist with the conservation of rare or endangered botanical resources. All of the plants constituting California Rare Plant Ranks 1A, 1B, 2A, and 2B are intended to meet the status definitions of "threatened" or "endangered" in CESA and the California Fish and Game Code, and are considered by CNPS to be eligible for State listing. At the discretion of the CEQA Lead Agency, impacts to these species may be analyzed as such, pursuant to CEQA Guidelines Sections 15125(c) and 15380. Plants in Rank 3 (limited information), Rank 4 (limited records), or that are considered Locally Unusual and Significant may be analyzed under CEQA if there is sufficient information to assess potential significant impacts. Records from the seven USGS quadrangles surrounding the project site were obtained from this database to assist with the field survey.

In addition to the databases listed above, historic and current aerial imagery, existing environmental reports for developments in the project vicinity, and regional habitat conservation plans and local land use policies related to biological resources were reviewed.

## Wildlife

Native wildlife habitat is largely absent on the project site. Furthermore, the lack of ground cover and suitable foraging habitat make the site undesirable for many native wildlife species.

Suitable habitat for such species is absent from the proposed project disturbance limits. In addition, the project site does not function as a wildlife movement corridor.

---

<sup>1</sup> For the purposes of this report, the term "special-status species" refers to those species that are listed or proposed for listing under the CESA and/or FESA; California Fully Protected Species; plants with a CRPR of 1, 2, or 3; California Species of Special Concern; and California Special Animals. It should be noted that "Species of Special Concern" and "California Special Animal" are administrative designations made by the CDFW and carry no formal legal protection status. However, Section 15380 of the CEQA Guidelines indicates that these species should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

### **Special-Status Natural Communities**

The CNDDB search identified occurrences of five special-status natural (i.e., plant) communities within five miles of the project area (hereafter referred to as the “project vicinity”): California Walnut Woodland, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Dune Scrub, and Southern Foredunes. No special-status natural communities are present at the project site.

Table C-1: CNPS Special-Interest Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Table C-2: CNDDB Special-Interest Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Abronia villosa</i> var. <i>aurita</i>	<b>Chaparral sand-verbena</b>	US: – CA: 1B CNPS: 1B.1	Sandy areas (generally flats and benches along washes) in chaparral and coastal sage scrub, and improbably in desert dunes or other sandy areas, below 1,600 meters (5,300 feet) elevation. In California, reported from Riverside, San Diego, Imperial, Los Angeles, and Ventura Counties. Believed extirpated from Orange County. Also reported from Arizona and Mexico (Baja California). Plants reported from desert communities are likely misidentified.	Blooms mostly March through August (annual or perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Aphanisma blitoides</i>	<b>Aphanisma</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Sandy or clay soils on slopes or bluffs near the ocean, usually in coastal bluff scrub, coastal dunes, or coastal scrub, below 305 meters (1,000 feet) elevation. Known in California from Ventura, Santa Barbara, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico.	Blooms March through June (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	<b>Ventura marsh milk-vetch</b>	US: FE CA: SE/1B CNPS: 1B.1	Coastal salt marsh within reach of high tide or protected by barrier beaches, or more rarely near seeps on sandy bluffs, below 35 meters (120 feet) elevation. Known only from Santa Barbara and Ventura Counties. Believed extirpated from Los Angeles and Orange Counties.	Blooms June through October (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Atriplex coulteri</i>	<b>Coulter's saltbush</b>	US: – CA: 1B	Alkaline or clay soils in ocean bluffs and ridge tops and alkaline low	Blooms March through October	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
		NCCP: NC CNPS: 1B.2	places in coastal bluff scrub, coastal dunes, coastal sage scrub, and valley and foothill grasslands below 460 meters (1,500 feet) elevation. In California, known only from Los Angeles, Orange, Santa Barbara, San Bernardino, San Luis Obispo, Ventura, and San Diego Counties. Also occurs in Mexico. Reports of this species from Riverside County are based on misidentification of <i>Atriplex serenana</i> ssp. <i> davidsonii</i> ( <i>The Vascular Plants of Western Riverside County, California</i> . F.M. Roberts et al., 2004).	(perennial herb)	habitat is absent on the project site.
<i>Atriplex pacifica</i>	south coast saltscale	US: — CA: 1B NCCP: NC CNPS: 1B.2	Alkali soils in coastal sage scrub, playas, coastal bluff scrub, coastal dunes, and chenopod scrub below 200 meters (600 feet) elevation, and perhaps formerly up to about 430 meters (1,400 feet) in Los Angeles County. In California, known from the Channel Islands and mainland Los Angeles, San Diego and Orange Counties. Also occurs in Mexico. Believed extirpated from Ventura County. Reports of this species from Riverside County are based on misidentification of <i>Atriplex serenana</i> ssp. <i> davidsonii</i> ( <i>The Vascular Plants of Western Riverside County, California</i> . F.M.	Blooms March through October (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
			Roberts et al., 2004).		
<i>Atriplex parishii</i>	<b>Parish's brittlescale</b>	US: – CA: 1B NCCP: NC CNPS: 1B.1	Alkali soils in meadows, vernal pools, chenopod scrub, and playas. Usually on drying alkali flats with fine soils. In California, known from Riverside and San Diego Counties. Also occurs in Mexico. Believed extirpated from Los Angeles, Orange, and San Bernardino Counties.	Blooms June through October (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	<b>Davidson's saltscale</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Alkaline soils in scrub and herbaceous communities from 10 to 460 meters (30 to 1,500 feet) elevation. In California, known only from Los Angeles, Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Also occurs in Mexico.	Blooms April through October (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Calochortus weedii</i> var. <i>intermedius</i>	<b>Intermediate mariposa lily</b>	US: – CA: 1B NCCP: CC CNPS: 1B.2	Dry, open rocky slopes and rock outcrops in chaparral, coastal sage scrub, and grassland, at 105 to 855 meters (340 to 2,800 feet) elevation. Known only from Los Angeles, Orange, Riverside, and San Bernardino Counties, California. In the western Riverside County area, this species is known from the hills and valleys west of Lake Skinner and Vail Lake ( <i>The Vascular Plants of Western</i>	Blooms May through July (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
			<i>Riverside County, California</i> . F.M. Roberts et al., 2004). Appears to intergrade with <i>Calochortus plummerae</i> , which is mostly east and north of Santa Ana Mountains.		
<i>Calystegia felix</i>	<b>Lucky morning-glory</b>	US: – CA: 1B CNPS: 1B.1	Wetland and marshy areas, sometimes alkaline, sometimes artificially watered, from 30 to 215 meters (100 to 700 feet) elevation. All of the known extant occurrences are associated with well-watered landscaping on recently completed industrial, commercial, and residential developments in the City of Chino within a historical area of artesian springs. Older collections are from areas that are now heavily urbanized areas (including one from South Los Angeles and another from Pico Rivera in Los Angeles County). Known to occur only in western San Bernardino County. Presumed extirpated from Riverside and Los Angeles Counties.	Blooms March through September (annual or perennial rhizomatous herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Centromadia parryi</i> ssp. <i>australis</i>	<b>Southern tarplant</b>	US: – CA: 1B NCCP: NC CNPS: 1B.1	In vernal wet areas such as edges of marshes and vernal pools, at edges of roads and trails, and in other areas of compacted, poorly drained, or alkaline soils where competition from other plants is limited, often due to disturbance, below 425 meters (1,400 feet)	Blooms May through November (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
			elevation. In California, known only from Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties. Also occurs in Mexico.		
<i>Chloropyron maritimus</i> spp. <i>maritimus</i>	<b>Salt marsh bird's beak</b>	US: FE CA: SE/1B CNPS: 1B.2	Coastal dunes and salt marshes. In California, known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in vicinity of San Bernardino Valley and from interior San Diego County are intermediate to <i>C. maritimus</i> ssp. <i>canescens</i> . Also occurs in Mexico.	Blooms May through October (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Dudleya multicaulis</i>	<b>Many-stemmed dudleya</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Heavy, often clay soils or around granitic outcrops in chaparral, coastal sage scrub, and grassland below 790 meters (2,600 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties.	Blooms April through July (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Dudleya stolonifera</i>	<b>Laguna Beach dudleya</b>	US: FT CA: ST/1B NCCP: C CNPS: 1B.1	Rocky areas (generally north-facing sandstone cliffs) at 10 to 260 meters (30 to 850 feet) elevation. Known only from Orange County, California near Laguna Beach, with most occurrences in Laguna Canyon west of SR-73.	Blooms May through July (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.



**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Eryngium aristulatum</i> var. <i>parishii</i>	<b>San Diego button-celery</b>	US: FE CA: SE/1B CNPS: 1B.1	Vernal pools and similar mesic habitats in coastal scrub and grassland at 15 to 620 meters (50 to 2,000 feet) elevation. In California, known only from Los Angeles, Orange, Riverside and San Diego Counties. In Riverside County, this species is known only from the Santa Rosa Plateau. Also occurs in Mexico.	Blooms April through June (annual or perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	<b>Los Angeles sunflower</b>	US: — CA: 1A CNPS: 1A	Marshes and swamps (coastal salt and freshwater) at 10 to 500 meters (30 to 1,600 feet) elevation. This species is historically known from Los Angeles, Orange and San Bernardino Counties, California. Last seen in 1937. Presumed extinct. Plants found in 2002 at Castaic Spring along the Santa Clara River in Los Angeles County were initially reported as possibly this taxon, but instead appear to be hybrids or evolutionary intermediates between <i>H. nuttallii</i> and <i>H. californicus</i> , based on chromosome counts and pollen morphology (A Quantitative Analysis of Pollen Variation in Two Southern California Perennial Helianthus (Heliantheae: Asteraceae), J.M. Porter and N. Fraga, 2004).	Blooms August through October (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>	<b>General Habitat Description</b>	<b>Flowering Period</b>	<b>Likelihood of Occurrence on the Project Site and Rationale</b>
<i>Isocoma menziesii</i> var. <i>decumbens</i>	<b>Decumbent goldenbush</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Sandy soils, often in disturbed areas, in coastal scrub and chaparral from 10 to 135 meters (30 to 440 feet) elevation. Known from mainland Orange and San Diego Counties and from San Clemente and Santa Catalina Islands in California. Also occurs in Baja California.	Blooms April through November (shrub)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	<b>Coulter's goldfields</b>	US: – CA: 1B BLM: S CNPS: 1B.1	Vernal pools and alkaline soils in marshes, playas, and similar habitats below 1,220 meters (4,000 feet) elevation. Known from Colusa, Merced, Tulare, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, Tehama, Ventura, and Yolo Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties, and possibly also from Tulare County. Also occurs in Mexico.	Blooms February through June (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Nama stenocarpum</i>	<b>Mud nama</b>	US: – CA: 2B NCCP: NC CNPS: 2B.2	Lake shores, riverbanks, and similar intermittently wet areas at 5 to 500 meters (20 to 1,600 feet) elevation. Known in California from San Diego, Orange, and Riverside Counties and from San Clemente Island. Believed extirpated from Los Angeles and Imperial Counties. Known also from Baja California and Arizona.	Blooms January through July (annual or perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Nasturtium (Rorippa) gambelii</i>	<b>Gambel's watercress</b>	US: FE BLM: – CA: ST/1B CNPS: 1B.1	Marshes from 5 to 330 meters (20 to 1,100 feet) elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo Counties. There are historical records from Los Angeles, Orange, and San Bernardino Counties. A historical report from San Diego County likely constitutes a misidentification. Also occurs in Baja California.	Blooms April through September	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Navarretia prostrata</i>	<b>Prostrate vernal pool navarretia</b>	US: – CA: 1B CNPS: 1B.1	Vernal pools, usually alkaline, from 15 to 1,210 meters (50 to 4,000 feet) elevation. Known only from Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Benito, San Diego, and San Luis Obispo Counties. Presumed extirpated from San Bernardino County.	Blooms April through July (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	<b>Coast woolly-heads</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Sandy places such as coastal dunes below 100 meters (300 feet) elevation. Known in California from Orange, Los Angeles, and San Diego Counties. Believed extirpated from Santa Catalina Island. Also occurs in Mexico.	Blooms April through September (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Orcuttia californica</i>	<b>California Orcutt grass</b>	US: FE CA: SE/1B BLM: – CNPS: 1B.1	Vernal pools from 15 to 660 meters (50 to 2,200 feet) elevation. In California, known from Los Angeles, Ventura, Riverside, and San Diego Counties. Also occurs in Mexico.	Blooms April through August (annual grass)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Pentachaeta lyonii</i>	<b>Lyon's pentachaeta</b>	US: FE CA: SE/1B CNPS: 1B.1	Clay soils in edges of openings in fire-adapted coastal sage scrub and chaparral on saddles between hills, on the tops of small knolls, or in flat areas at the base of slopes, particularly where soil crust results in less competition from annual grasses, from 30 to 630 meters (100 to 2,100 feet) elevation. Occurs only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. Based on historical records, it once occurred on the Palos Verdes Peninsula and on Santa Catalina Island, but has not been seen at these locations since 1910 and 1855, respectively, and is assumed to be extirpated from those areas.	Blooms March through August (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Phacelia stellaris</i>	<b>Brand's star phacelia</b>	US: — CA: 1B CNPS: 1B.1	Dunes and sandy openings in coastal scrub communities at 5 to 400 meters (20 to 1,300 feet) elevation. In western Riverside County, this species appears to be restricted to sandy washes and benches in alluvial floodplains. Known only from Los Angeles (believed extirpated), Riverside and San Diego Counties, California. The most recent record of this species from Los Angeles County was in 1943.	Blooms March through June (annual herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Ribes divericatum</i> var. <i>parishii</i>	<b>Parish's gooseberry</b>	US: – CA: 1A CNPS: 1A	Deciduous shrub of willow swales in riparian habitats at 60 to 300 meters (200 to 1,000 feet) elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties.	Blooms February through April	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Sagittaria sanfordii</i>	<b>Sanford's arrowhead</b>	US: – CA: 1B CNPS: 1B.2	Marshes and swamps below 650 meters (2,100 feet) elevation. Occurs in standing or slow-moving fresh water (ponds, marshes, and ditches). Known only from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Placer, Sacramento, Shasta, San Joaquin, and Tehama Counties. Believed extirpated from Southern California.	Blooms May through October (perennial emergent herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Sidalcea neomexicana</i>	<b>Salt Spring checkerbloom</b>	US: – CA: 2B NCCP: NC ECMSCP: – CNPS: 2B.2	Alkaline springs and brackish marshes below 1,530 meters (5,000 feet) elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico.	Blooms March through June (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
<i>Suaeda esteroa</i>	<b>Estuary seablite</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Coastal salt marshes below 5 meters (15 feet) elevation. Occurs along immediate coast from Santa Barbara County to Baja California.	Blooms May through October (January) (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

**Table D-1: CNPS Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Scientific Name	Common Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
<i>Symphotrichum defoliatum</i>	<b>San Bernardino aster</b>	US: – CA: 1B NCCP: NC CNPS: 1B.2	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 meters (6,700 feet) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. In the western Riverside County area, this species is scarce, and documented only from Temescal and San Timoteo Canyons ( <i>The Vascular Plants of Western Riverside County, California</i> . F.M. Roberts et al., 2004).	Blooms July through November (perennial herb)	<b>Not Expected.</b> There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

<sup>1</sup> Project vicinity = project site plus a 5-mile buffer

Status: Federal Endangered (FE), Federal Threatened (FT), Federal Candidate (FC), Federal Proposed (FP, FPE, FPT), Federal Delisted (FD), California Endangered (CE), California Threatened (CT), California Species of Special Concern (SSC), California Fully Protected Species (CFP), California Special Plant (CSP), California Special Animal (CSA), NCCP Identified Species (IS), NCCP Target Species (TS), NCCP Conditionally Covered Species (CCS), S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure

**CNPS Designations:**

1B = Rare threatened, or endangered in California and elsewhere

2B = Rare, threatened, or endangered in California, but not elsewhere

3 = Not very endangered in California

4 = Plants of Limited Distribution – Watch List

**Abbreviation/Acronym Definitions:**

CA = California

CNDDDB = California Natural Diversity Database

CNPS = California Native Plant Society

ft = foot/feet

US = United States

**Table D-2: CNDDDB Special-Status Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Species	Status	Habitat and Distribution	Sample Occurrence Probability
<b>Plants</b>			
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>  <b>Ventura marsh milk-vetch</b>	US: FE CA: SE/1B	Coastal salt marsh within reach of high tide or protected by barrier beaches, or more rarely near seeps on sandy bluffs, below 35 meters (120 feet) elevation. Known only from Santa Barbara and Ventura Counties. Believed extirpated from Los Angeles and Orange Counties.	<b>Absent.</b> No salt marshes or sandy bluffs on site.
<i>Chloropyron maritimum</i> spp. <i>maritimum</i>  <b>Salt marsh bird's-beak</b>	US: FE CA: SE/1B	Coastal dunes and salt marshes. In California, known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in vicinity of San Bernardino Valley and from interior San Diego County are intermediate to <i>C. maritimum</i> ssp. <i>canescens</i> . Also occurs in Mexico.	<b>Absent.</b> No coastal dunes or marshes on site.
<i>Eryngium aristulatum</i> var. <i>parishii</i>  <b>San Diego button-celery</b>	US: FE CA: SE/1B MSHCP: C	Vernal pools and similar mesic habitats in coastal scrub and grassland at 15 to 620 meters (50 to 2,000 feet) elevation. In California, known only from Los Angeles, Orange, Riverside and San Diego Counties. In Riverside County, this species is known only from the Santa Rosa Plateau. Also occurs in Mexico.	<b>Absent.</b> No vernal pools on site.
<i>Nasturtium (Rorippa) gambelii</i>  <b>Gambel's watercress</b>	US: FE BLM: – CA: ST/1B	Marshes from 5 to 330 meters (20 to 1,100 feet) elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo Counties. There are historical records from Los Angeles, Orange, and San Bernardino Counties. A historical report from San Diego County likely constitutes a misidentification. Also occurs in Baja California.	<b>Absent.</b> No marshes on site.
<i>Orcuttia californica</i>  <b>California Orcutt grass</b>	US: FE CA: SE/1B BLM: – MSHCP: S	Vernal pools from 15 to 660 meters (50 to 2,200 feet) elevation. In California, known from Los Angeles, Ventura, Riverside, and San Diego Counties. Also occurs in Mexico.	<b>Absent.</b> No vernal pools on site.
<i>Pentachaeta lyonii</i>  <b>Lyon's pentachaeta</b>	US: FE CA: SE/1B	Clay soils in edges of openings in fire-adapted coastal sage scrub and chaparral on saddles between hills, on the tops of small knolls, or in flat areas at the base of slopes, particularly where soil crust results in less competition from annual grasses,	<b>Absent.</b> Site is not within species range.

**Table D-2: CNDDDB Special-Status Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Species	Status	Habitat and Distribution	Sample Occurrence Probability
		from 30 to 630 meters (100 to 2,100 feet) elevation. Occurs only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. Based on historical records, it once occurred on the Palos Verdes Peninsula and on Santa Catalina Island, but has not been seen at these locations since 1910 and 1855, respectively, and is assumed to be extirpated from those areas.	
<b>Invertebrates</b>			
<i>Bombus crotchii</i> <b>Crotch bumble bee</b>	US: – CA: SA BLM: –	Nectars on Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum in coastal California east to the Sierra-Cascade crest and south into Mexico.	<b>Absent.</b> No suitable vegetation on site.
<i>Branchinecta sandiegonensis</i> <b>San Diego fairy shrimp</b>	US: FE CA: SA BLM: – NCCP: CC	Small, shallow (usually less than 30 centimeters deep), relatively clear but unpredictable vernal pools on coastal terraces. Pools must retain water for a minimum of 13 days for this species to reproduce (3 to 8 days for hatching, and 10 to 20 days to reach reproductive maturity). Known from Orange and San Diego Counties, and Baja California.	<b>Absent.</b> No vernal pools on site.
<i>Euphydryas editha quino</i> <b>Quino checkerspot butterfly</b>	US: FE CA: SA BLM: – MSHCP: C	Meadows or openings within coastal sage scrub or chaparral below about 5,000 feet where food plants (Plantago erecta and/or Orthocarpus purpurascens) are present. Historically known from Santa Monica Mountains to northwest Baja California; currently known only from southwestern Riverside County, southern San Diego County, and northern Baja California.	<b>Absent.</b> No suitable vegetation (coastal sage scrub or chaparral).
<i>Streptocephalus woottoni</i> <b>Riverside fairy shrimp</b>	US: FE CA: SA BLM: – MSHCP: S NCCP: CC	Warm-water vernal pools (i.e., large, deep pools that retain water into the warm season) with low to moderate dissolved solids, in annual grassland areas interspersed through chaparral or coastal sage scrub vegetation. Suitable habitat includes some artificially created or enhanced pools, such as some stock ponds, that have vernal pool like hydrology and vegetation. Known from areas within about 50 miles of the coast from Ventura County south to San Diego County and Baja California.	<b>Absent.</b> No vernal pools on site.



**Table D-2: CNDDB Special-Status Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Species	Status	Habitat and Distribution	Sample Occurrence Probability
<b>Fish</b>			
<i>Oncorhynchus mykiss irideus</i> <b>Southern steelhead - Southern California</b>	US: FE CA: SA BLM: –	Federal listing refers to runs in coastal basins from the Santa Maria River, south to the southern extent of the range (presently considered to be Malibu Creek. Proposed rulemaking 12/19/2000 to extend southern portion of the range to San Mateo.	<b>Absent.</b> No streams on site.
<b>Reptiles</b>			
<i>Chelonia mydas</i> <b>green turtle</b>	US: FT CA: -	Marine. Completely herbivorous; needs adequate supply of seagrasses and algae.	<b>Absent.</b> No suitable habitat on site.
<b>Birds</b>			
<i>Agelaius tricolor</i> (nesting colony) <b>Tricolored blackbird</b>	US: – CA: ST/SSC (breeding) BLM: S MSHCP: C NCCP: C	Open country. Forages in grassland and cropland habitats. Nests in large groups near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, or tall herbs. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs. Occurs in western Oregon, California, and northwestern Baja California.	<b>Absent.</b> No suitable wet areas or other habitat on site.
<i>Buteo swainsoni</i> (nesting) <b>Swainson's hawk</b>	US: – CA: ST BLM: S MSHCP: C	Open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Breeds and nests in western North America; winters in South America. Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. In Southern California, now mostly limited to spring and fall transient. Formerly abundant in California with wider breeding range.	<b>Absent.</b> Site is in urban setting without adjacent open country.

**Table D-2: CNDDB Special-Status Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Species	Status	Habitat and Distribution	Sample Occurrence Probability
<i>Charadrius alexandrinus nivosus</i> (nesting) <b>Western snowy plover</b>	US: FT (coastal population) CA: SSC BLM: –	Sandy coastal beaches, lakes, alkaline playas. Scattered locations along coastal California and Channel Islands, inland at Salton Sea and at various alkaline lakes.	<b>Absent.</b> No suitable habitat on site.
<i>Coccyzus americanus occidentalis</i> (nesting) <b>Western yellow-billed cuckoo</b>	US: FT CA: SE BLM: S MSHCP: S	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America.	<b>Absent.</b> No riparian habitat on site.
<i>Empidonax traillii extimus</i> <b>Southwestern willow flycatcher</b>	US: FE CA: SE BLM: – MSHCP: S	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 feet elevation.	<b>Absent.</b> No extensive stands of riparian habitat on site.
<i>Laterallus jamaicensis coturniculus</i> <b>California black rail</b>	US: – CA: ST/CFP BLM: S	Requires shallow water in salt marshes, freshwater marshes, wet meadows, or flooded grassy vegetation. Prefers areas of moist soil vegetated by fine-stemmed emergent plants, rushes, grasses, or sedges, with scattered small pools. Known from coastal California, northwestern Baja California, the lower Imperial Valley, and the lower Colorado River of Arizona and California. Now extirpated from virtually all of coastal Southern California.	<b>Absent.</b> No salt marshes, freshwater marshes, wet meadows, or flooded areas on site.
<i>Passerculus sandwichensis beldingi</i> <b>Belding's savannah sparrow</b>	US: – CA: SE BLM: –	Resident in salt marshes, with rare exception (e.g., Islas Todos Santos, Baja California), of Pacific Coast from Santa Barbara County to Baja California.	<b>Absent.</b> No suitable habitat on site.
<i>Polioptila californica californica</i> <b>Coastal California gnatcatcher</b>	US: FT CA: SSC BLM: – MSHCP: C NCCP: C	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 500 meters (1,640 feet) elevation in cismontane southwestern California and Baja California.	<b>Absent.</b> No suitable coastal sage scrub on site.
<i>Rallus obsoletus levipes</i> <b>light-footed Ridgway's rail</b>	US: FE CA: SE	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover; feeds on molluscs and crustaceans.	<b>Absent.</b> No suitable habitat on site.

**Table D-2: CNDDDB Special-Status Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity**

Species	Status	Habitat and Distribution	Sample Occurrence Probability
<i>Riparia riparia</i> (nesting)  <b>Bank swallow</b>	US: – CA: ST BLM: S	Nesting habitat is vertical banks of fine textured soils, most commonly along streams and rivers. In Southern California, fairly common spring and fall transient in interior; very uncommon spring transient and rare fall transient along coast. Casual in winter.	<b>Absent.</b> No streams and rivers on site.
<i>Sternula antillarum browni</i> (nesting colony)  <b>California least tern</b>	US: FE CA: SE/CFP BLM: –	Nests along the coast from San Francisco Bay south to northern Baja California. Forages in shallow water. Colonial breeder on bare or sparsely vegetated, flat substrates, sand beaches, alkali flats, land fills, or paved areas.	<b>Absent.</b> No suitable habitat on site.
<i>Vireo bellii pusillus</i>  <b>Least Bell's vireo</b>	US: FE CA: SE BLM: – MSHCP: S NCCP: CC	Riparian forests and willow thickets. The most critical structural component of Least Bell's Vireo habitat in California is a dense shrub layer 2 to 10 feet (0.6–3.0 meter) above ground. Willows usually dominant. Nests from central California to northern Baja California. Winters in southern Baja California.	<b>Absent.</b> No suitable habitat on site.
<b>Mammals</b>			
<i>Perognathus longimembris pacificus</i>  <b>Pacific pocket mouse</b>	US: FE CA: SSC BLM: –	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border. Now known from only four sites in Orange and San Diego Counties.	<b>Absent.</b> Site is highly disturbed, within an urban environment and isolated from better habitat.



## APPENDIX D

# CULTURAL SURVEY RESULTS



**This page intentionally left blank**

## MEMORANDUM

**DATE:** January 21, 2020

**To:** John P. Ramirez, City Planner, City of Cypress

**FROM:** Kerrie Collison, RPA, LSA

**SUBJECT:** Cultural Resources Record Search and Field Survey for the Cypress City Center Project in Cypress, Orange County, California (LSA Project No. SHO1901)

This memorandum presents the results of the cultural resources record search and field survey (study) for the Cypress City Center Project (project) in Cypress, Orange County, California. This study was conducted to do the following: (1) establish the status and extent of previously recorded sites, surveys, and excavations in and adjacent to the project area; and (2) note what site types might be expected to occur within the project site based on the existing data from archaeological sites located within 0.25 mile of the project site. All work for this study has been completed per the requirements of the California Environmental Quality Act of 1970 (CEQA).

### PROJECT LOCATION AND DESCRIPTION

The approximately 13-acre project site is depicted on the United States Geological Survey (USGS) *Los Alamitos, California* 7.5-minute topographic quadrangle map in Section 28 of Township 4 South, Range 11 West, San Bernardino Baseline and Meridian (USGS 1981; see Attachment B, Figure 1, Project Location and Vicinity). The project site is at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently a paved parking lot (see Attachment B, Figure 2, Project Area).

The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed off-site improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Project-related ground disturbance is expected to reach a maximum depth of 15 feet.

### RECORD SEARCH

On January 9, 2020, LSA Archaeologist Aaron McCann conducted a record search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. The SCCIC, an affiliate of the California Office of Historic Preservation (OHP), is the official repository of cultural resources records and reports for Orange County. The record search included a review of all

recorded historic-period and prehistoric cultural resources within a 0.25-mile radius of the project site, as well as a review of known cultural resources survey and excavation reports. The record search also included a review of the following State and federal inventories:

- Directory of Properties in the Historic Property Data File (OHP 2012). The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.
- California Historical Landmarks (OHP 1996).
- California Points of Historical Interest (OHP 1992).
- *Five Views: An Ethnic Historic Site Survey for California* (OHP 1988).
- California Inventory of Historic Resources (OHP 1976).

### Record Search Results

The record search results indicate that one cultural resources study (OR-02162, a field survey) has been conducted that includes the project site. Three additional cultural resources studies have been conducted that include the 0.25-mile radius of the project site. These three studies include two surveys and one railroad abandonment study.

As a result of previous cultural resource studies, no historic-period or prehistoric cultural resources have been recorded within the project site. One cultural resource (P-30-176854, the historic-period Navy Golf Course in Seal Beach) has been recorded within 0.25 mile of the project site. Site P-30-176854 is located approximately 0.25 mile southeast of the project site and, as such, will not be impacted by project-related construction activities. None of the examined inventories contained entries for the project site.

### ADDITIONAL BACKGROUND RESEARCH

Online aerial photographs were also reviewed for this project (NETR 2020).

#### Additional Background Research Results

The earliest aerial photograph of the project site available online dates to 1952, at which time the project site consisted of plowed fields. The project site remained relatively unchanged until the years between 1972 and 1994, when the area appears to have been paved and used for a parking lot. The project site continues to be used as a paved parking lot to this day.

### FIELD SURVEY

On January 14, 2020, LSA Archaeologist Ivan Strudwick conducted an archaeological pedestrian field survey of the project site by walking transects spaced approximately 5 meters in unpaved portions of the project site.

## Field Survey Results

The field survey results confirmed that the project site is currently utilized as a mostly-paved parking lot and is level. Portions of the project site that are not paved are located along the southern edge of the project site and the southern portion of the western side of the project site. In these areas, ornamental vegetation (such as shrubbery, ice plant, and grass) grows on constructed (not natural) berms that range from approximately 2 to 5 feet high. Exposed sediments of the berms (red/brown silty loam alluvium) were examined for the presence of cultural resources; none were observed.

## SUMMARY AND RECOMMENDATIONS

The record search results for this project indicate that no previously recorded resources exist within the project site and that one previous cultural resources study (a survey) has included the project site. One cultural resource (P-30-176854, the historic-period Navy Golf Course in Seal Beach) has been recorded within 0.25 mile of the project site. Site P-30-176854 is located approximately 0.25 mile southeast of the project site and, as such, will not be impacted by project-related construction activities.

The archaeological pedestrian field survey did not identify any surficial archaeological cultural deposits within the project site. Surficial geologic mapping indicates that the project site contains Young Alluvial Fan Deposits, Unit 2, which are Holocene to late Pleistocene in age (less than 126,000 years ago) and consist of poorly to moderately consolidated clay, silty clay, and sand (Saucedo et al. 2016). These deposits would have been eroded from higher elevations, carried by flooding streams and debris flows. As such, any artifacts that may be identified in surficial deposits are likely not in their original locations. Additionally, the project site is located within floodplains of rivers and creeks, which are subject to erosion from seasonal flooding. As a result of this seasonal flooding, the floodplain containing the project site would not have been conducive to the accumulation and preservation of intact archaeological cultural deposits.

For the above reasons, there is a low likelihood of encountering buried archaeological deposits during ground-disturbing construction activities. However, there is always a possibility that isolated archaeological cultural resources may be encountered during construction activities. For this reason, LSA recommends that a qualified professional archaeologist provide cultural resources awareness training to construction personnel prior to the commencement of ground-disturbing activities. This training should be in the form of a presentation and handout describing the types of possible archaeological deposits that may be encountered during construction activities; and the procedures that should be used in the event of inadvertent discoveries of cultural resources during construction.

LSA also recommends that a qualified professional archaeologist be retained on an on-call basis and be contacted in the event that construction personnel encounter any archaeological deposits and/or human remains during construction activities. If any such resources are discovered, contractors should stop work in the immediate area of the find and contact the retained archaeologist to assess the nature of the find. Upon completion of any monitoring activities, the archaeologist should prepare a report to document the methods and results of monitoring activities. This report should be submitted to the SCCIC.



If human remains are encountered, the regulatory process outlined in California Health and Safety Code Section 7050.5 must be followed, which involves coordination with the Native American Heritage Commission (NAHC) and a Native American Most Likely Descendant.

If you have any questions concerning the content or the intent of this memorandum, please contact me at [kerrie.collison@lsa.net](mailto:kerrie.collison@lsa.net).

Attachments: A – References  
B – Figures 1 and 2  
C – Record Search Results Summary Lists

## ATTACHMENT A

### REFERENCES

#### California Office of Historic Preservation (OHP)

- 1976 California Inventory of Historic Resources. California Department of Parks and Recreation, Sacramento.
- 1988 *Five Views: An Ethnic Historic Site Survey for California*. California Department of Parks and Recreation, Sacramento.
- 1992 California Points of Historical Interest. California Department of Parks and Recreation, Sacramento.
- 1996 California Historical Landmarks. California Department of Parks and Recreation, Sacramento.
- 2012 Directory of Properties in the Historic Property Data File. California Department of Parks and Recreation, Sacramento. April 5.

#### National Environmental Title Research (NETR)

- 2020 Historic Aerials. Website: <http://www.historicaerials.com> (accessed January 8, 2020).

#### Saucedo, George J., H. Harry Greene, Michael P. Kennedy, and Stephen P. Bezore

- 2016 Geologic Map of the Long Beach 30-minute by 60-minute Quadrangle, California. Version 2.0. Prepared by the California Geological Survey in Cooperation with the United States Geological Survey (USGS). Map Scale 1:100,000.

#### United States Geological Survey (USGS)

- 1981 *Los Alamitos, California* 7.5-minute topographic quadrangle. Prepared in 1964. Photorevised in 1981. USGS, Denver, Colorado.

## **ATTACHMENT B**

### **FIGURES 1 AND 2**



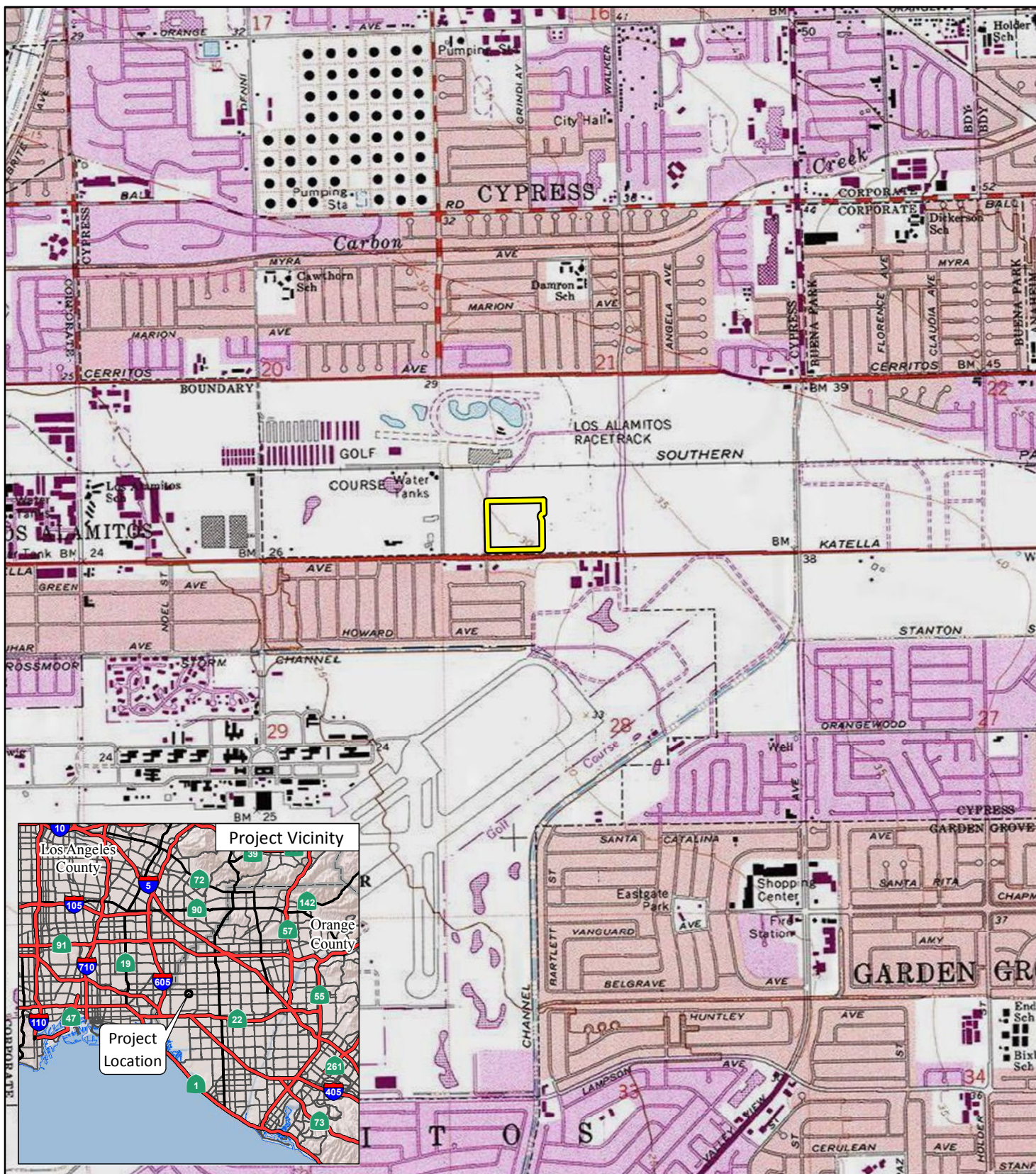


FIGURE 1

LSA

LEGEND

 Project Site



0 1000 2000  
FEET

SOURCE: USGS 7.5' Quad - Los Alamitos, CA (1981)

I:\SHO1901\GIS\MXD\ProjectLocationVicinity.mxd (12/3/2019)

Cypress City Center Project  
Project Location and Vicinity





FIGURE 2

LSA

LEGEND

 Project Site



0 200 400  
FEET

SOURCE: Google (2018)

I:\SHO1901\GIS\MXD\ProjLoc\_Aerial.mxd (12/18/2019)

Cypress City Center Project  
Project Area

---

## ATTACHMENT C

### RECORD SEARCH RESULTS SUMMARY LISTS

## Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-01732	Paleo -	1998	Bissell, Ronald M.	Cultural and Paleontological Study in Support of Irrigation Improvements to the Navy Golf Course, Weapons Support Facility Command, Los Alamitos Armed Forces Reserve Center, Orange County, California	RMW Paleo Associates, Inc.	30-179863
OR-02162		2000	Brown, Joan C.	Cultural Resources Reconnaissance for the Cottonwood Christian Center Additional Study Area, Los Alamitos, Orange County	RMW Paleo Associates, Inc.	
OR-02163		2000	Brown, Joan C.	Cultural Resources Reconnaissance for the Cottonwood Christian Center, Los Alamitos, Orange County	RMW Paleo Associates, Inc.	
OR-04001		1998	Anthofer, Joseph and Regier, Jeanna	Union Pacific Railroad Company, Abandonment and Discontinuance Exemption, in Orange County, CA (Los Alamitos Branch) Combined Environmental and Historic Report	Union Railroad Company	

## Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-176854		Resource Name - Naval Weapons Station, Navy Golf Course; Other - zip 90740	Building, Structure	Historic	HP34 (Military property)	1998 (Bunse, Meta and Theresa Rogers, JRP Historical Consulting Services)	OR-03175





## APPENDIX E

# GEOTECHNICAL ASSESSMENT AND PALEONTOLOGICAL MEMORANDUM



**This page intentionally left blank**

June 13, 2019

Project No. 19046-01

To: Shea Properties  
130 Vantis, Suite 200  
Aliso Viejo, California, 92656

Attention: Mr. Rick Rutecki, Vice President of Commercial Construction

Subject: Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California

## INTRODUCTION

In accordance with your request and authorization, NMG Geotechnical, Inc. (NMG) has performed a geotechnical feasibility study for the subject mixed-use development site in the City of Cypress, California. The approximately 13-acre site, located on the northeastern corner of Siboney Street and Katella Avenue, is currently a vacant lot covered primarily with mature asphalt pavement. The primary purpose of our study was to provide a summary of the geologic and geotechnical conditions of the site, along with an evaluation of the feasibility of the project with respect to geotechnical constraints. From these data, this report provides preliminary design recommendations to be used for your development cost estimating.

The site geologic conditions include the following:

- Predominantly silty and sandy soils in the upper 2 to 10 feet with relatively low expansion potentials;
- Compressible clayey and silty alluvium with some sand layers below 10 feet;
- Shallow groundwater;
- Located in a mapped liquefaction hazard zone;
- Not located within an Alquist-Priolo Fault Zone;
- No mapped faults in the immediate site area; and
- Subject to seismic shaking resulting from earthquakes produced by nearby active faults.

Seismic shaking, potential liquefaction induced ground settlement/deformation, shallow groundwater, and settlement of the heavier structures planned at the site are the primary geotechnical design constraints. Some type of ground improvement, such as rammed aggregate piers or stone columns, will significantly mitigate these constraints. Groundwater and wet soil conditions will require proactive measures during grading and construction of underground infrastructure. Based on our review, we conclude that the subject property is feasible for the planned development from a geotechnical viewpoint provided the recommendations herein are utilized during design and implemented during grading and construction.

## **ATTACHMENTS**

Figure 1 - Site Location Map – Rear of Text

Figure 2 - Boring, Well and CPT Location Map – Rear of Text

Appendix A - References

Appendix B - Boring and CPT Logs

Appendix C - Laboratory Test Results

Appendix D - Liquefaction Analysis

## **SCOPE OF SERVICES**

Our scope of services for this study included the following:

- Research and review of in-house data (referenced in Appendix A) and our recent experience of this locale pertaining to the geologic conditions in the vicinity of the project, including underlying soil types, recent and historic groundwater levels, and grading impacts of saturated soil;
- Review of historic, site-specific project geotechnical reports related to prior studies at the site (referenced in Appendix A);
- Archive search for prior geotechnical reports through the City of Cypress;
- Site reconnaissance to observe existing conditions, locate existing groundwater observation wells and obtain current groundwater data;
- Observation and measurement of groundwater level in open excavation at construction site on the south side of Katella across from the subject site;
- Review of available online historic aerial photographs and topographic maps dating back to 1927;
- Obtaining a groundwater well permit from the County of Orange;
- Excavation of 5 small-diameter borings (one hollow-stem-auger boring to 20 feet below ground surface (bgs) and four hand-augered borings to 5 feet bgs). Disturbed bulk soil samples were collected from the upper 5 feet of each boring. After hand-augering the upper 5 feet, the deeper boring (OW-1) was excavated with a truck-mounted drill rig. Soil was sampled at select intervals using a California-type, split-spoon sampler with 2.5-inch-diameter brass rings, driven with a 140-pound automatic hammer dropping 30 inches. Resistance to driving was recorded in blows per foot and is shown on the boring logs in Appendix B. The drill rig was also used to collect ring samples from the bottom of the four hand-excavated borings.
- Collection of bulk soil samples and relatively undisturbed soil samples in the five borings;
- Laboratory testing of selected soil samples for classification and engineering properties;
- Conversion of the 20 foot boring (OW-1) to a groundwater observation well;
- Evaluation of site seismicity;

- Liquefaction analyses using cone penetrometer (CPT) data from a prior study (Leighton, 2017);
- Seismic settlement analysis;
- Static settlement analysis of planned major structures using the above mentioned CPT test results, along with assumed typical foundation loads;
- Review of ground improvement alternatives, including proposal from Western Ground Improvement;
- Preparation of this report summarizing our findings, conclusions and recommendations.

The approximate location of the borings excavated for this study and the three groundwater observation wells are shown on Figure 2, Boring, Well and CPT Location Map, at rear of text. The CPT soundings used in our settlement and liquefaction analyses are also shown on that figure. The CPT logs are included in Appendix B and the liquefaction analysis and settlement analyses from the CPT data are included in Appendix D.

## **SITE DESCRIPTION**

The subject site is located just south of the Los Alamitos Race Track in the city of Cypress, California. Specifically, the site is bounded by Winners Circle street on the east, a large asphalt parking area to the north, Siboney Street on the west and Katella Avenue on the south. The site location is shown on Figure 1, Site Location Map.

The site is currently vacant and used for event parking. Temporary parking of trucks and trailers for a commercial business on a portion of the site (southwestern quadrant) was also observed during this study. Most of the site is covered by older degraded asphalt, with a small unpaved dirt area adjacent to the terminus of Winners Circle (cul-du-sac). The south and southwestern boundaries of the site along Katella Avenue consist of some landscaping, including mature eucalyptus trees, shrubs, and turf. There are existing light poles and various electrical utility boxes and lines within the site. The site is drained by two sets of drainage ditches that flow south toward storm drain grates that flow into underground storm drain pipes. A water main valve is present along Siboney Street near the southwest corner of the site. There are two groundwater observation wells which were installed by an unknown party sometime before 2008, during a previous investigation (GPI, 2008). Also, NMG recently installed a groundwater observation well in the southwest quadrant of the site.

## PROPOSED DEVELOPMENT

The conceptual site plan (Option 1) by Architects Orange shows a mixed-use development with the following:

- A rectangular-shaped four-story hotel approximately 50 to 60 feet wide by 300 feet long at the southwest corner;
- Three stand-alone retail buildings ranging from 5,000 to 7,000 square feet each at the southeast corner; a 842-seat theater at the northeast corner;
- A four-story multi-family residential wrap-type structure roughly 380 feet by 370 feet, including an internal five-story parking structure, pool and two open court yard areas.

These proposed buildings are connected with pedestrian walkways and parking areas. Vehicular access to the site will be from multiple entry points off Katella Avenue (one), Siboney Street (two), and Winner's Circle (two off the cul-du-sac).

The preliminary grading plan by the project civil engineer, Kimley-Horn, shows large areas of fill on the order of 1 to 1.5 feet thick above existing elevations. Existing 4- to 5-foot-high berms along Katella Avenue and Siboney Street will be removed during grading.

We understand that an onsite below-ground storm water retention system, such as a Contech corrugated metal pipe system (8-foot-diameter pipes), will be required. The preliminary sizing of this system is on the order of 90 feet wide and over 300 feet long.

## SITE HISTORY

Historic aerial photographs of the vicinity show that the subject site was used for agriculture prior to 1962. A ranch house, approximately ¼ mile to the west, was constructed in 1931. Plow rows can also be seen within the site as early as 1927. In 1947, a small horse-racing track was constructed near the ranch house. In 1953, a large horse-racing track was being constructed just north of the site. In 1963, the racetrack was completed, and the site was paved and used as a parking area for the track. During this time, residential neighborhoods were also constructed south of the site. By 1972, the horse race track had moved slightly to its current location. By 1994, Siboney Street was extended toward the race track and marked the western boundary of the site. The existing landscaped areas were also present by this time. By 2002, Winner's Circle was constructed, marking the eastern boundary of the site. By 2005, the retail buildings on the west of the subject site were constructed. The Costco store on the east was also being constructed in 2005. Since 2005, the site has remained in the same condition as present day.

## PRIOR GEOTECHNICAL STUDIES

Available reports of prior geotechnical investigations of the subject site include those by Geotechnical Professionals, Inc., in 2008, and later by Leighton and Associates for potential commercial land developers in 2017 and 2019. A summary of these studies is provided below:

- The 2008 study evaluated the site for a potential retail development. It included subsurface exploration consisting of 10 CPTs to 50 feet and 8 hollow-stem borings up to 31.5 feet deep. Laboratory testing was performed on samples collected from the borings. They also measured groundwater levels in the borings and reported the existence of two previously installed groundwater monitoring wells (no origin given). The report provided recommendations for the retail development planned at that time (GPI, 2008).
- The 2017 study was performed to assist in a due diligence review for a different commercial development. The subsurface exploration consisted of 12 CPTs to 50 feet and shallow hand excavations for near-surface soil sampling. Limited laboratory testing was performed on those bulk soil samples. The report provided recommendations for the commercial development planned at that time (Leighton, 2017).
- The geotechnical study in 2019 was performed to evaluate a different potential retail development. This study included 8 new CPTs to 50 feet and 9 hollow-stem borings up to 53 feet deep. Laboratory testing was performed on samples collected from the borings. They also measured groundwater levels in the borings. The report provided recommendations for the retail development planned at that time (Leighton, 2019).

Additional studies and associated reports may exist but they were not discovered during this study. NMG explored and graded the Lyon Homes project currently being constructed near the subject site (NMG, 2017a, 2017b, 2018a, 2018b, 2018c). A list of these and other references are included in Appendix A.

## SUMMARY OF GEOTECHNICAL CONDITIONS

**Regional Geologic Setting:** The subject site is located within the Downey Plain, a sub-basin of the larger Los Angeles basin. The site is underlain by approximately 100 feet of Holocene sediments and a total of approximately 2,600 feet of Quaternary sediments (CDMG, 1980).

**Earth Units and Soil Characteristics:** Below the asphalt pavement, prior studies reported between 2 to 9 feet of undocumented artificial fill consisting of moist to wet, moderately to poorly compacted sand, silty to clayey sands and silty clays. Borings across the site indicate the undocumented fill is generally 2 to 5 feet thick with dry densities in the upper 5 feet over 100 pcf (only one test of 98 pcf and one as high as 114 pcf). The deepest undocumented fill appears to be in the southeast corner of the site where two borings encountered 7 to 9 feet of fill. The boring logs reported fragments of fabric, asphalt, brick, concrete and clay pipe (GPI, 2008 and Leighton, 2019). The underlying alluvium consists of similar materials: sands, and silts to 10 feet below ground surface (bgs), and silty clays and clay with thin sand layers from 10 to 30 feet. The alluvial material was described as moist to wet and medium dense/stiff to firm. Significant sand

layers were observed below 30 feet interlayered with the silty clay and clay. The near-surface soil (undocumented fill) is predominantly silty and sandy.

Moisture contents of soil at 5 feet bgs ranged from 20.8 to 26.9 percent. Dry densities ranged from 92.0 to 102.7 pcf. Four expansion index tests for this study resulted in "very low" potentials. Soluble sulfate contents were in the "S0" category (negligible). Two R-value tests had R-values of 16 and 60. Test results are included and summarized in Appendix C and the boring logs are included in Appendix B.

Settlement analyses using prior CPT data resulted in static settlements on the order of 2 to 3 inches for shallow foundations with assumed typical structural loads for the proposed buildings. In addition, seismically induced settlements were calculated to be on the order of 1 to 3 inches.

**Existing Asphalt Section:** Existing asphalt concrete (AC) and aggregate base (AB) was observed in three of the five borings for this study. AC thicknesses ranged from 2 to 3 inches and the AB layer was approximately 2 inches thick.

At the two other boring locations, the existing pavement was so deteriorated that there were no distinct AC or AB sections. Prior borings by others did not report any AC or AB thicknesses.

**Groundwater:** Groundwater at the site is very shallow, ranging from approximately 4½ to 6 feet bgs as measured on April 16, 2019 in two groundwater monitoring wells (MW-1 and MW-2) located onsite (Figure 1). In addition, we measured groundwater at approximately 6 feet BGS in an open trench at the construction site on the southwest corner of Katella Avenue and Winners Circle on April 16, 2019. These measured levels are consistent with the prior study by GPI in 2008, where they measured very similar depths, and NMG's recent subsurface exploration and grading experience (2017 through 2019) at the Ovation Flora Park development located ¼ mile to the west, where we encountered groundwater as shallow as 3½ feet bgs. Also, Geotracker data from sites near the subject property have reported groundwater anywhere from 1 to 7 feet bgs in recent years. These recent data indicate that historic high groundwater reported by CGS (approximately 10 feet bgs) is obsolete.

Groundwater level readings for our study from the two existing wells and the newly installed well are summarized below:

Well No.	Approximate Ground Elevation in Feet Above msl	Depth to Groundwater (Below Ground Surface)	
		<i>April 16, 2019</i>	<i>May 21, 2019</i>
OW-1	31	--	4.75
MW-1	32	4.6'	4.55'
MW-2	32	5.92'	5.8'

The direction of groundwater flow appears to have a slight gradient toward the south to southwest.



**Seismicity, Faulting, and Seismic Hazards:** Based on background review, no known active faults are located within or immediately adjacent to the subject site, nor is it located within an Alquist-Priolo Fault Rupture Hazard Zone (CGS, 2007). Therefore, the potential for primary ground rupture is considered very low at the site.

The site is mapped by the State of California as having potentially liquefiable soil (CGS, 1998). Leighton reported a PGA of 0.55 at the site with a seismic category of D according to their draft report. The primary seismic hazard at the subject site is ground shaking due to a future earthquake on one of the major regional active faults and potential ground deformation due to liquefaction.

Using the USGS de-aggregation computer program (USGS, 2017) and the site coordinates of 33.804 degrees north latitude and 118.042 degrees west longitude, the closest major active faults to the site are the Newport-Inglewood Fault, approximately 4.6 miles southwest of the site, and the Puente Hills Blind-Thrust Fault (Coyote Hills) located 6.1 miles northeast of the site, at depth.

The site is not located within a zone of earthquake induced landslide as mapped by the (CGS, 1998).

Tsunami and seiche are not considered secondary seismic hazards at this site due to the elevation and location.

**Historic Seismicity:** Based on the Environmental Geology of Orange County California (CDMG, 1976), there were reports of water/sand boils, earth and pavement cracks in the city of Cypress and surrounding cities during the March 10, 1933, Long Beach earthquake. Seismic settlement (induced subsidence) from this earthquake was measured to be approximately 0.5 inch through Los Alamitos, Cypress, and La Habra (CDMG, 1976). This earthquake occurred along the Newport-Inglewood Fault system.

**Storm Water Treatment/Storage:** The subject site is underlain by relatively fine sands, silts and clays in the upper 20 feet, with low permeabilities and shallow groundwater ranging from 4½ to 6 feet bgs. Therefore, the site is not suitable for storm water infiltration systems.

Underground treatment and/or storage systems must account for hydrostatic uplift (buoyant) forces due to the shallow groundwater.

## **CONCLUSIONS AND GENERAL RECOMMENDATIONS**

Based on our feasibility-level study, the proposed development is feasible provided the main geotechnical constraints of compressible soils, seismically induced settlement, and seismic shaking are mitigated. The primary grading and construction phase issue will be the presence of shallow groundwater and associated saturated soil conditions which will be encountered during excavations for remedial removals and underground improvements. These and other conditions are discussed below.

### **1. Site Demolition**

Aggregate derived from crushing existing AC and the existing AB may be suitable for stabilizing saturated excavation bottoms or as bedding under pipelines. These materials often can be tested and classified for use as crushed miscellaneous base (CMB), which can also be used for future pavements and below structural slabs-on-grade.

Existing buried structures, foundations, utilities and pipelines and prior backfill should be removed, with resulting excavations backfilled with engineered fill.

### **2. Foundation Types and Remedial Measures**

Compressible and liquefiable soils at the site will require either deep foundations or some type of ground improvement for the larger buildings. The best suited ground improvement to mitigate settlement of the large structures should be stone columns or rammed aggregate piers (RAP) on the order of 15 feet deep. For the RAP method, we concur with the preliminary design values provided to you by a RAP specialty contractor using Geopier brand RAPs: bearing value of 7,000 psf; a coefficient of sliding resistance of 0.40; and total static and differential settlements limited to less than 1 inch and 1/2 inch in 30 feet, respectively. Additional differential seismic settlement on the order of 1 to 1.5 inches may be expected with RAPs.

Building areas where ground is improved with RAPs or stone columns should be provided with a minimum 2-foot-thick layer of newly compacted fill. Commonly, a surface layer of aggregate is recommended with RAPs or stone columns. This layer may be counted toward the 2-foot-thick layer recommendation. In other words, building pads may be graded with a 1-foot-thick layer of fill, left low by one foot, then capped with one foot of aggregate following RAP installation.

The smaller retail buildings may be supported on a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement. The fill material, including aggregate, should be a minimum of 5 feet below finish grade or 3 feet below bottom of foundations, whichever is deeper. The bottom of the excavation should have a layer of geogrid, such as Tensar 130 or BX1515 and a minimum of 2 feet of aggregate base. The remaining fill may be compacted native soil. The deeper undocumented fill in the southeast corner of the site (future retail shops area) as described in the Summary of Geotechnical Conditions, should be completely removed and replaced with engineered fill. Significant amounts of debris and/or larger sized debris should be culled from the removed soil prior to it being placed as compacted fill. These removals and replacement operations very likely will be below the groundwater table. Therefore, local dewatering and excavation bottom stabilization should be anticipated. With the

aforementioned remedial measures, total and differential settlements of the smaller retail buildings should be less than 1-inch and ½-inch over a 30-foot span.

RAPs or the above described geogrid and aggregate system is also recommended for larger walls, monuments, signs, etc. if designed with shallow spread footings.

### **3. Remedial Grading of Non-structural Areas**

All other areas of the site which may have vehicular paving or hardscape improvements should be provided with a minimum of 2 feet of newly compacted fill below the bottom of pavements and slabs-on-grade. This grading should not be impacted by groundwater or wet soil conditions unless it is during the rainy season.

### **4. Shallow Groundwater and Wet Soil**

Excavations deeper than 3 feet in some areas and 4 feet in others are likely to encounter shallow groundwater and/or soft, wet soil. Grading in these conditions will require some type of ground stabilization, such as cement treatment or aggregate or a combination of both. (Onsite soils are not suitable for lime treatment due to the primarily sandy composition.) Geofabric or geogrid is recommended in combination with aggregate to reduce the required depth of treatment, amount of aggregate and time required to backfill the excavations. Excavations and grading from existing ground surface to within 2 feet of the groundwater table, such as the grading for parking lot areas, will likely not require soft ground stabilization.

From our experience, 1.5 to 2 feet of cement-treated soil mixed at 6 percent cement content by weight was sufficient to stabilize wet excavation bottoms. For aggregate method, a geogrid, such as Tensar 130 placed on the bottom with approximately 1 to 2 feet aggregate, was sufficient to stabilize the bottoms enough to place native soil as compacted fill. Success factors for these methods included experienced contractor/operators for excavating wet ground without getting equipment mired; placement and spreading of stabilization materials; skilled soil treatment contractors using proper equipment and techniques; and good planning/staging for timely excavation and stabilization/fill placement.

Site soil conditions are not suited for pre-construction dewatering using a well point system; while there are abundant sandy soils, many of the sands have high silt and some clay content, which result in low permeabilities. Local sump pumps should be sufficient for areas where groundwater rises in an excavation. At the nearby Lyon Homes (Ovation) site, smaller excavation areas allowed for more rapid stabilization and backfilling without the need for significant use of sumps. Deeper excavations left open for longer periods or overnight will be prone to filling with standing groundwater.

Larger underground structures may require extra thickness of aggregate bedding due to the shallow groundwater and saturated soils. Cement-treated soil stabilization is also a viable option. Buried structures, such as storm water retention/treatment systems, must consider potential hydrostatic uplift forces in their design.

## **5. Slabs-on-Grade for Structures**

Concrete slabs-on-grade under the structures should be a minimum of 4 inches thick and may be constructed over the aggregate layer above the RAPs or stone columns. The smaller retail building slabs may be constructed over the anticipated sandy subgrade fill.

## **6. Vehicular Pavements**

Prior studies did not perform any R-value tests of onsite soil for vehicular paving design but assumed R-values are in the 40 to 60 range, owing to the near-surface soil being predominantly sandy. We believe these assumptions to be overly optimistic based on our local experience. The sands at the site are predominantly fine sands with significant amounts of silt and some clay. From our very limited testing (two R-value tests), we used a design R-value of 25 and assumed traffic indices (TIs) in order to arrive at the following preliminary pavement sections:

- Parking Stalls (little or no potential for heavier truck traffic): 3.5" AC/6" AB.
- Drive Aisles/Secondary Loop Roads (passenger cars, light duty trucks): 3.5" AC/ 7" AB.
- Main Entry Drives with Some Truck Traffic: 4" AC over 10" AB.

Final sections may change depending on postgrading soil testing for R-values and site specific traffic index values, which should be calculated by a traffic engineer. Truck ramps and loading docks will require thicker AC/AB sections or PCC pavements.

## **7. Earthwork Bulking and Shrinkage Factors**

For estimating grading quantities, the following shrinkage factors are provided:

- Existing Fill: 0 to 2 percent shrinkage
- Native Alluvium: 10 to 15 percent shrinkage

Ground subsidence due to grading operations should be less than 0.1 inch due to the age and prior use of the site.

## **8. Cement Type and Corrosivity**

Soluble sulfate contents of soil at this and adjacent sites are in the "S0" category (negligible) and soil corrosivity is in the "moderately corrosive" category. Other soil chemical constituent contents, such as chlorides, were not particularly high as reported by others (Leighton, 2019 and GPI, 2008).

## **9. Exterior Hardscape**

Following site grading, near-surface fills are expected to have "very low" to "low" expansion potential, though some occurrences of "medium" expansive soils cannot be completely ruled out. For estimating purposes, you may assume concrete hardscape designed and constructed for "low" expansion potentials, overall. Final hardscape design should be based on soil sampling and laboratory testing following the completion of site grading.

Concrete flatwork for people spaces, walkways, sidewalk, etc., may be 4 inches thick with appropriate control and expansion joints, as specified by a landscape architect to mitigate concrete shrinkage cracking. No reinforcement, subbase or AB is required from an expansive soil standpoint.

## **10. Additional Exploration, Testing, and Analyses**

- The need for additional exploration (borings, test pits or CPTs) and laboratory testing of soil should be evaluated once the development plan is finalized, especially the structural characteristics and structure locations.
- Exploration with a backhoe is recommended to further investigate the extent and depths of the undocumented fill.
- Settlement analyses should be refined once actual rather than the assumed structural foundation loads are available.
- The final grading plan should be reviewed by the geotechnical consultant and the remedial grading recommendations in this report should be re-evaluated in light of the planned cuts and fills and extent of ground improvement measures.
- Pavement designs should be finalized based on TIs provided by a traffic engineer and R-value testing of near-surface soil following grading of the site.
- The groundwater monitoring wells should be read periodically leading up to the start of grading. We recommend two readings during the summer months and two in the fall and winter.
- The design parameters and recommendations herein are based on the anticipated engineering properties of the onsite soil. Import soils, if required, should be evaluated and tested as necessary to verify their engineering properties are similar or better than the onsite soils.

## **11. Limitations**

This report has been prepared for the exclusive use of our client, Shea Properties, within the specific scope of services requested by them for the Cypress mixed use project. This report or its contents should not be used or relied upon for other projects or purposes or by other parties without the written consent of Shea Properties and NMG. Our methodology for this study is based on local geotechnical standards of practice, care, and requirements of governing agencies for a given time. No warranty or guarantee, express or implied is given.

The findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can be very different in between data points, and can also change over time. Our conclusions and recommendations are subject to verification and/or modification with more exploration and/or during grading and construction when more subsurface conditions are exposed.

NMG's expertise and scope of services did not include assessment of potential subsurface environmental contaminants or environmental health hazards.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

NMG GEOTECHNICAL, INC.



Ted Miyake, RCE 44864  
Principal Engineer



William Goodman, CEG 1577  
Principal Geologist

ZKH/TM/WG/grd

Distribution: (1) Addressee (E-Mail)  
(1) Mr. Sean McEachern, Shea Properties (E-Mail)  
(1) Mr. Kevin McCook, Shea Properties (E-Mail)  
(1) Ms. Elizabeth Cobb, Shea Properties (E-Mail)  
(1) Mr. Jon Stephani, Shea Properties (E-Mail)  
(1) Mr. Jeff Cunningham, Shea Properties (E-Mail)  
(1) Mr. Joe Hall, CSI (E-Mail)  
(1) Mr. Greg Harlock, Snyder-Langston (E-Mail)  
(1) Mr. Jason Marechal, Kimley-Horn (E-Mail)





P:\2019\19046-01 Shea Properties Cypress\Drafting\ArcGIS\SiteLocation.mxd



Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,  
AeroGRID, IGN, and the GIS User Community

0 375 750  
Feet  
1 inch = 750 feet



## SITE LOCATION MAP

SHEA PROPERTIES  
CITY OF CYPRESS  
COUNTY OF ORANGE, CALIFORNIA

Project Number: 19046-01 By: TM  
Project Name: Shea Properties / Cypress  
Date: 6/13/2019 Figure 1





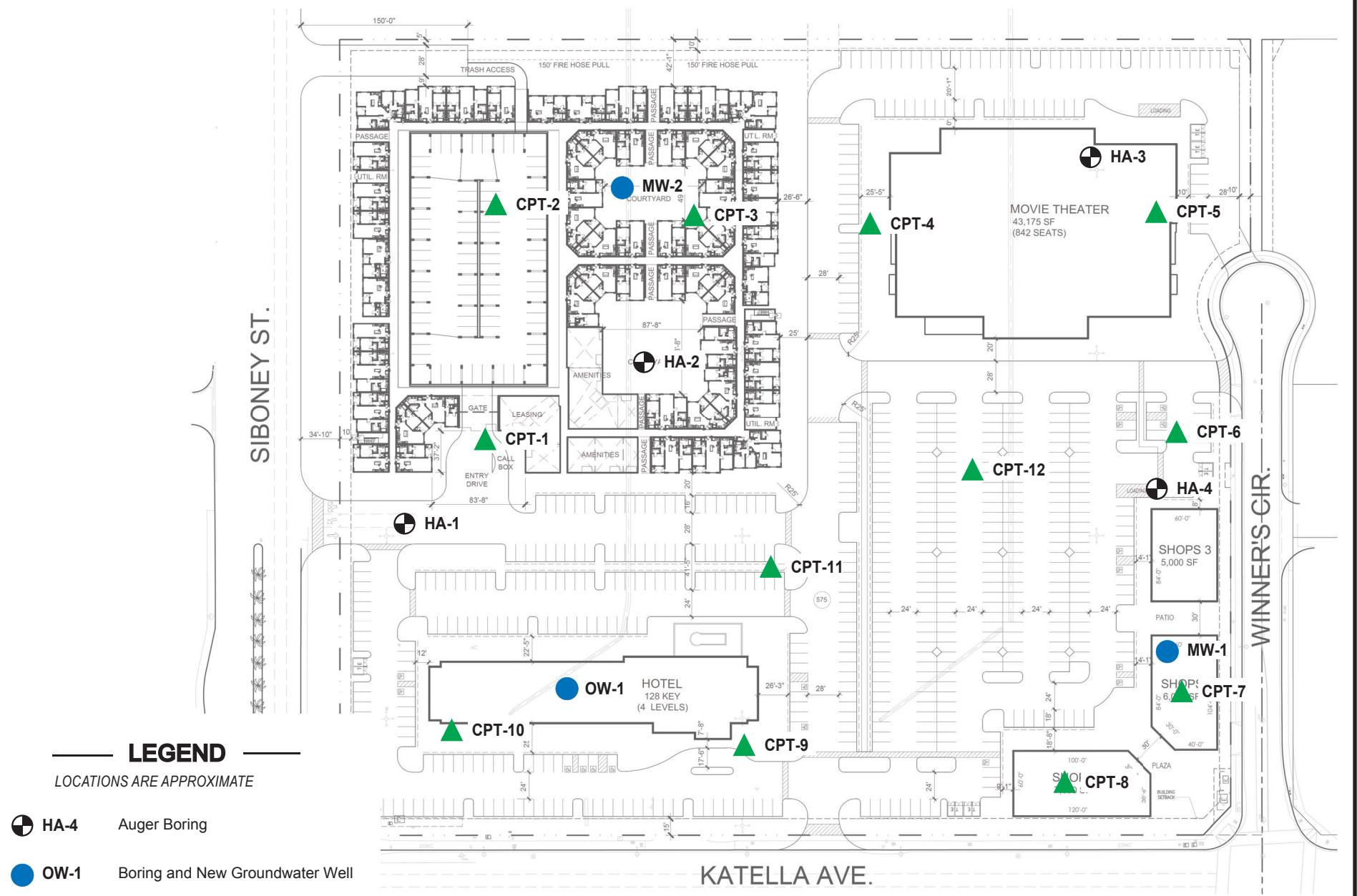


Figure 2



# **APPENDIX A**

## **APPENDIX A**

### **REFERENCES**

- Albus-Keefe & Associates, Inc., 2016, Rough Grading Plan Review Report, Proposed Senior Residential Community (Barton Place) and Commercial/Retail Development, Northeast of Katella Avenue and Enterprise Drive, City of Cypress, California, Job No. 2469.00, dated March 18, 2016.
- California Division of Mines and Geology (CDMG), 1976, Environmental Geology of Orange County, California Open-File Report 79-8 LA.
- California Division of Mines and Geology (CDMG), 1980, Classification and Mapping of Quaternary Sedimentary Deposits for Purposes of Seismic Zonation, South Coastal Los Angeles Basin, Orange County California, Annual Technical Report, F.Y. Sept. 19, 1979 - Sept. 18, 1980, Open File Report 81-966 O.F. R 80-19L.A. Plate No. 1, Map Nos. 1 through 4, Authored by Davis, J. F.
- California Geological Survey, Department of Conservation 1998, Seismic Hazard Zone Report for The Los Alamitos 7.5-Minute Quadrangle, Orange County California, Seismic Hazard Zone Report 019.
- California Geological Survey, Department of Conservation, 1999, Seismic Hazard Zones Los Alamitos Quadrangle, Orange County California, Seismic Hazard Zone, Released; March 25, 1997.
- Geotechnical Professionals Inc. (GPI), 2008, Geotechnical Investigation Proposed Cypress Retail Center, NWC of Winners Circle and Katella Avenue, Cypress, California, Project No. 2241.1, dated August 26, 2008.
- Hart, E. W. and Bryant, W.A., 2007, Fault Rupture Hazard Zones in California, Alquist Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault zones Maps, Department of Conservation, Division of Mines and Geology, Special Publication 42, Revised 1997, Interim Revision 2007.
- Jennings, Charles W., 2010, Fault Activity Map of California and Adjacent Areas, Department of Conservation, Division of Mines and Geology, Geologic Data Map No. 6.
- Leighton Consulting, Inc., 2017, Due Diligence Geotechnical Evaluation Proposed Commercial Development Northeast Corner of Katella Avenue and Siboney Street, Cypress, California, Project No. 11829.001, dated November 14, 2017.
- Leighton Consulting, Inc., 2019, Report of Geotechnical Investigation, Proposed Retail Development, Northeast of Katella Avenue and Siboney Street, City of Cypress, California, Project No. 11829.005, Draft Report dated February 18, 2019.
- NMG Geotechnical, Inc., 2017a, Preliminary Summary of Findings from Geotechnical Due Diligence Study, Barton Place Project, County of Orange, Cypress, California, Project No. 17020-01, draft memorandum dated March 7, 2017.

## APPENDIX A

### REFERENCES (Continued)

- NMG Geotechnical, Inc., 2017b, Geotechnical Due Diligence Study, Barton Place Project, 4921 Katella Avenue, Northeast Corner of Enterprise and Katella Avenues, City of Cypress, County of Orange, California, Project No. 17007-01, dated March 13, 2017.
- NMG Geotechnical, Inc., 2018a, Geotechnical Report of Observation and Testing during Rough Grading and Construction of Sanitary Sewer, Storm Trap System and Associated Storm Drain for the Commercial/Retail portion of Ovation at Flora Park, City of Cypress, California, Project No. 17007-02, dated March 6, 2018.
- NMG Geotechnical, Inc., 2018b, Geotechnical Review of Production Precise Grading Plan, Ovation at Flora Park, 4701 Katella Avenue, City of Cypress, California, Project No. 17007-02, dated April 12, 2018.
- NMG Geotechnical, Inc., 2018c, Geotechnical Report of Observation and Testing during Rough Grading of the Ovation Residential Development at Flora Park, City of Cypress, California, Project No. 17007-02, dated May 8, 2018.
- U.S. Geological Survey, 2004, Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, dated 2004, CGS Open File Report 99-172.
- U.S. Geological Survey, 2017, Unified Hazard Tool, Dynamic: Conterminous US 2008 (v3.3.1) Deaggregation Program; web site address:  
<https://earthquake.usgs.gov/hazards/interactive/>

### AERIAL PHOTOGRAPHS REVIEWED

<i>Date</i>	<i>Flight</i>	<i>Photo No.</i>	<i>Scale (1"=)</i>	<i>Source</i>
12/31/1927	C-300	M-256	1,500'	U. C. Santa Barbara
9/26/1931	C-1700	92	1,500'	U. C. Santa Barbara
5/23/1938	AXK-1938	28-56	1,666'	U. C. Santa Barbara
6/17/1947	C-11351	7-62	2,000'	U. C. Santa Barbara
11/17/1952	AXK-1953	1K-33	1,666'	U. C. Santa Barbara

Aerial Photos from 1952 to present were reviewed using the following online source:

Nationwide Environmental Title Research, LLC., 2018, Historic Aerials by NETR Online, Version 0.2.4, website address: <https://www.historicaerials.com>

## **APPENDIX B**

## SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
<div>COARSE GRAINED SOILS</div> <div>MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE</div>	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
					GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SM	SILTY SANDS, SAND - SILT MIXTURES
					SC	CLAYEY SANDS, SAND - CLAY MIXTURES
<div>FINE GRAINED SOILS</div> <div>MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE</div>	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	INORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
				CH	INORGANIC CLAYS OF HIGH PLASTICITY	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Dual symbols are used to indicate gravels or sand with 5-12% fines and soils with fines classifying as CL-ML. Symbols separated by a slash indicate borderline soil classifications.

### Sampler and Symbol Descriptions

- Modified California sample (D-#)
- Standard Penetration Test (S-#)
- Undisturbed pushed tube sample (U-#)
- Large bulk sample (B-#)
- Small bulk sample (b-#)
- Approximate depth of groundwater during drilling
- Approximate depth of static groundwater

Note: Number of blows required to advance driven sample 12 inches (or length noted) is recorded.

### Laboratory and Field Test Abbreviations

- AL** Atterberg limits
- CC** Chemical Testing incl. Soluble Sulfate
- CN** Consolidation test
- DS** Direct shear test
- EI** Expansion Index
- GS** Grain Size Analysis (Sieve, Hydro. and/or -No. 200)
- MD** Compaction test
- RV** Resistance Value (R-Value)
- SE** Sand Equivalent
- UU** Unconsolidated Shear Strength

### GENERAL NOTES

- Soil classifications are based on the Unified Soil System and include color, moisture, and relative density or consistency. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate. Bedrock descriptions are based on visual classification and include rock type, moisture, color, grain size, strength, and weathering.
- Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not warranted to be representative of subsurface conditions at other locations or times.

## KEY TO LOG OF BORING

Shea Properties/Cypress Mixed-Use  
Cypress, California  
PROJECT NO. 19046-01



**NMG** Geotechnical, Inc.

Date(s) Drilled	5/13/19	Logged By	ZKH	<div>OW-1</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		7.8 Feet		Total Depth Drilled (ft)	20.0
Comments				Approximate Ground Surface Elevation (ft)	31.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 2" AC over 2" AB. Parking Lot.			
30				ML-CL	<b>Alluvium (Qal)</b> @ 1'-5': Dark brown clayey SILT/silty CLAY, moist.			B-1 @ 1'-5' El, CC
5	B-1							
		D-1	17	SM	@ 5': Olive gray silty fine SAND, very moist, medium dense, some silty layers, trace root hairs, micaceous.	22.8	98.6	
		D-2	12	SM-SC	@ 7.5': Brown to dark brown silty clayey very fine SAND, wet to saturated, loose, micaceous, trace silty clay layer.	23.8	92.0	B-2 @ 7.5'-15'
10		D-3	12	SM	@ 10': No Recovery. Cuttings showed silty fine SAND, saturated, loose.			
20	B-2							
		D-4	9	ML	@ 15': Grayish brown clayey/sandy SILT, saturated, medium stiff, micaceous.	22.0	102.7	
15								
		D-5	11	CL	@ 18.5': Dark brown silty/sandy CLAY, saturated, medium stiff, trace root hairs, pinhole pores, micaceous.	22.5	102.4	
20								
10					Notes: Total Depth: 20.0 Feet. Groundwater Encountered at 12.05 Feet After Drilling. Groundwater 7.80 Feet After Well Construction. Screened Pipe From 4 to 20 Feet, With Monterey #3 In Annulus. Solid Pipe from 0 to 4 Feet, With Annular Seal at 2 to 4 Feet. Concrete Flush Mount Well Cover from 0 to 2 Feet.			
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-1</div> <div>Sheet 1 of 1</div>
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"	
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop	
Sampling Method(s)	Bulk, Modified California			
Approximate Groundwater Depth: N/A				
Comments				Total Depth Drilled (ft)6.5
				Approximate Ground Surface Elevation (ft)31.5 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 3" AC over 2" AB. Parking Lot.			
-30		B-1		CL	<b>Alluvium (Qal)</b> @ 0.5'-3': Brown to dark brown silty CLAY, very moist.			B-1 @ 1'-5' RV, EI, CC
				SC	@ 3'-5': Brown clayey fine SAND, wet, micaceous.			
5		D-1	12	CL	@ 5': Upper: Dark brown sandy CLAY, saturated, stiff.	20.8	99.4	
				SM	Lower: Grayish brown silty fine to medium SAND, saturated, loose, micaceous.			
10					Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
-20								
15								
20								
-10								
25								

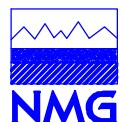
**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-2</div> <div>Sheet 1 of 1</div>
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"	
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop	
Sampling Method(s)	Bulk, Modified California			
Approximate Groundwater Depth: 4.75 Feet				Total Depth Drilled (ft) 6.5
Comments				Approximate Ground Surface Elevation (ft) 31.5 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 2.5" AC over 2" AB. Parking Lot.			
30		B-1		CL	<b>Alluvium (Qal)</b> @ 0.5'-1': Dark brown silty CLAY, very moist.			B-1 @ 1'-5' El, CC
				SM-SC	@ 1'-5': Grayish brown silty/clayey fine SAND, saturated, micaceous.			
5		D-1	12	SM	@ 5': Grayish brown silty fine to medium SAND, saturated, loose, micaceous.	21.5	97.1	
10					Notes: Total Depth: 6.5 Feet. Groundwater at 4.75 Feet After Drilling. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01

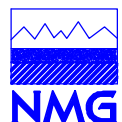




Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-3</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		N/A			
Comments				Total Depth Drilled (ft)	6.5
				Approximate Ground Surface Elevation (ft)	32.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0				SM-SC	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot.			B-1 @ 1'-5'
30		B-1		SM	<b>Alluvium (Qal)</b> @ 1'-5': Olive brown silty fine to medium SAND, saturated, loose, micaceous.			
5		D-1	8		@ 5': Olive brown silty fine to medium SAND, saturated, loose, micaceous.	26.9		
10					Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-4</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		4.5 Feet		Total Depth Drilled (ft)	6.5
Comments				Approximate Ground Surface Elevation (ft)	32.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0				SM	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot. <b>Alluvium (Qal)</b> @ 0'-5': Olive brown to light olive brown silty fine SAND, very moist to wet.			B-1 @ 1'-5' RV, EI, CC
30		B-1						
5		D-1	5		@ 5': No Recovery.			
10					Notes: Total Depth: 6.5 Feet. Groundwater 4.5 Feet After Drilling. Backfilled with Cuttings and Tamped.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



## **APPENDIX C**

APPENDIX  
SUMMARY OF SOIL LABORATORY DATA

Cypress, California

Boring No.	Boring/Sample Information					Field Wet Density (pcf)	Field Dry Density (pcf)	Field Moisture Content (%)	Degree of Sat. (%)	Sieve/Hydrometer		Atterberg Limits		USCS Group Symbol	Direct Shear			Compaction Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Expansion Index	R-Value	Soluble Sulfate Content (% by wt)	Remarks
	Sample No.	Depth (feet)	End Depth (feet)	Elevation (feet)	Blow Count (N)					Fines Content (% pass. #200)	Clay Content (% pass. #200)	LL (%)	PI (%)		Ultimate Cohesion (psf)	Friction Angle (°)	Peak Cohesion (psf)						
HA-1	B-1	1.0	5.0																				
HA-1	D-1	5.0			12	120.1	99.4	20.8	80.8											16	16	0.06	
HA-2	B-1	1.0	5.0																				
HA-2	D-1	5.0			12	118.0	97.1	21.5	79.0											0		0.05	
HA-3	B-1	1.0																					
HA-3	D-1	5.0			8			26.9															
HA-4	B-1	1.0	5.0																				
HA-4	D-1	5.0			5																		
OW-1	B-1	1.0	5.0																				
OW-1	D-1	5.0			17	121.2	98.6	22.8	87.0											1	60	0.05	
OW-1	D-2	7.5			12	113.9	92.0	23.8	77.3											3		0.05	
OW-1	B-2	7.6																					
OW-1	D-3	10.0			12																		
OW-1	D-4	15.0			9	125.3	102.7	22.0	92.8														
OW-1	D-5	18.5			11	125.4	102.4	22.5	93.9														





# R-VALUE TEST DATA      CTM 301 / ASTM D2844

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-1	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown sandy SILT		

Specimen Number	1	2	3	4
Mold Number	10	11	12	
Water Adjustment (g)	+65	+52	+39	
Compactor Pressure (psi)	175	300	350	
Exudation Pressure (psi)	250	412	618	
Gross Weight (g)	3264.8	3236.4	3209.6	
Mold Tare (g)	2130.9	2118.3	2120.8	
Wet Weight (g)	1133.9	1118.1	1088.8	
Sample Height (in)	2.55	2.50	2.42	
Initial Dial Reading	0.0902	0.0502	0.0612	
Final Dial Reading	0.0902	0.0505	0.0620	
Expansion (in x10 <sup>-4</sup> )	0	3	8	
Stability(psi) at 2,000 lbs (160 psi)	74   120	70   116	44   84	
Turns Displacement	4.78	3.50	3.40	
R-Value Uncorrected	15	21	40	
R-Value Corrected	15	21	38	
Moisture Content (%)	13.2	12.1	10.9	
Dry Density (pcf)	119.1	120.9	122.9	
Assumed Traffic Index	4.0	4.0	4.0	
G.E. by Stability	0.87	0.81	0.63	
G.E. by Expansion	0.00	0.10	0.27	
Gf	1.25			

Moisture Content				
Dish No.	OO	I	Q	
Weight of Moist Soil and Dish (g)	254.9	254.4	254.0	
Weight of Dry Soil and Dish (g)	231.1	232.4	233.9	
Water Loss (g)	23.8	22.0	20.1	
Weight of Dish (g)	50.4	50.2	50.3	
Dry Soil (g)	180.7	182.2	183.6	
Moisture Content (%)	13.2	12.1	10.9	

R-Value by Exudation = 16

R-Value by Expansion = 57

R-Value at Equilibrium = 16 By Exudation

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



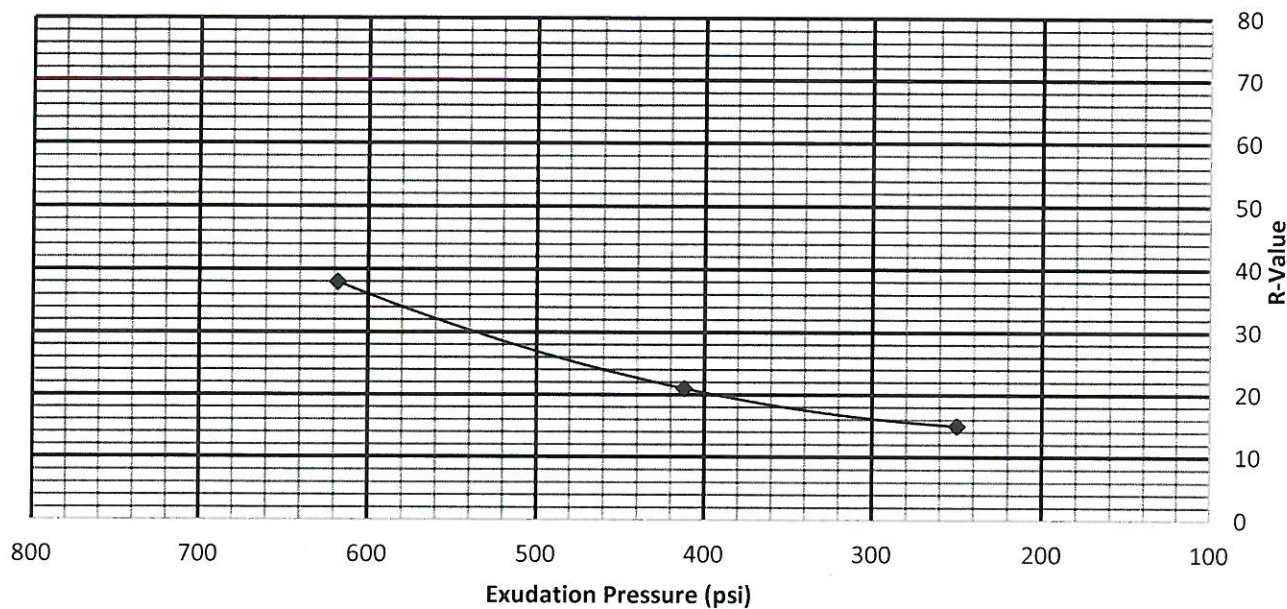
**NMG**  
Geotechnical, Inc.



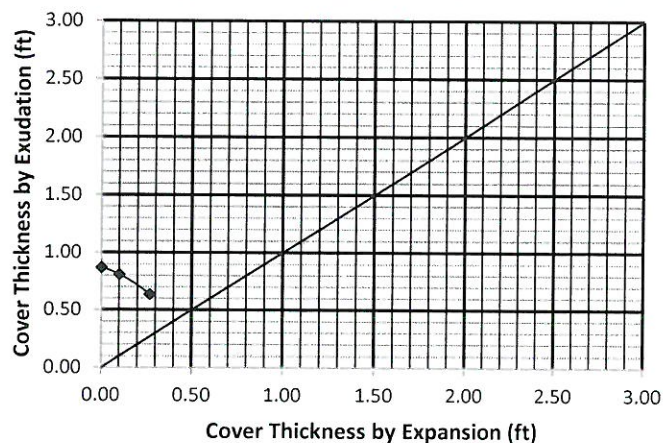
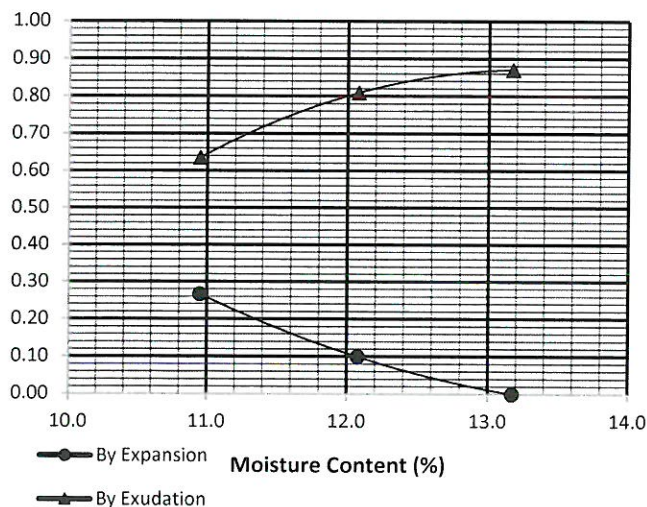
# R-VALUE GRAPHICAL PRESENTATION

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-1	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown sandy SILT		

## R-Value vs. Exudation Pressure



## Cover Thickness by Expansion and Exudation (ft)



Cover Thickness (ft) = 0.44

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



**NMG**

Geotechnical, Inc.



# R-VALUE TEST DATA     CTM 301 / ASTM D2844

Project:     Shea / Cypress	Project No:   19046-01	Date:   5/17/2019
Boring Trench No:   HA-4	Sample No:   B-1	Sample Depth:     1-5'
Field Description:     SM		
Lab Description:     Olive Brown silty SAND		

Specimen Number	1	2	3	4
Mold Number	7	8	9	
Water Adjustment (g)	+30	+18	+45	
Compactor Pressure (psi)	350	350	350	
Exudation Pressure (psi)	376	656	145	
Gross Weight (g)	3193.8	3175.3	3186.6	
Mold Tare (g)	2112.5	2128.5	2120.2	
Wet Weight (g)	1081.3	1046.8	1066.4	
Sample Height (in)	2.53	2.56	2.50	
Initial Dial Reading	0.0607	0.0407	0.0508	
Final Dial Reading	0.0612	0.0412	0.0509	
Expansion (in x10 <sup>-4</sup> )	5	5	1	
Stability(psi) at 2,000 lbs (160 psi)	34    56	30    52	34    58	
Turns Displacement	2.92	3.05	3.63	
R-Value Uncorrected	61	63	55	
R-Value Corrected	61	64	55	
Moisture Content (%)	10.6	9.8	11.5	
Dry Density (pcf)	117.1	112.8	115.9	
Assumed Traffic Index	4.0	4.0	4.0	
G.E. by Stability	0.40	0.37	0.46	
G.E. by Expansion	0.17	0.17	0.03	
Gf	1.25			

Moisture Content				
Dish No.	AA	BB	P	
Weight of Moist Soil and Dish (g)	255.9	251.5	289.0	
Weight of Dry Soil and Dish (g)	236.1	233.5	264.4	
Water Loss (g)	19.8	18.0	24.6	
Weight of Dish (g)	49.8	49.9	50.1	
Dry Soil (g)	186.3	183.6	214.3	
Moisture Content (%)	10.6	9.8	11.5	

R-Value by Exudation     =     60  
 R-Value by Expansion     =     100  
 R-Value at Equilibrium =     60 By Exudation

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks:     A traffic index of 4.0 was used for calculation purposes.

Set up by:     CAT/BAJ

Run by:     BAJ/TG

Calculated by:     TG

Checked by:     BAJ

Date Completed:     5/20/2019



NMG

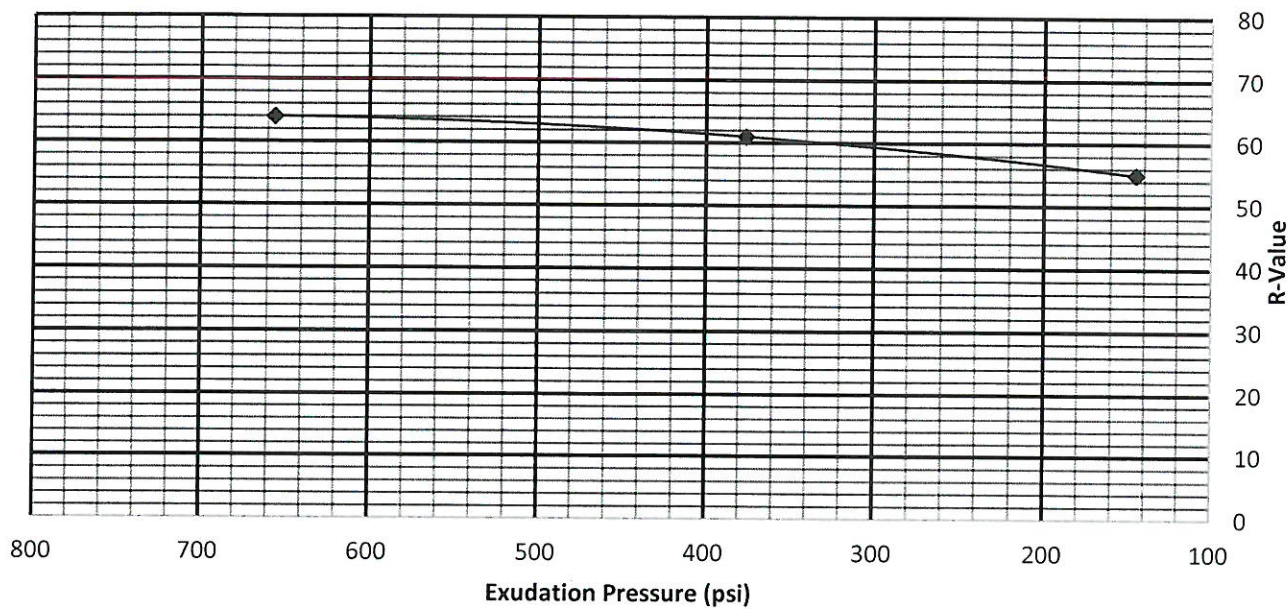
Geotechnical, Inc.



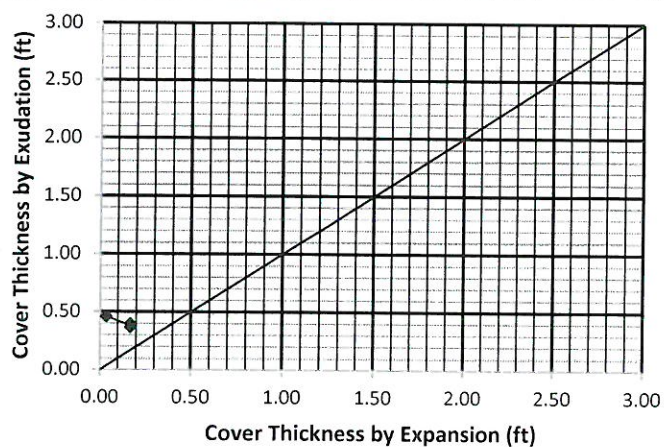
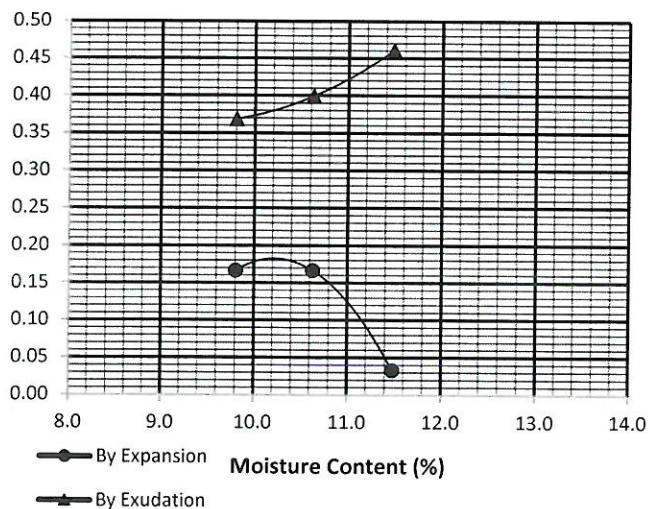
# R-VALUE GRAPHICAL PRESENTATION

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-4	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown silty SAND		

## R-Value vs. Exudation Pressure



## Cover Thickness by Expansion and Exudation (ft)



Cover Thickness (ft) = 0.00

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



**NMG**

**Geotechnical, Inc.**

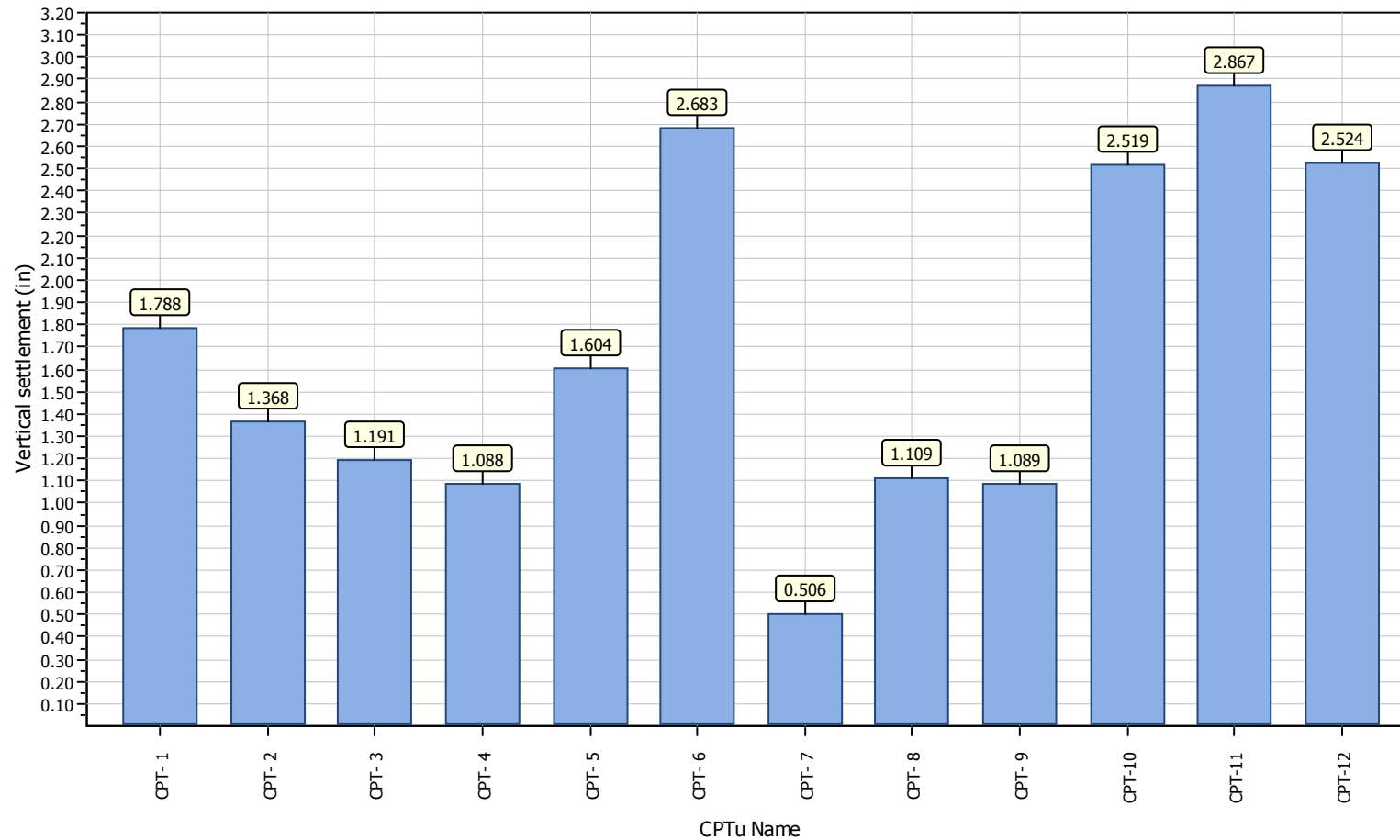
## **APPENDIX D**



**Project title : Shea Properties/Cypress**

**Location : Cypress, California**

### Overall vertical settlements report



## TABLE OF CONTENTS

<b>CPT- 1 results</b>	
Summary data report	1
Vertical settlements summary report	5
<b>CPT- 2 results</b>	
Summary data report	6
Vertical settlements summary report	10
<b>CPT- 3 results</b>	
Summary data report	11
Vertical settlements summary report	15
<b>CPT- 4 results</b>	
Summary data report	16
Vertical settlements summary report	20
<b>CPT- 5 results</b>	
Summary data report	21
Vertical settlements summary report	25
<b>CPT- 6 results</b>	
Summary data report	26
Vertical settlements summary report	30
<b>CPT- 7 results</b>	
Summary data report	31
Vertical settlements summary report	35
<b>CPT- 8 results</b>	
Summary data report	36
Vertical settlements summary report	40
<b>CPT- 9 results</b>	
Summary data report	41
Vertical settlements summary report	45
<b>CPT-10 results</b>	
Summary data report	46
Vertical settlements summary report	50
<b>CPT-11 results</b>	
Summary data report	51
Vertical settlements summary report	55
<b>CPT-12 results</b>	
Summary data report	56
Vertical settlements summary report	60



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

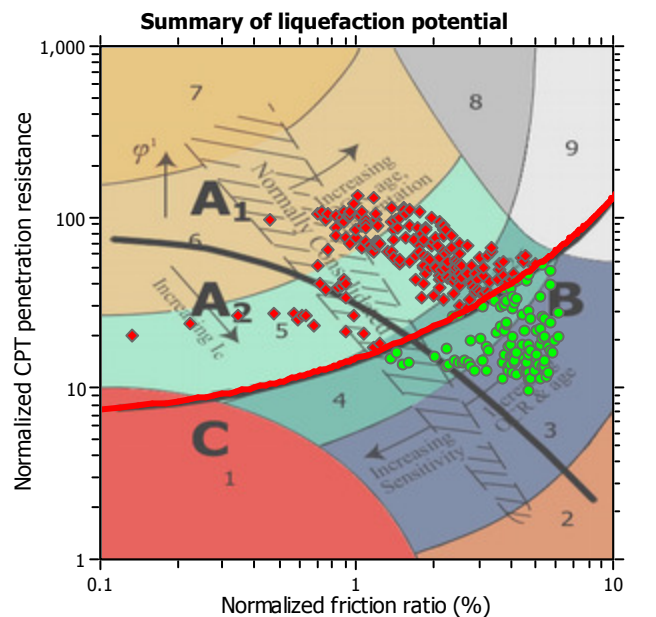
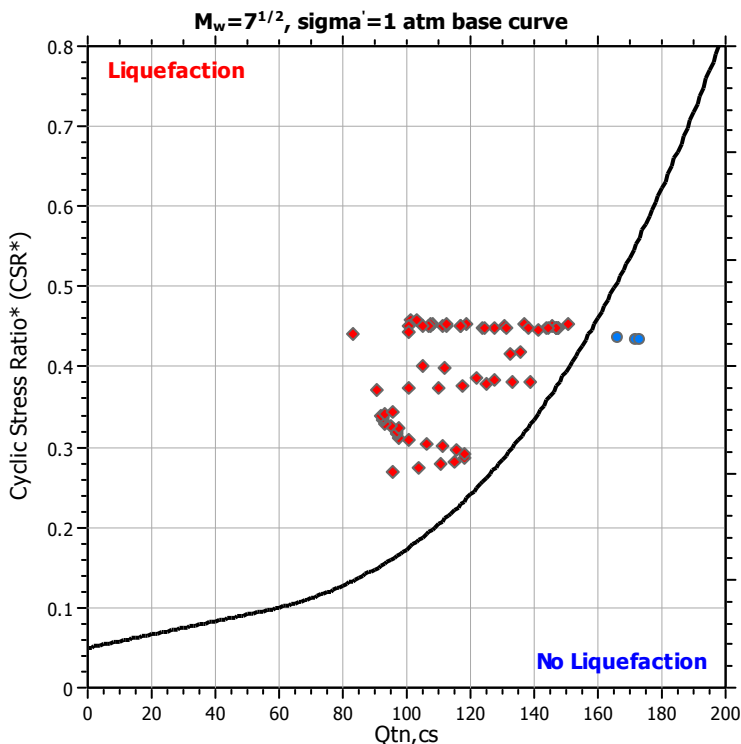
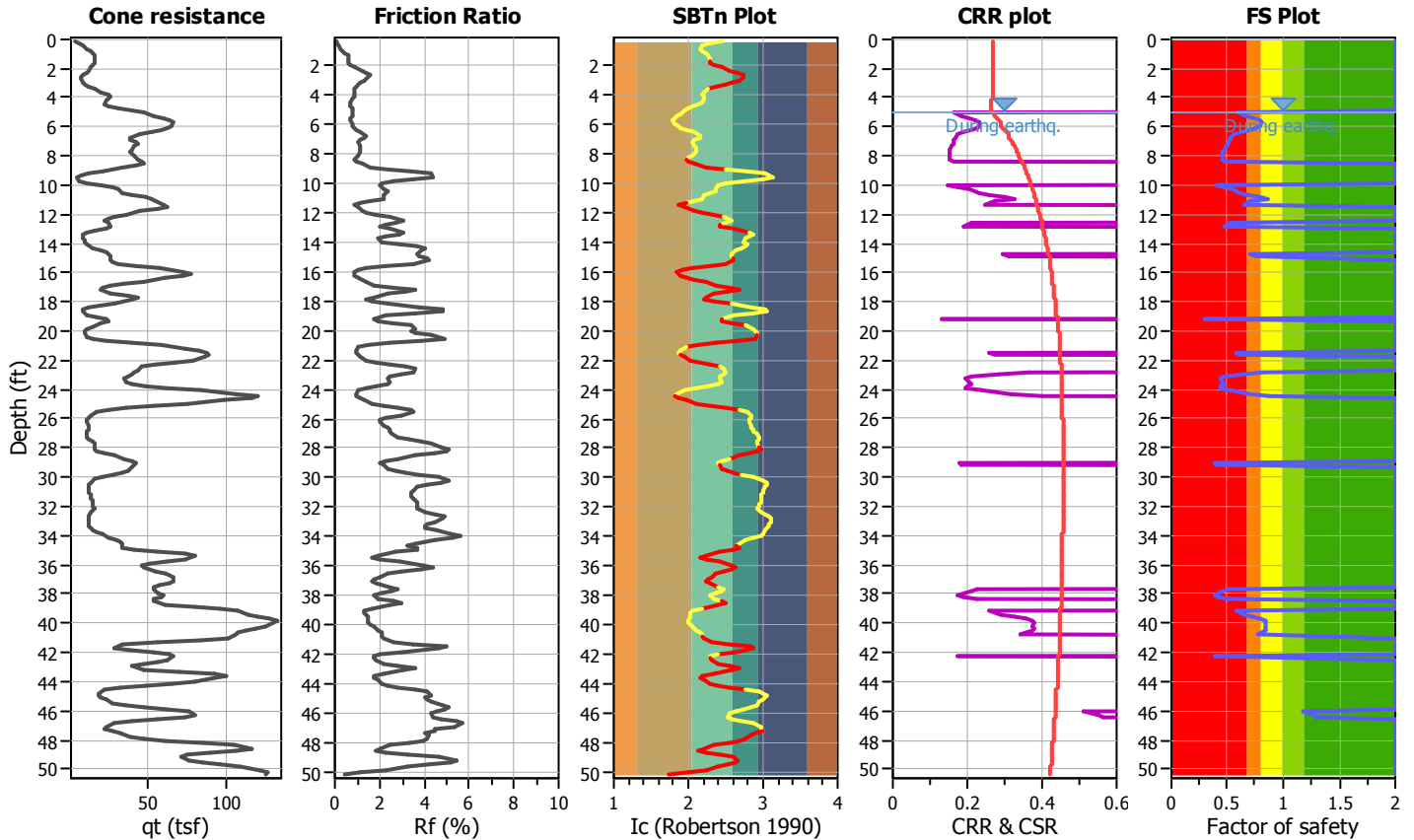
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 1

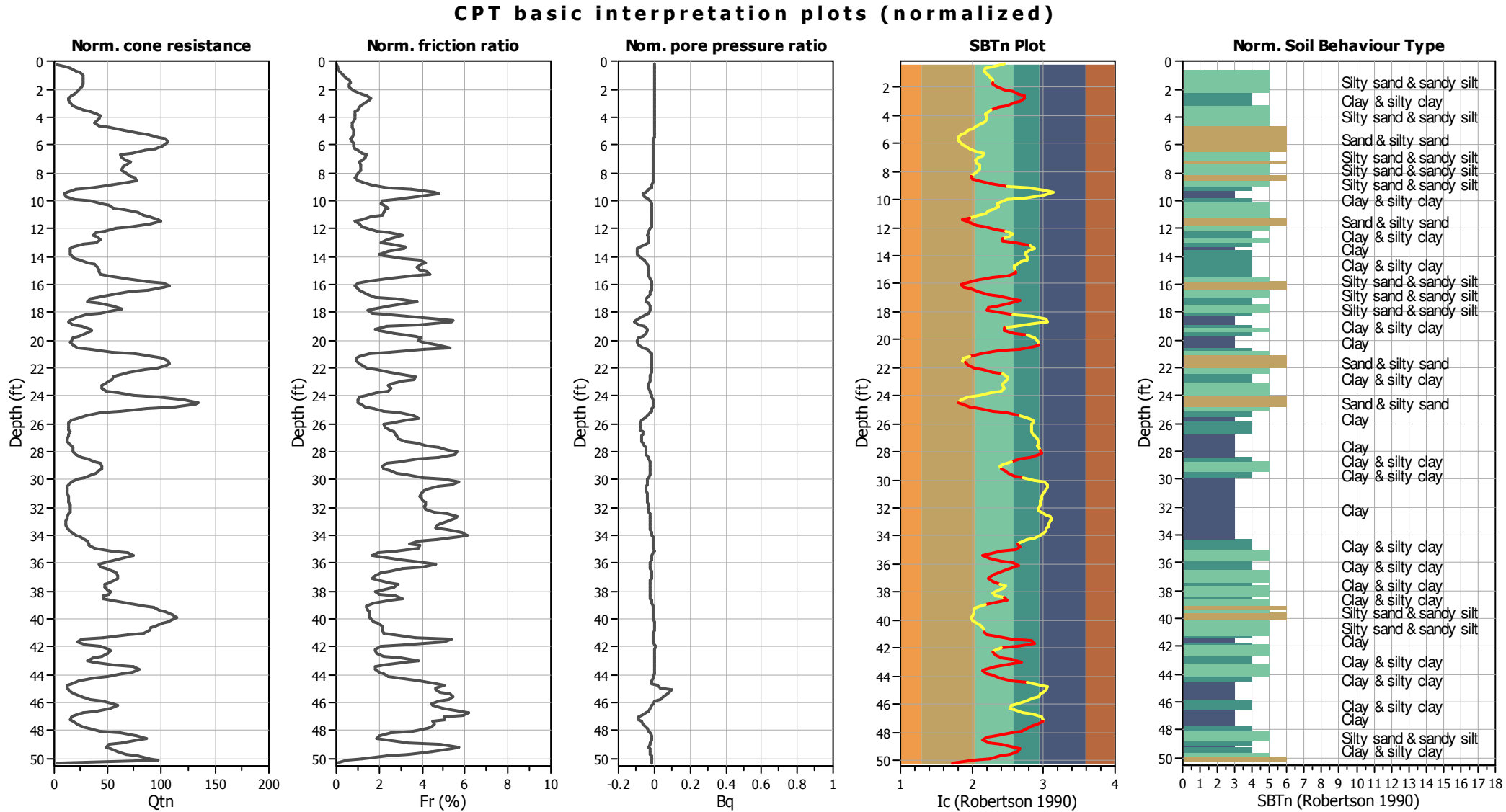
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based

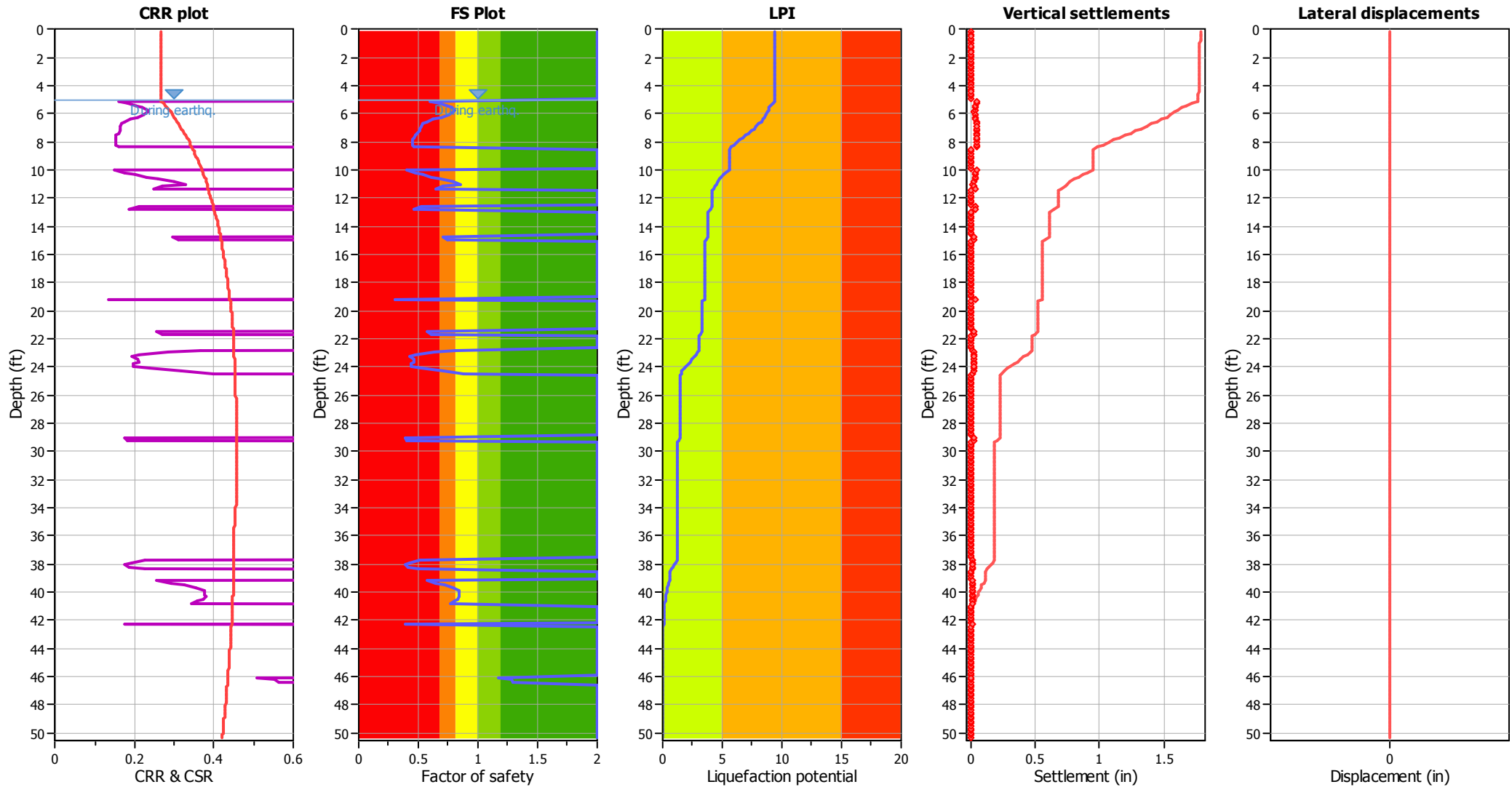


Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry





Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

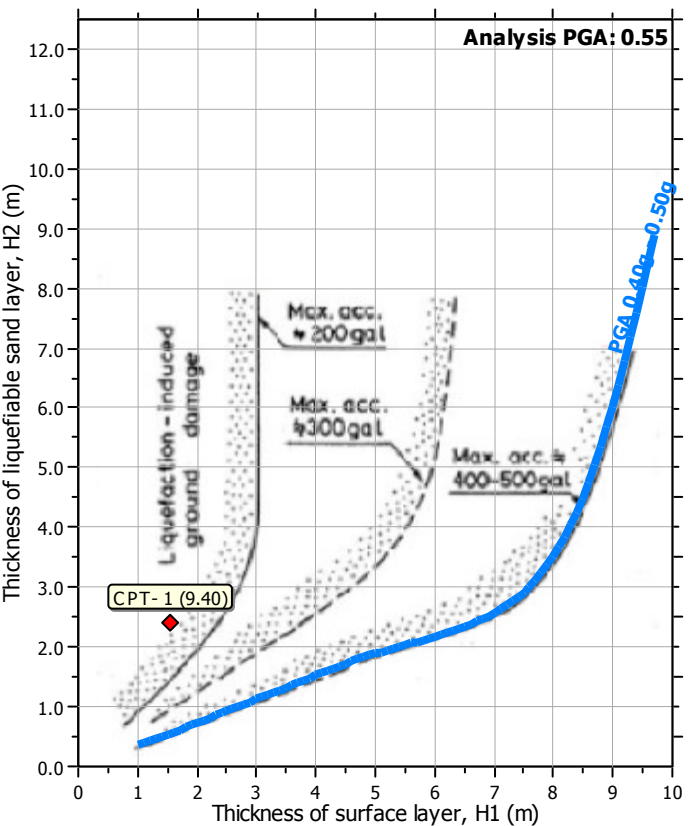
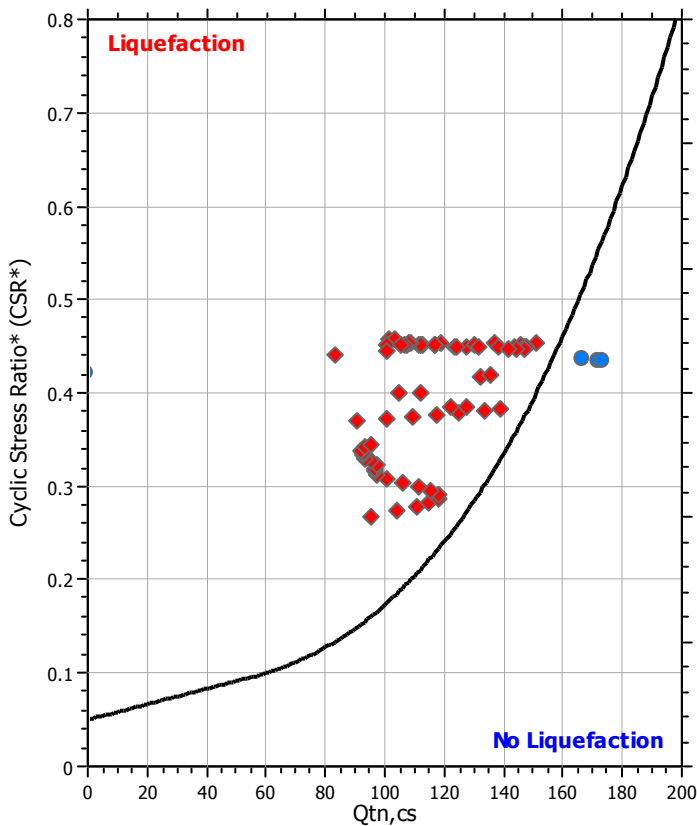
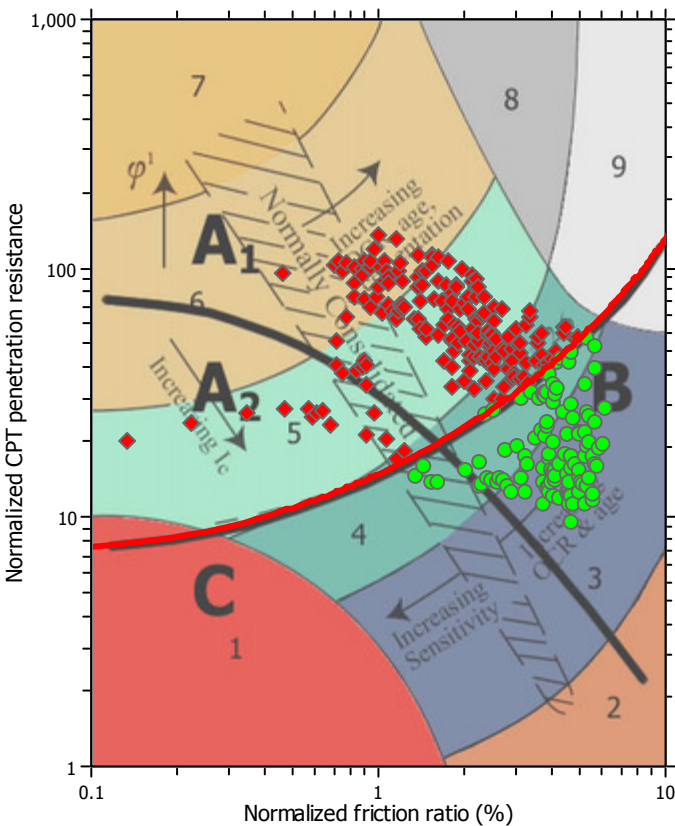
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

Liquefaction analysis summary plots

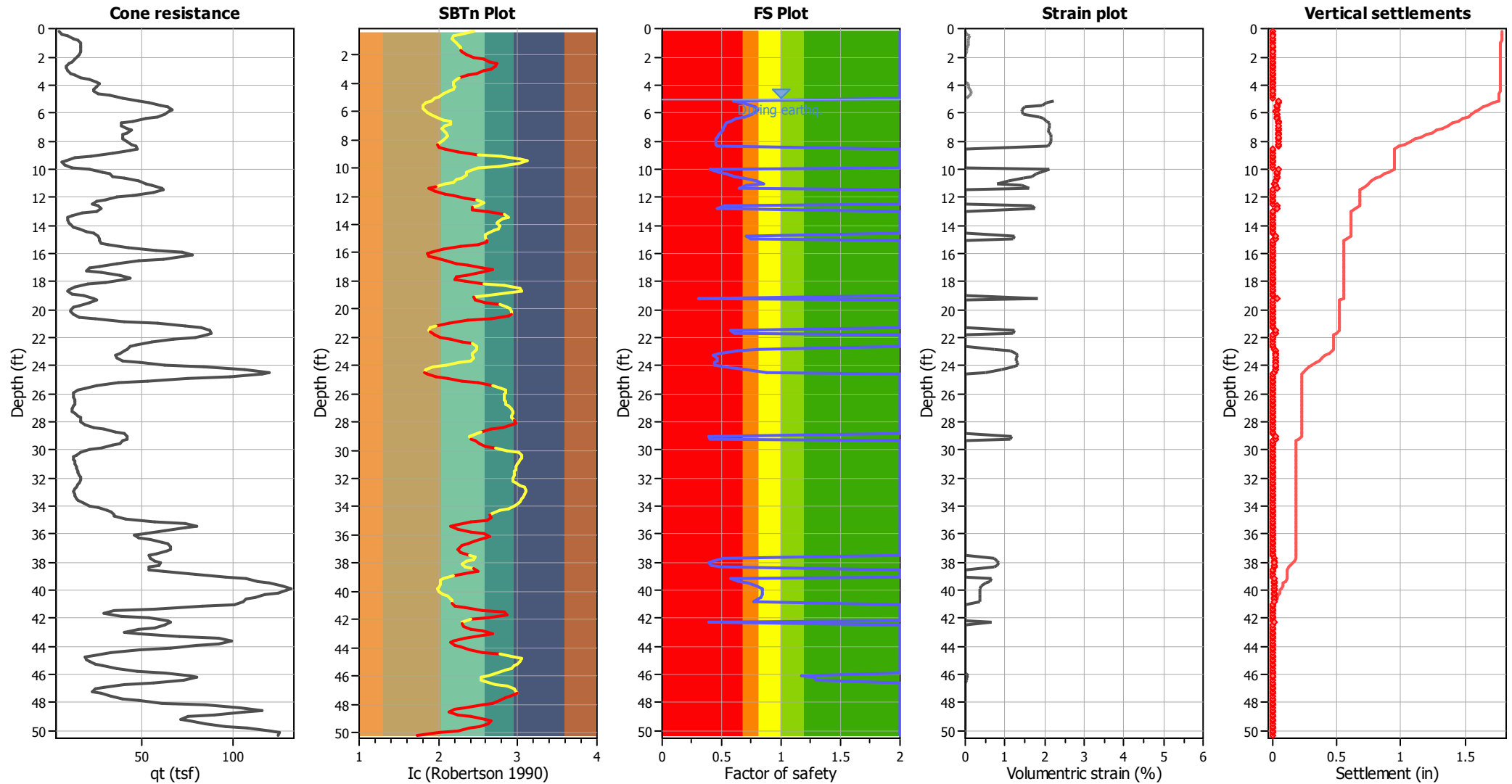


Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.  
17991 Fitch  
Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

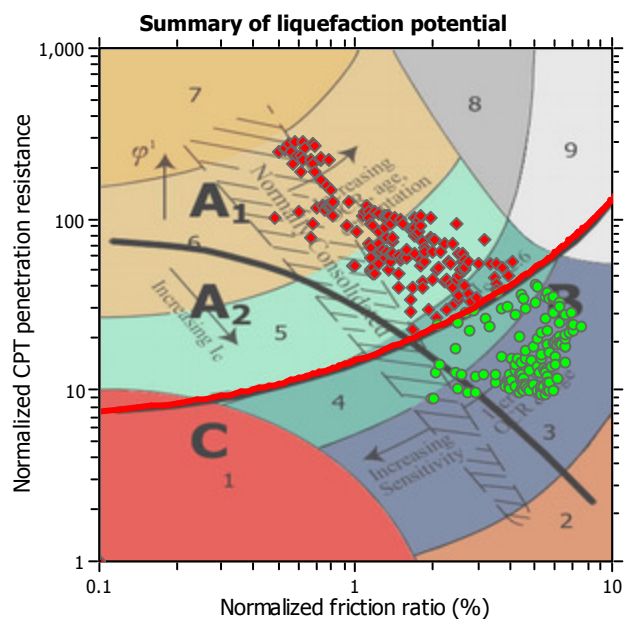
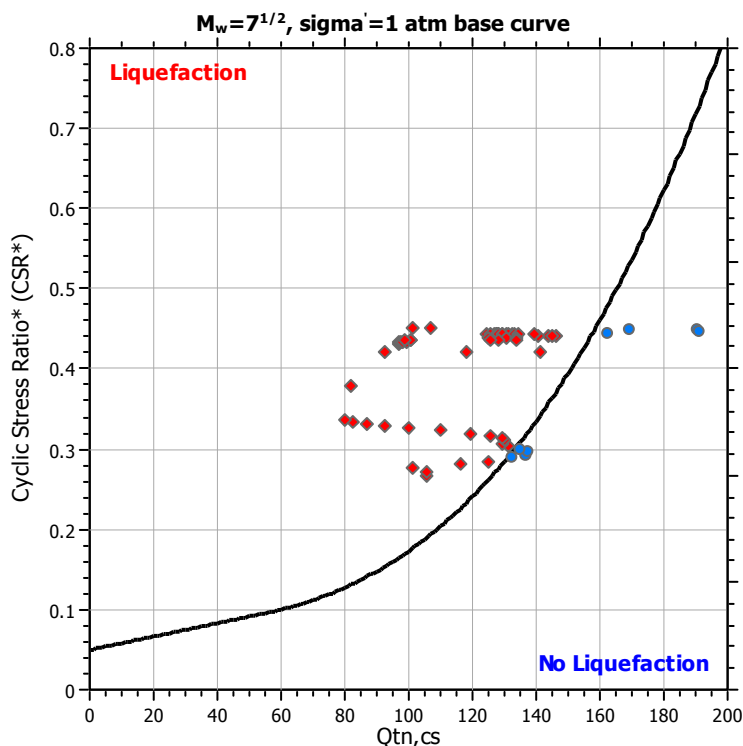
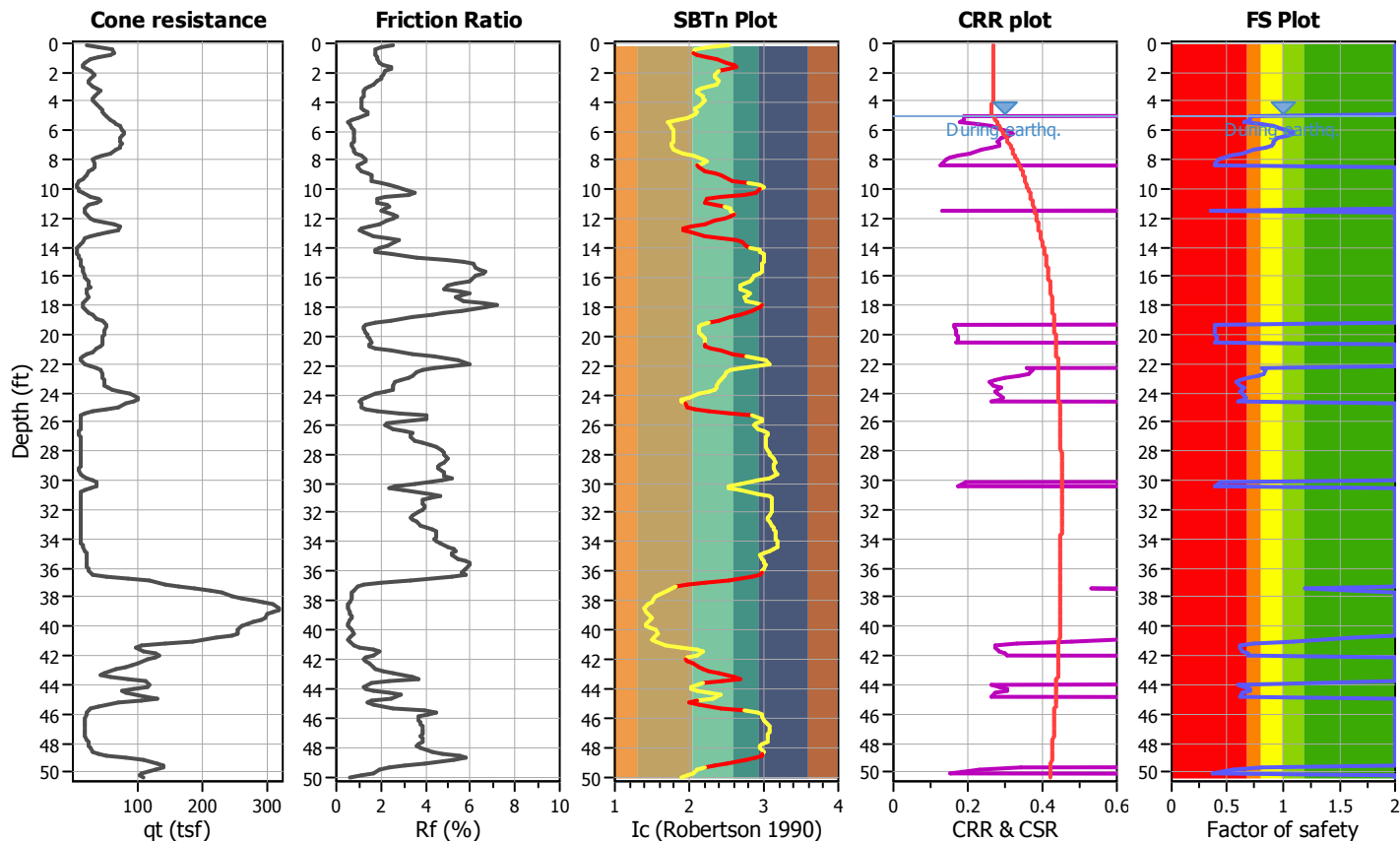
Project title : Shea Properties/Cypress

Location : Cypress, California

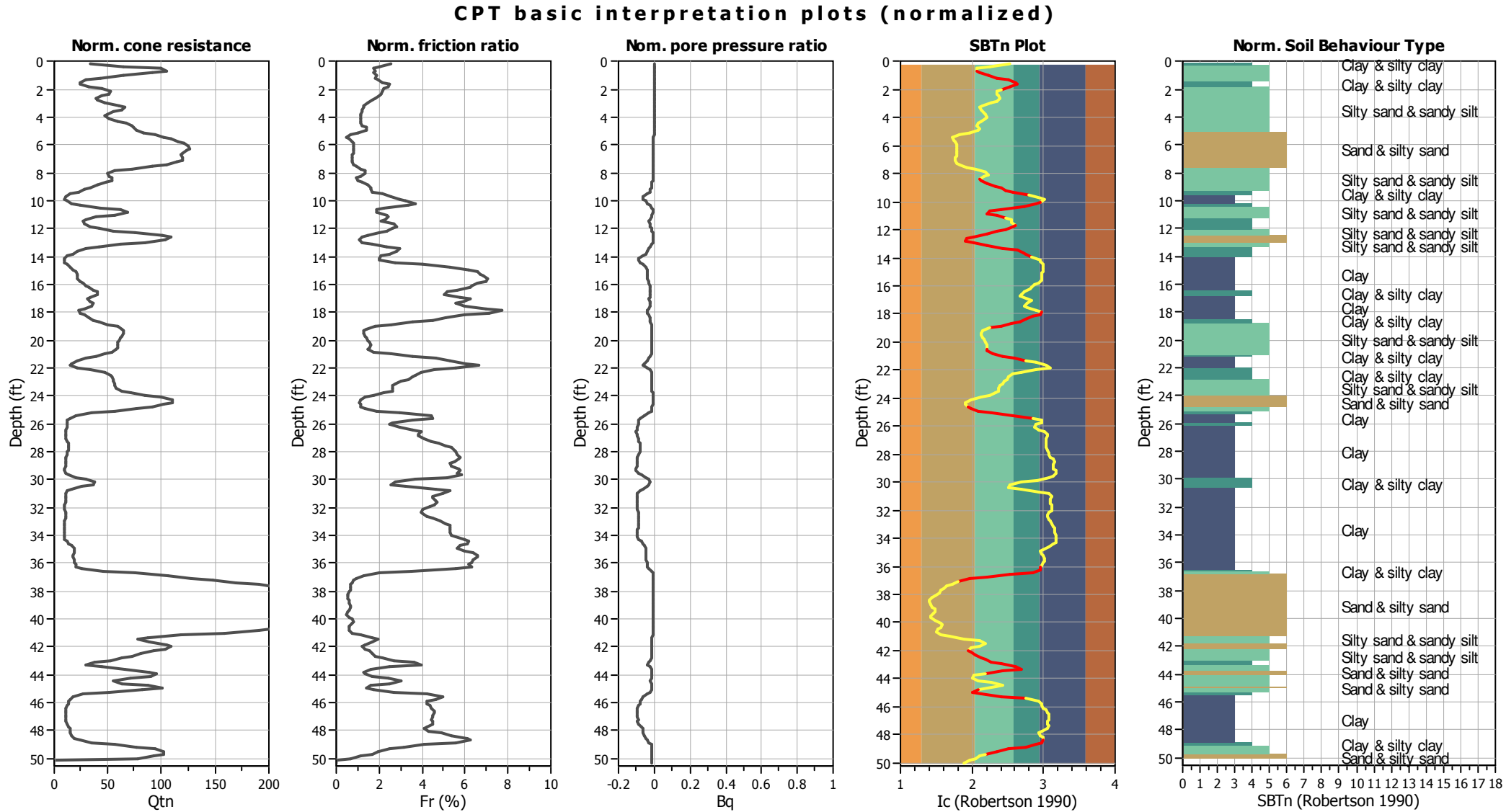
CPT file : CPT- 2

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



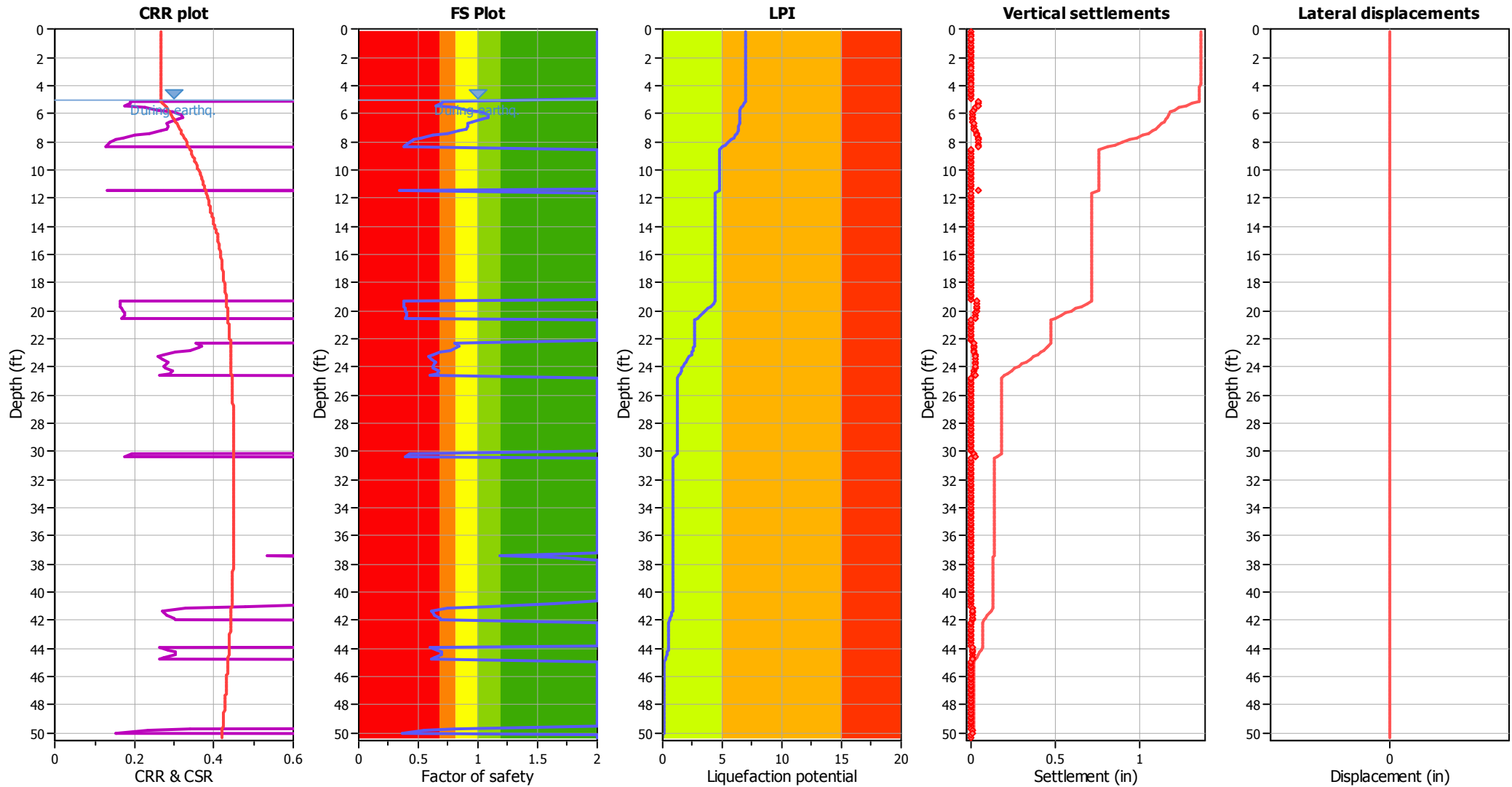
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

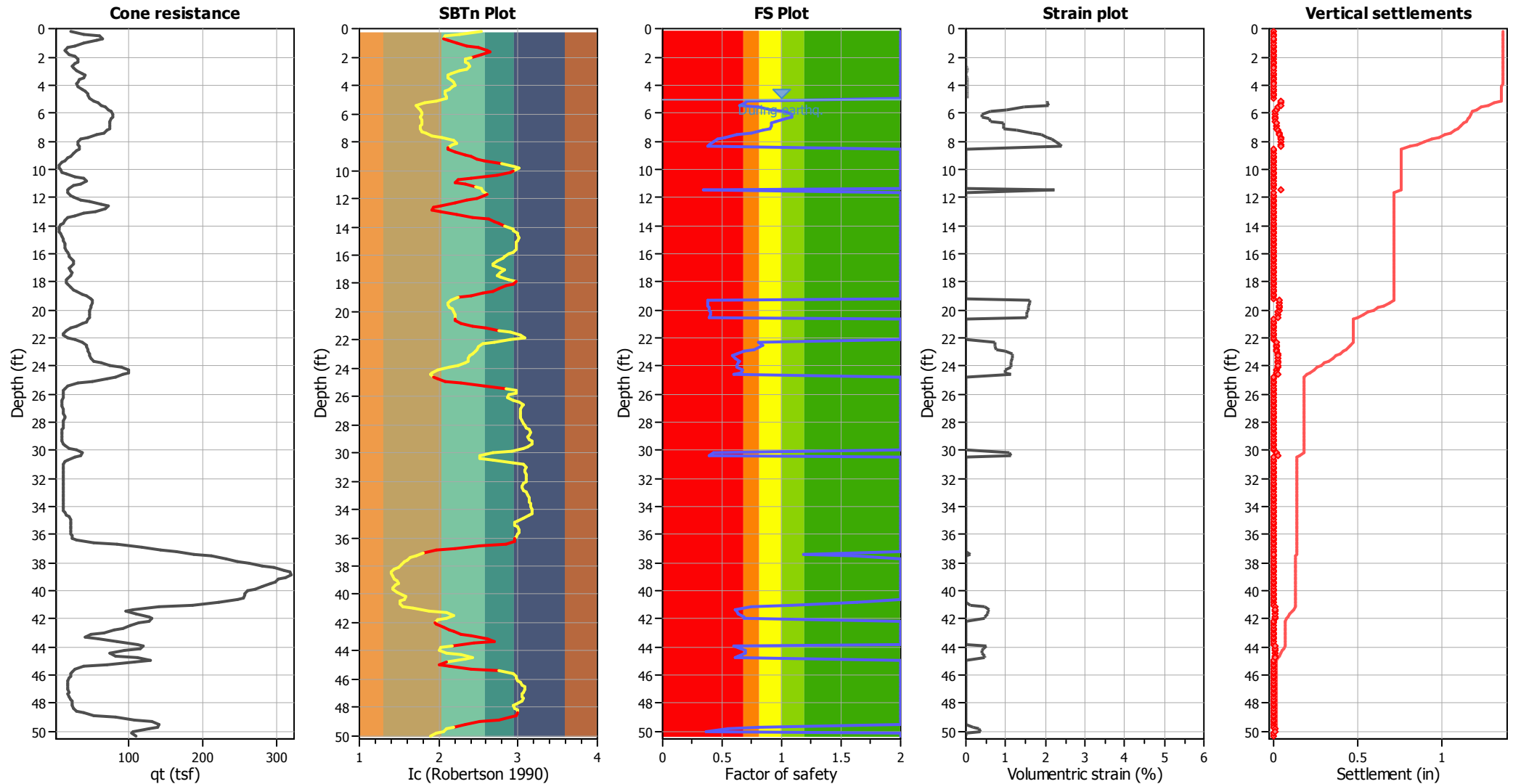
Red	Very high risk
Orange	High risk
Yellow	Low risk

Figure 10 consists of three plots related to soil liquefaction analysis:

- Left Plot:** Normalized CPT penetration resistance (log scale, 1 to 1,000) vs. Normalized friction ratio (%) (log scale, 0.1 to 10). The plot shows various soil behavior zones (A1, A2, B, C) and data points (red diamonds, green circles, blue circles). Arrows indicate trends like "Increasing  $\phi'$ ", "Normal Consolidation", "Increasing  $I_c$ ", and "Increasing Sensitivity".
- Middle Plot:** Cyclic Stress Ratio\* (CSR\*) (log scale, 0 to 0.8) vs.  $Q_{tn,cs}$  (linear scale, 0 to 200). The plot shows the boundary between "Liquefaction" (red diamonds) and "No Liquefaction" (blue circles).
- Right Plot:** Thickness of liquefiable sand layer,  $H_2$  (m) (linear scale, 0.0 to 12.0) vs. Thickness of surface layer,  $H_1$  (m) (linear scale, 0 to 10). The plot shows the boundary for "Liquefaction-induced ground damage" and "Max. acc. 200gal", "Max. acc. 4300gal", and "Max. acc. 400-500gal". A specific point is labeled "CPT-2 (6.99)".

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

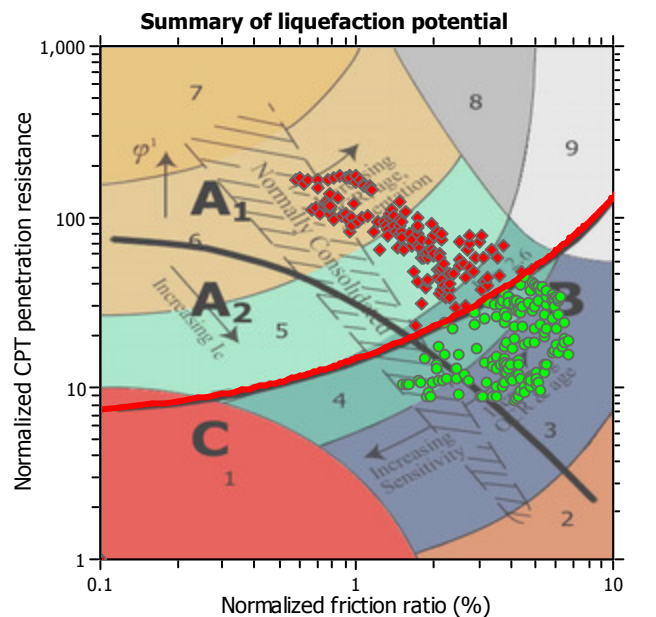
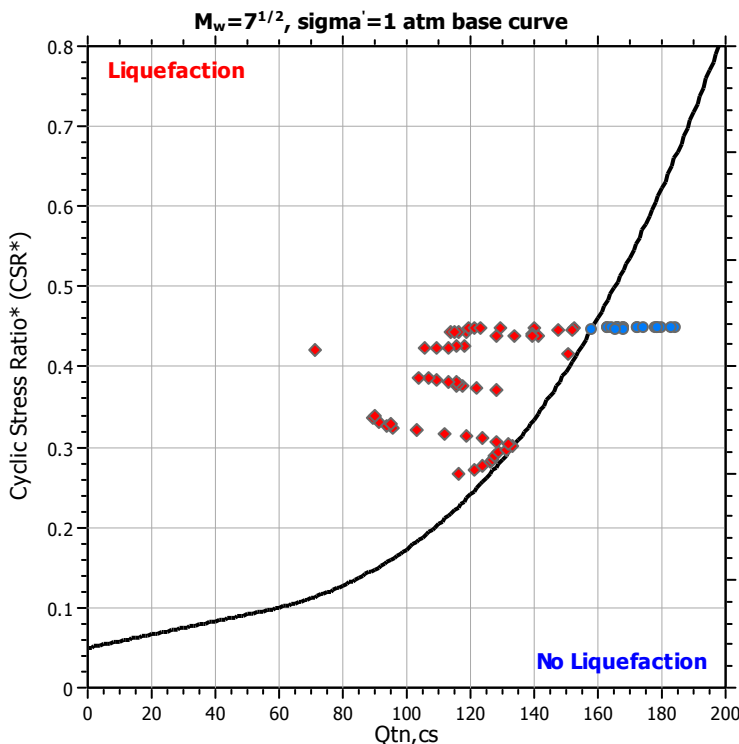
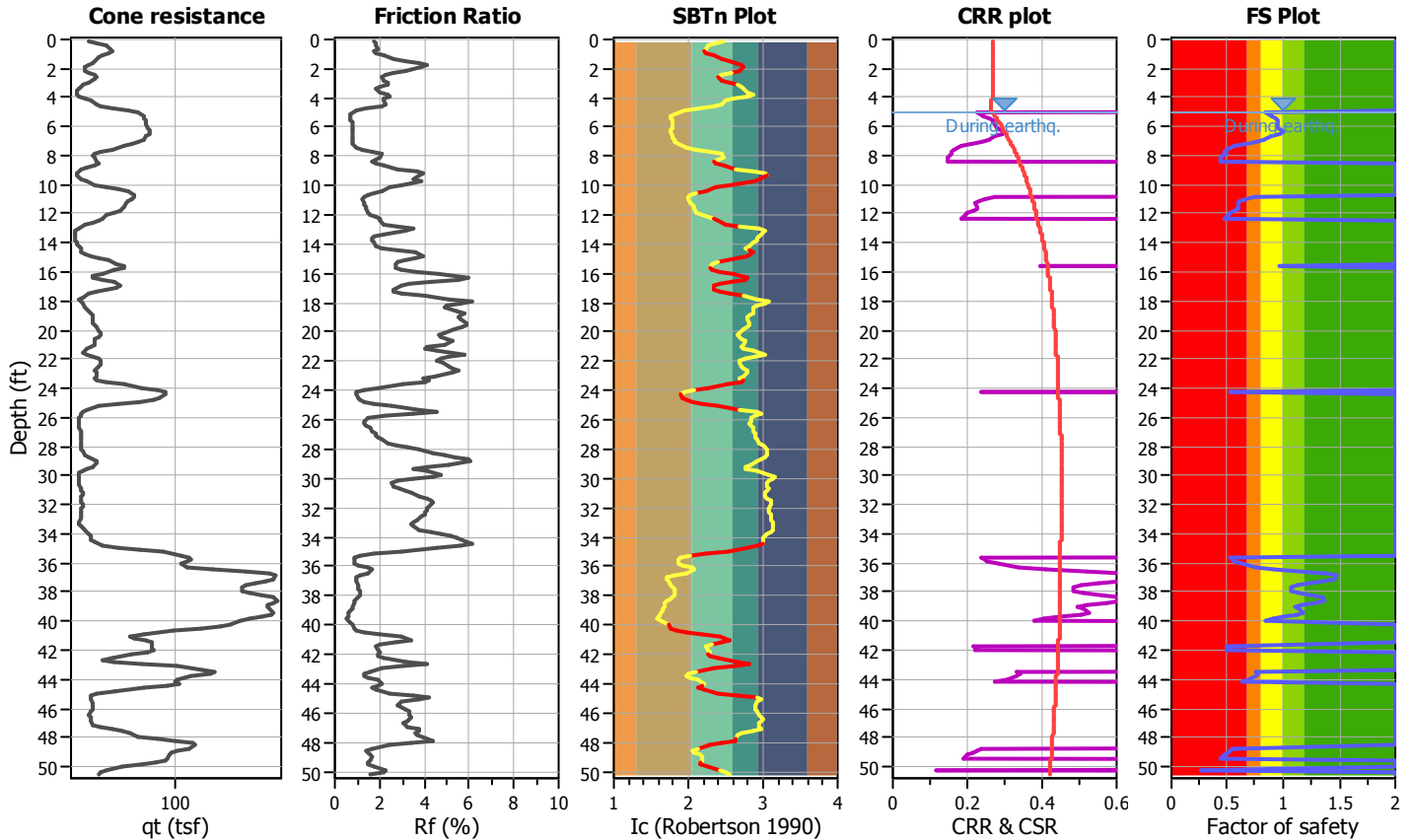
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 3

### Input parameters and analysis data

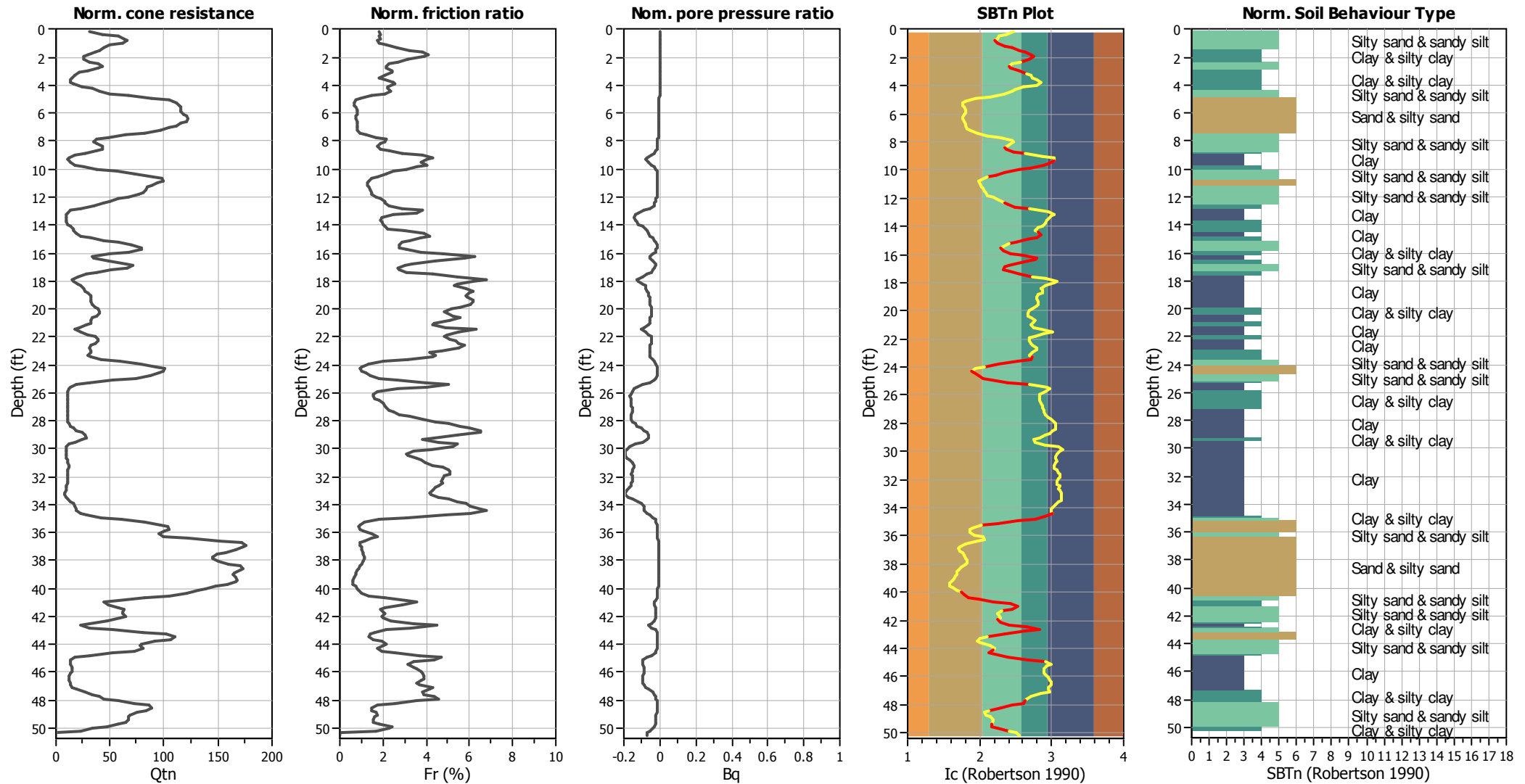
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



## CPT basic interpretation plots (normalized)



## Input parameters and analysis data

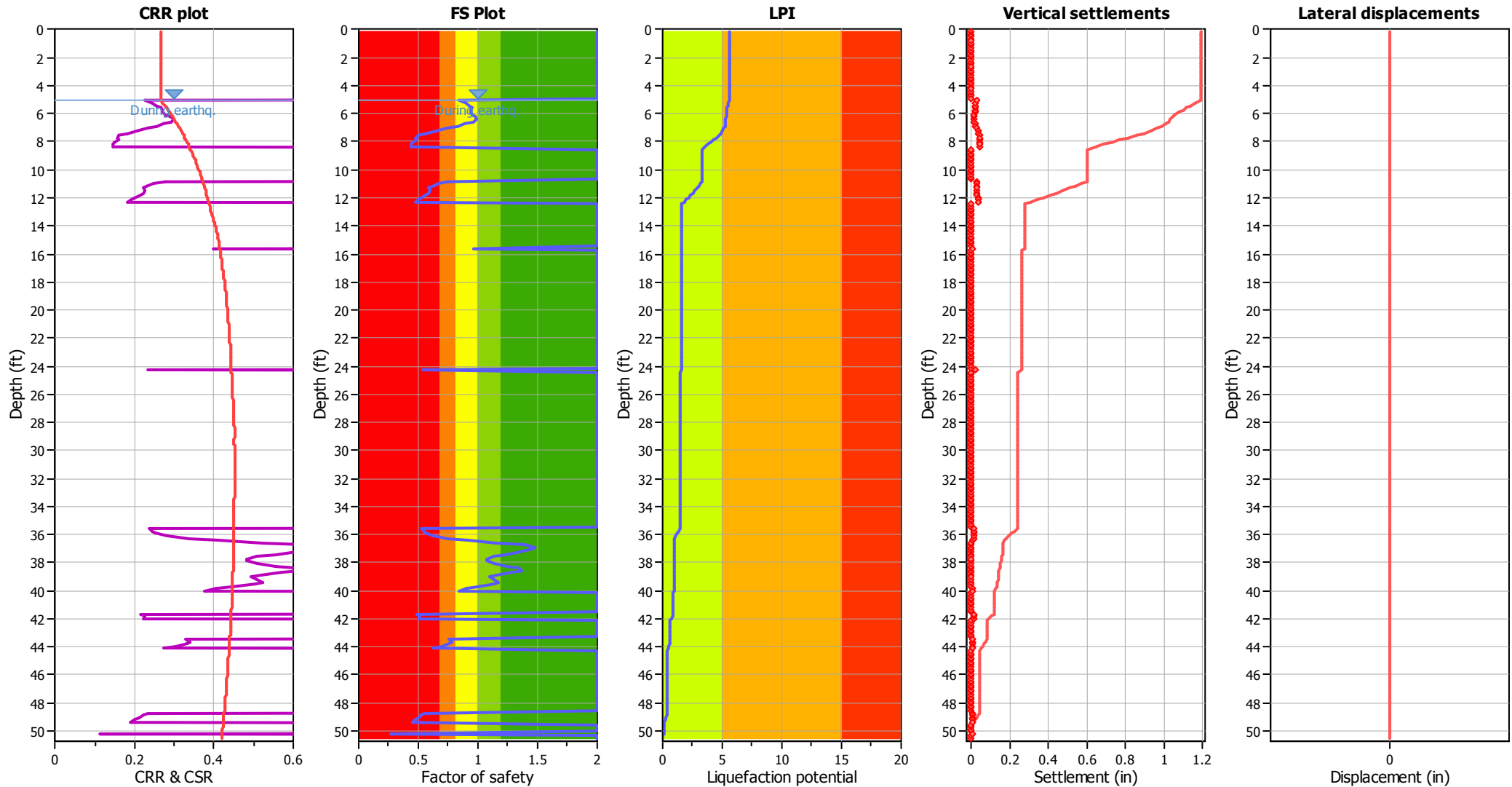
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

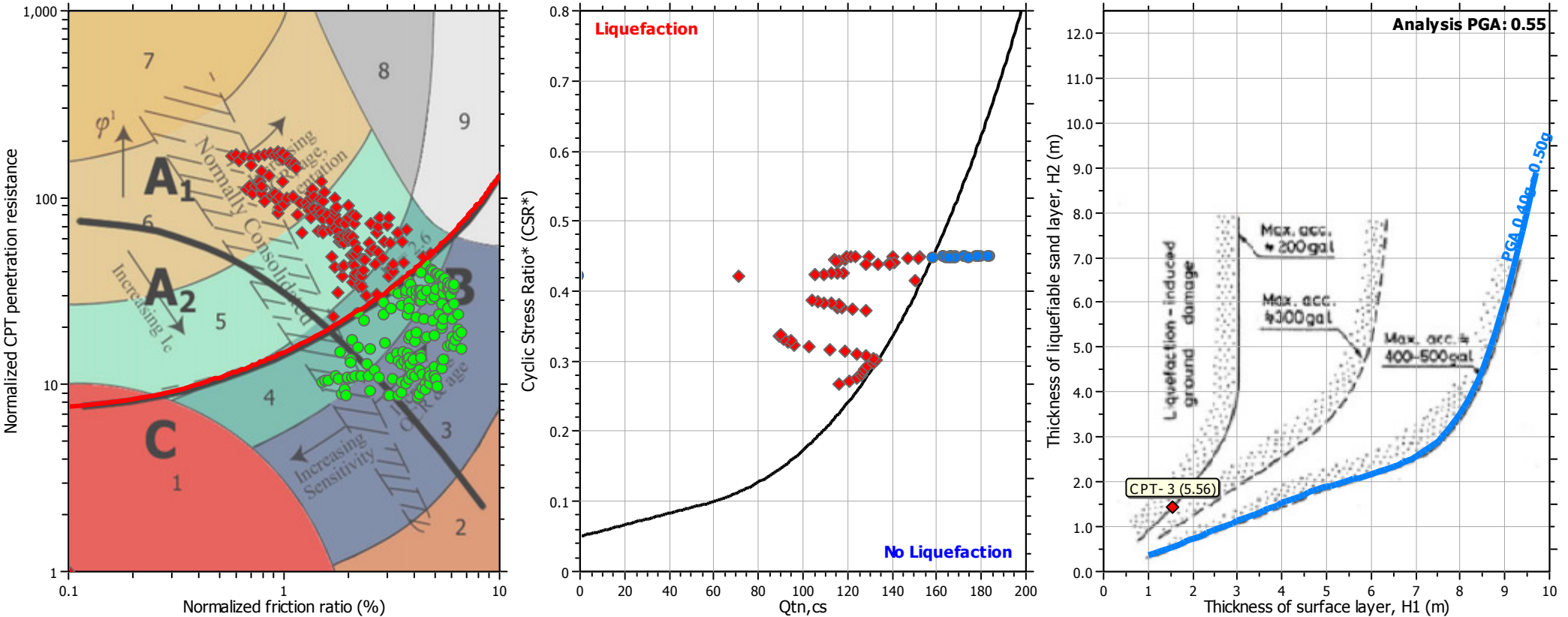
F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

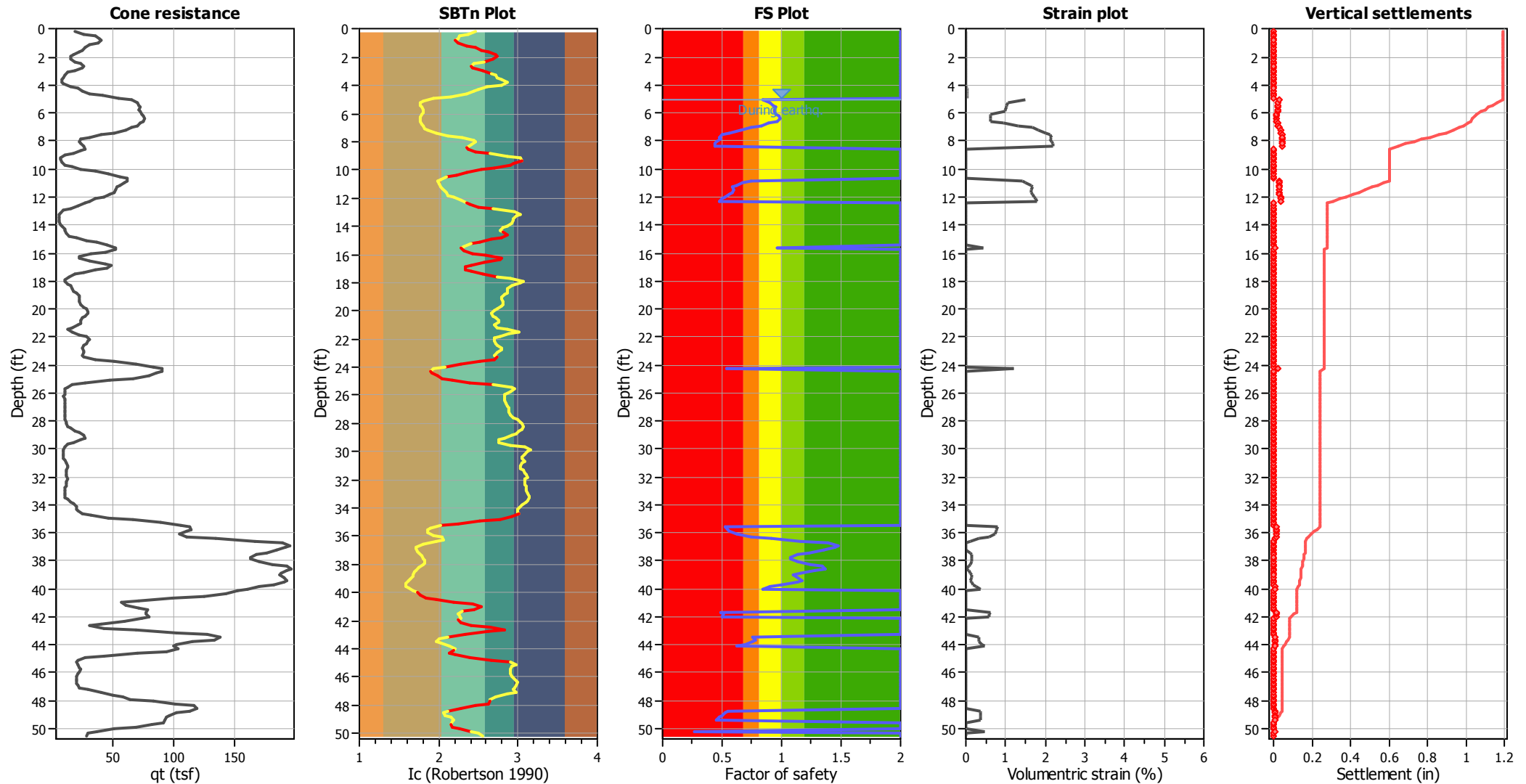
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_0$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

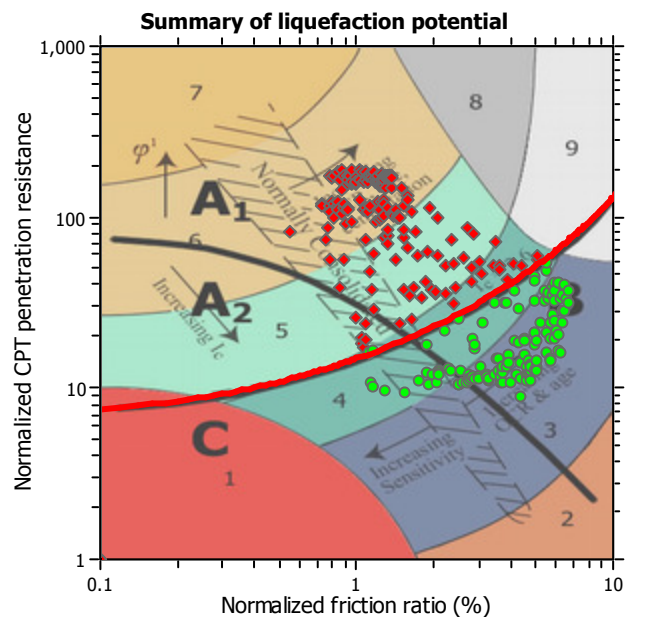
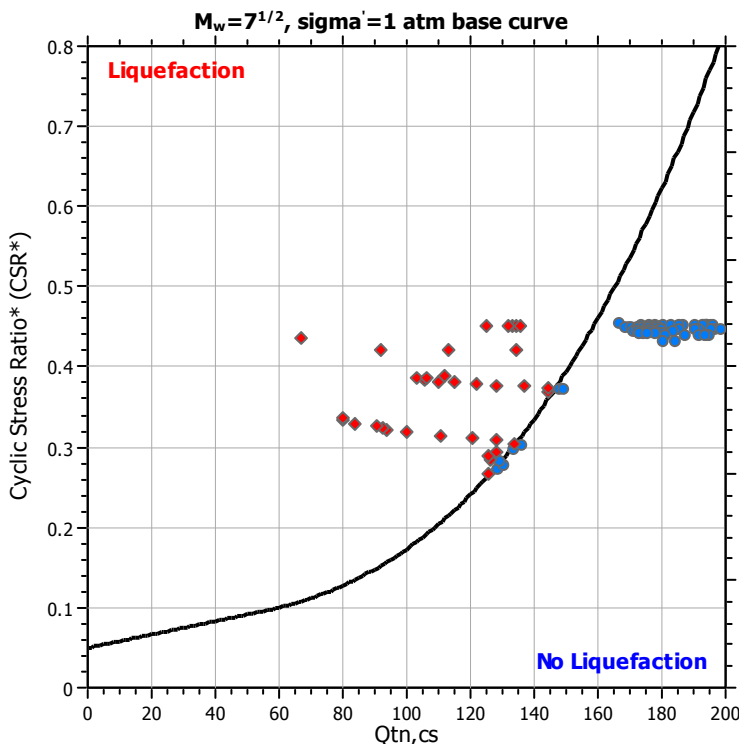
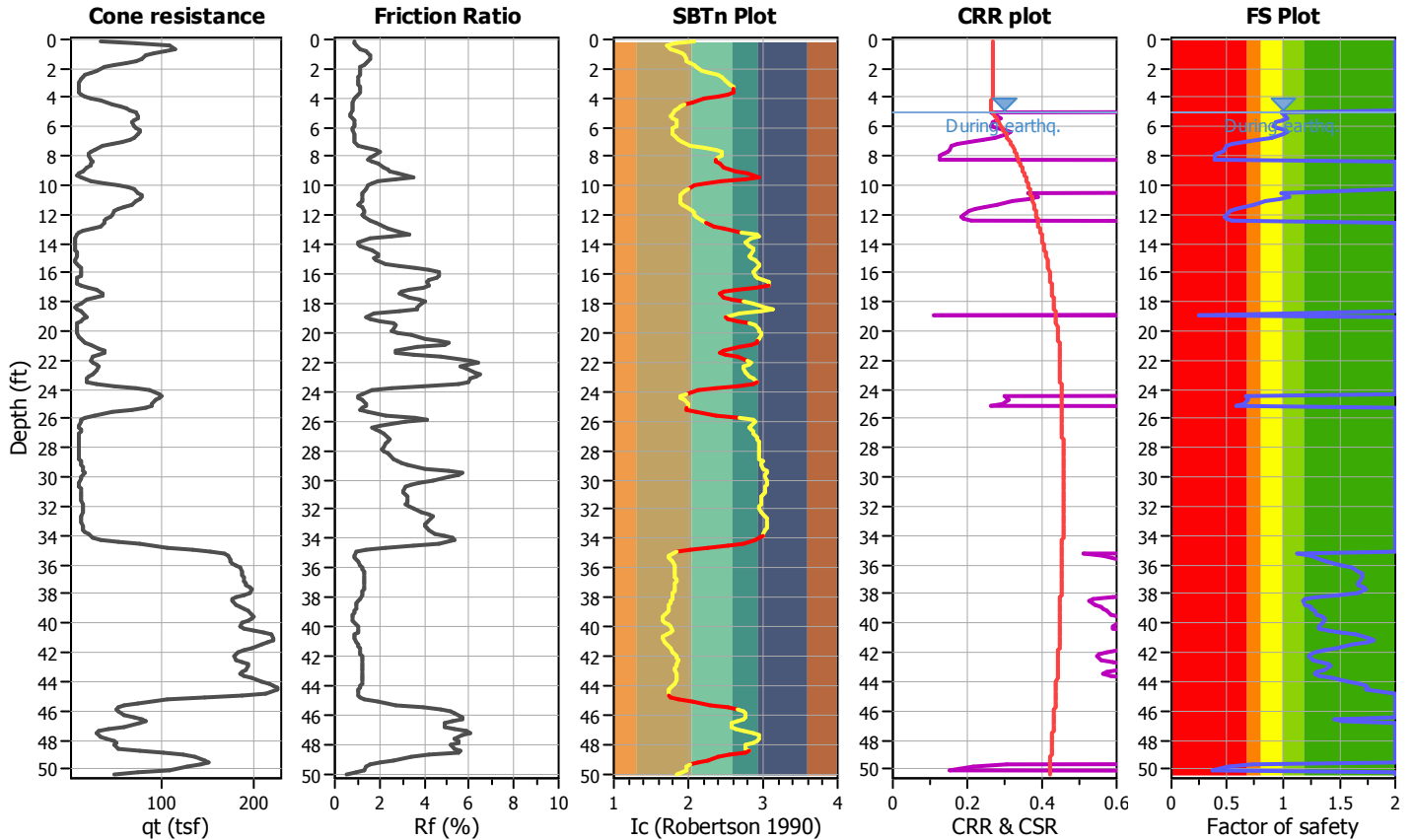
Project title : Shea Properties/Cypress

Location : Cypress, California

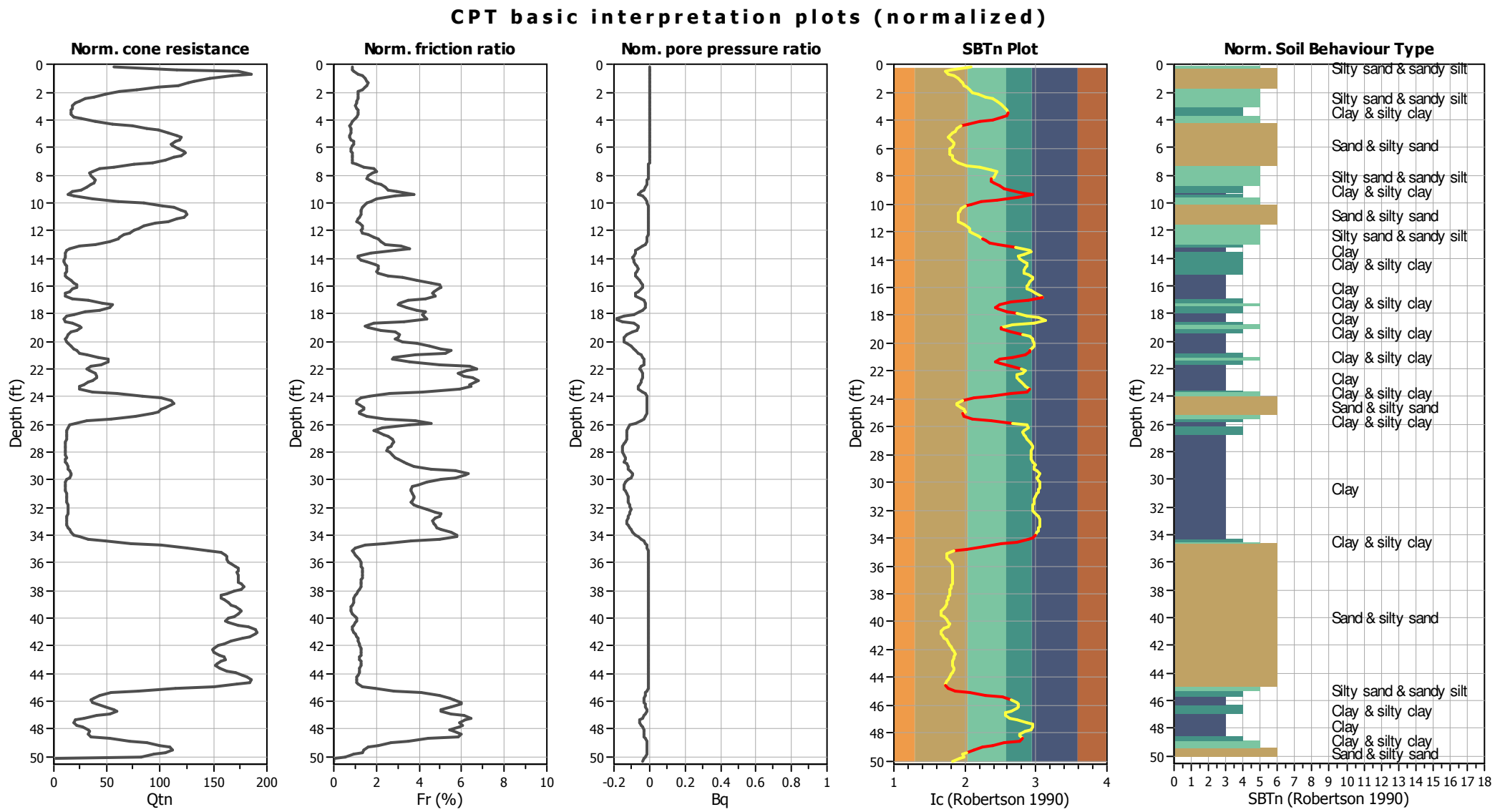
CPT file : CPT- 4

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



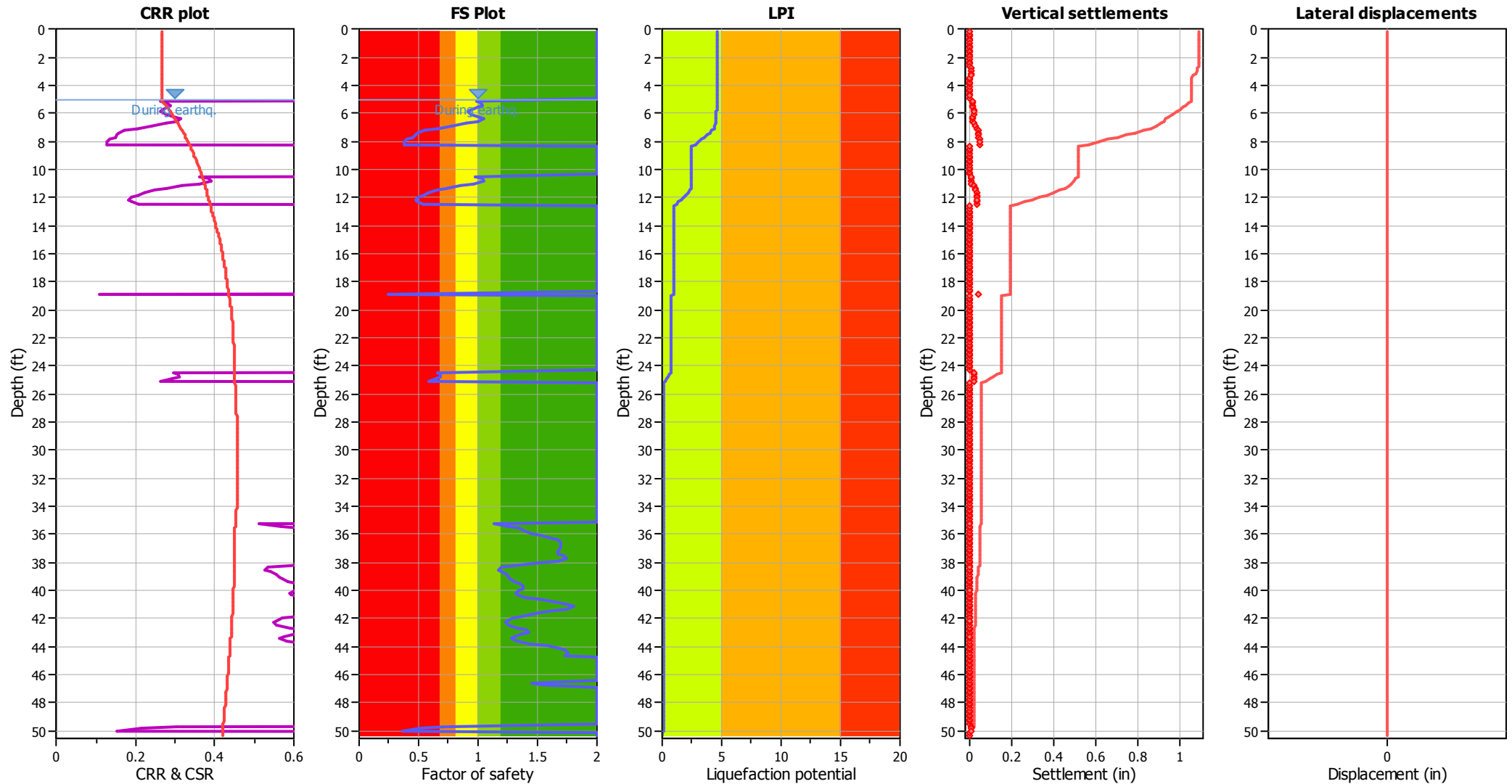
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

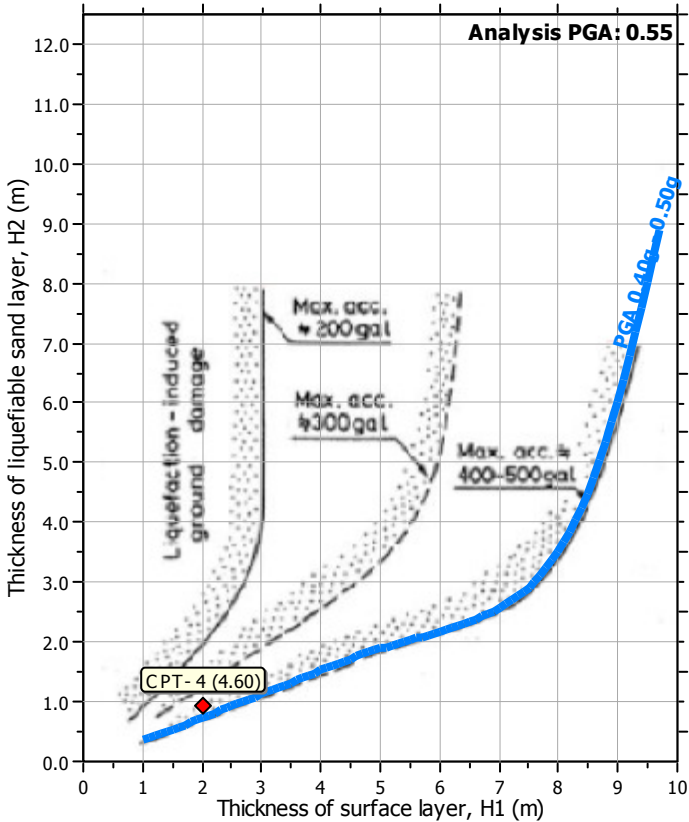
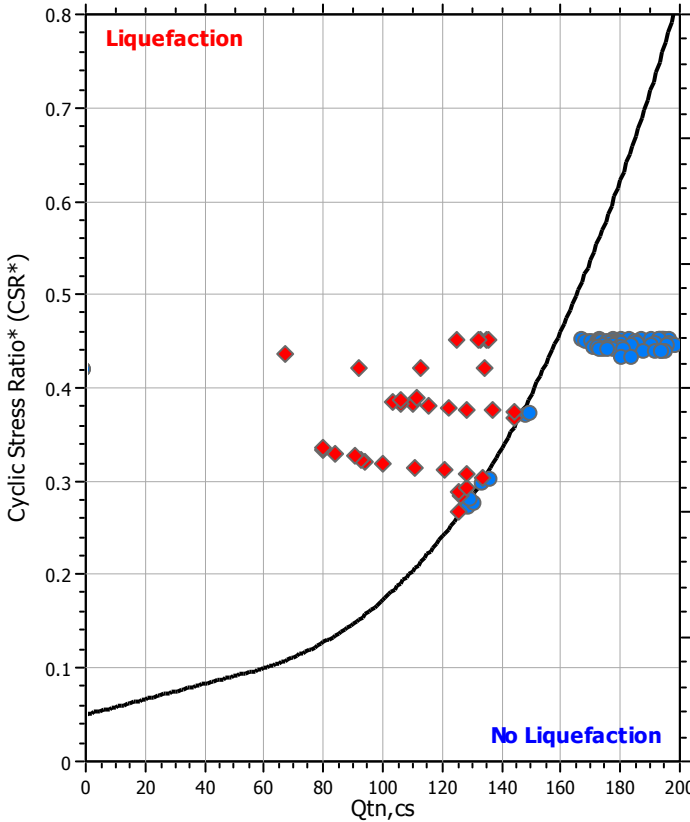
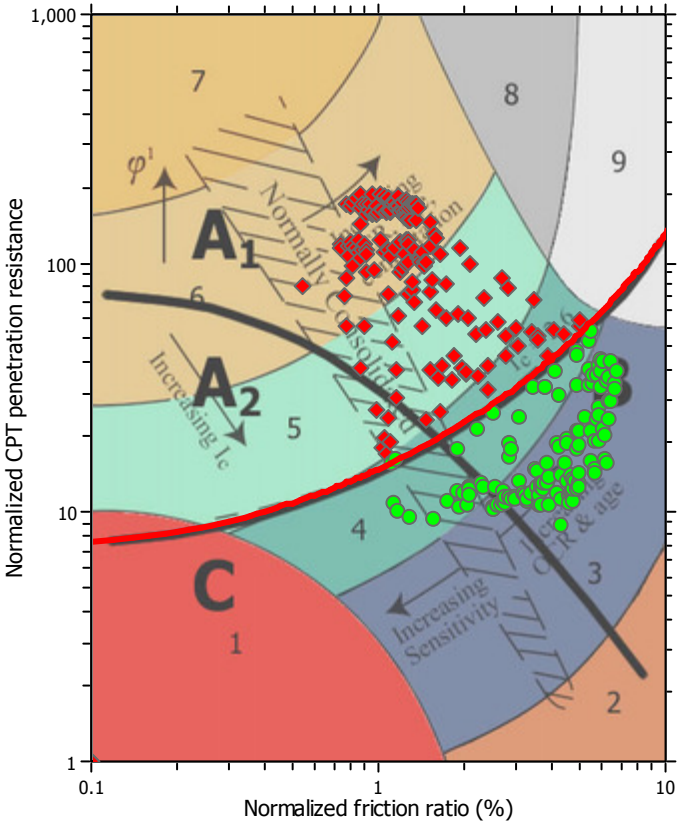
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

Liquefaction analysis summary plots

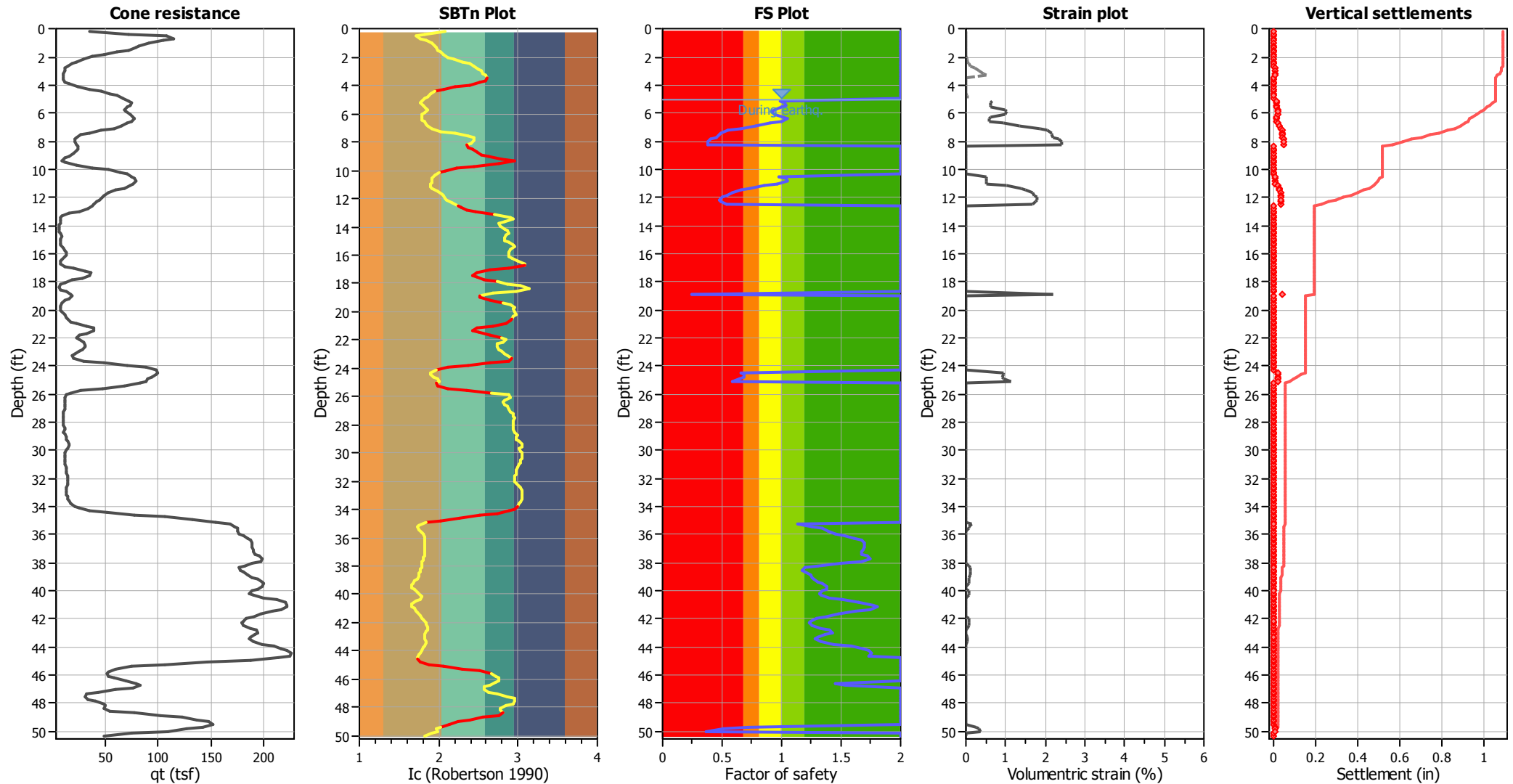


Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain





NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

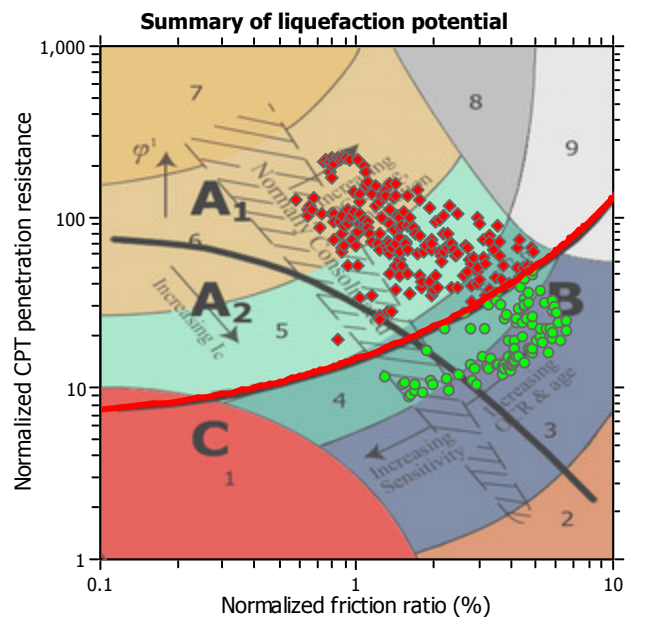
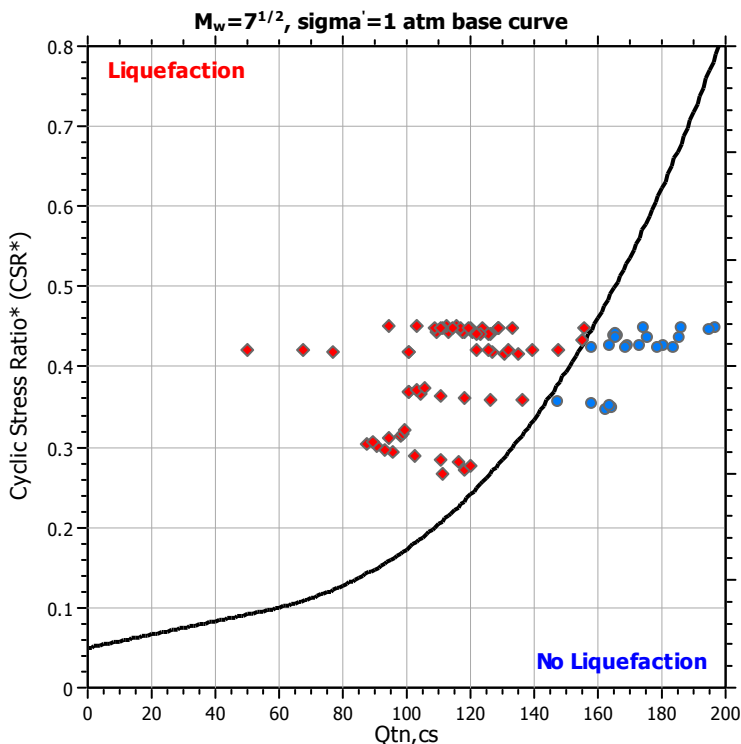
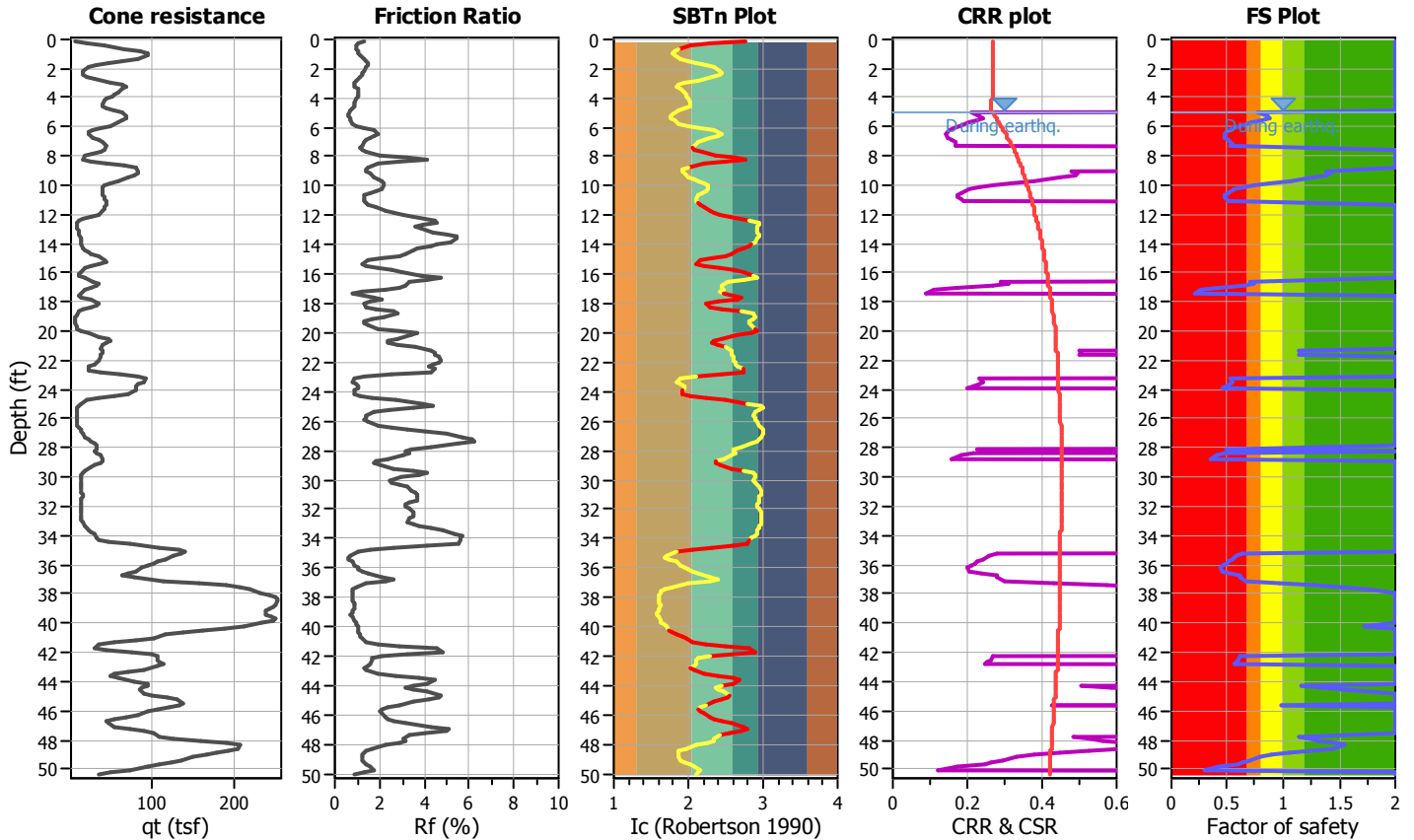
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 5

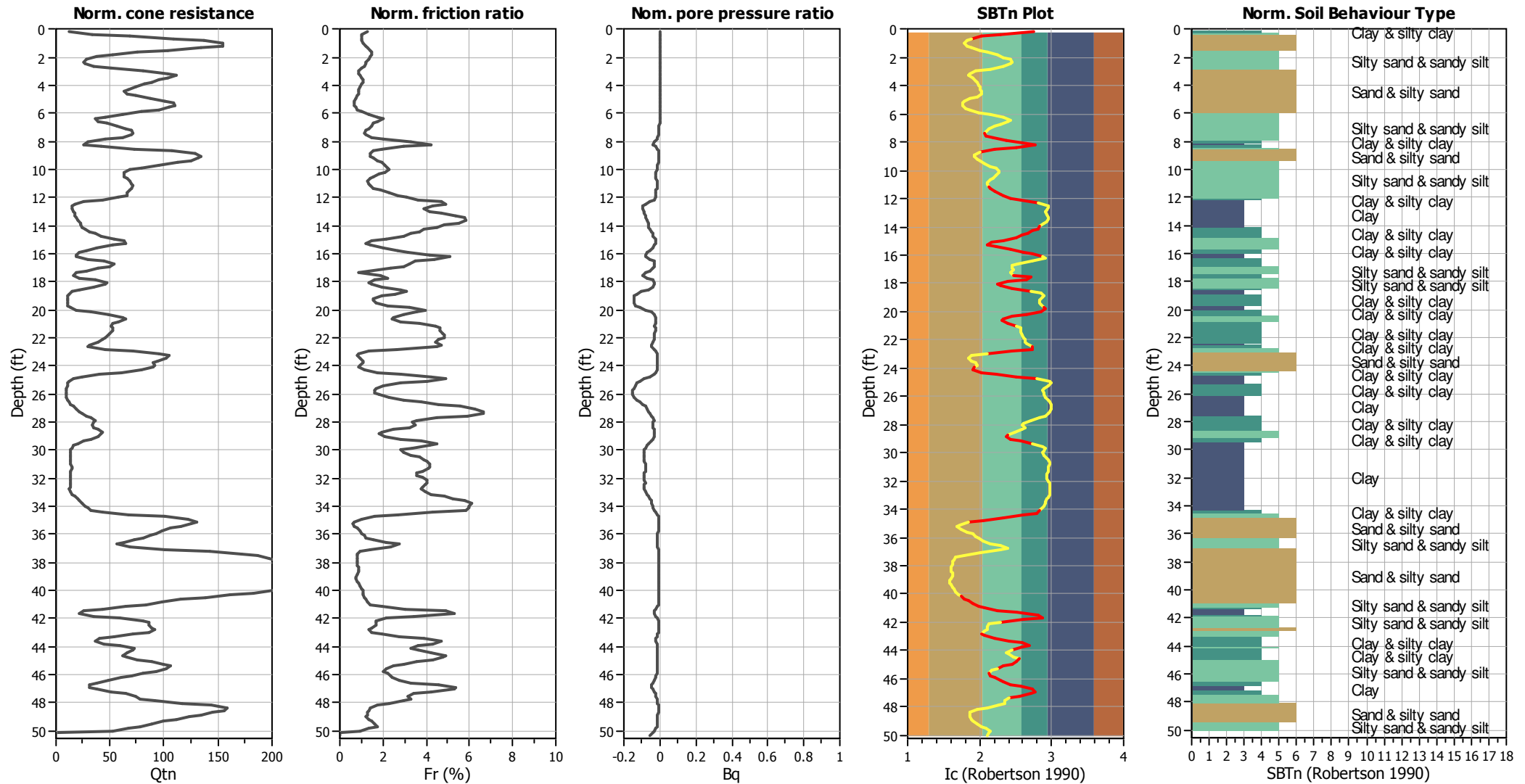
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plots (normalized)



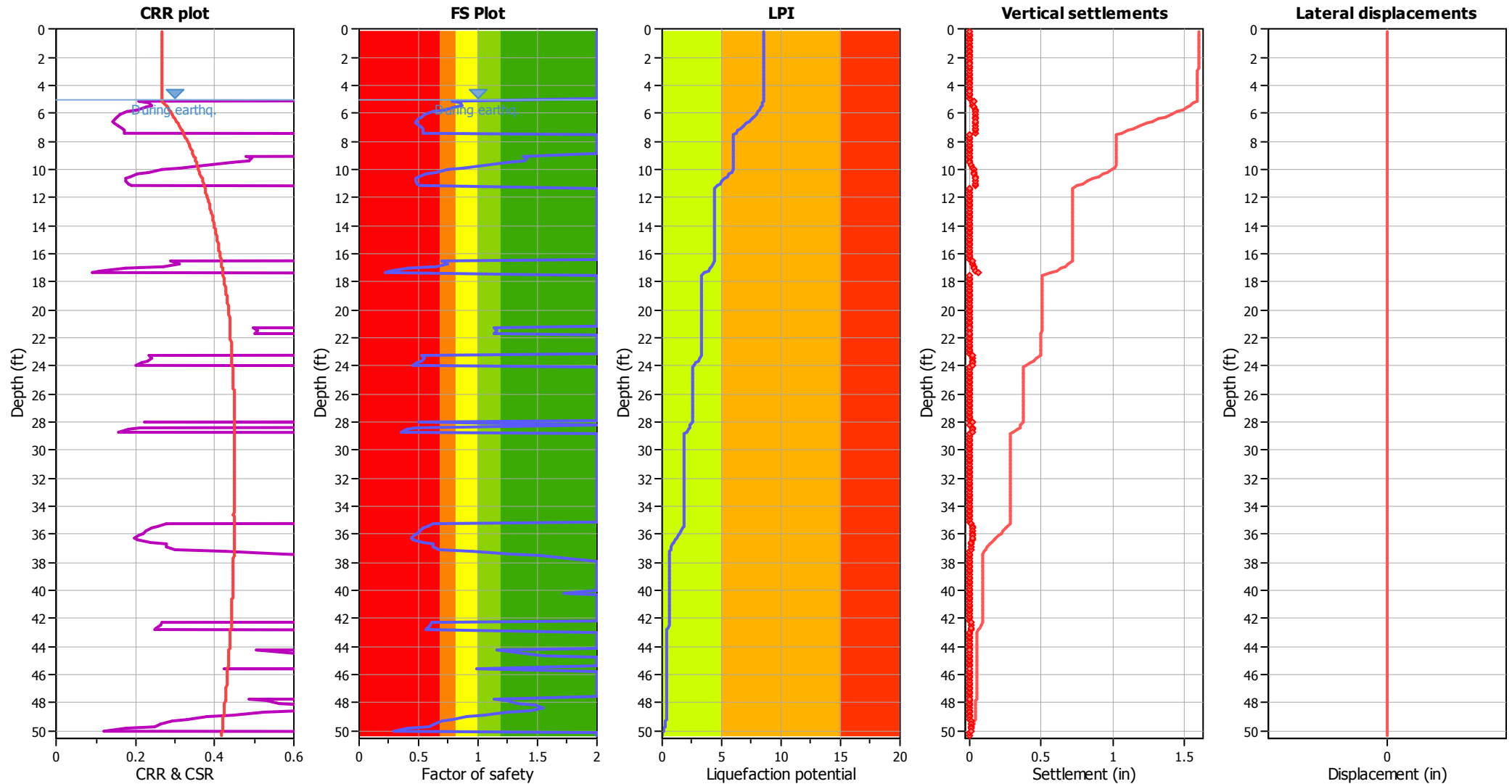
## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

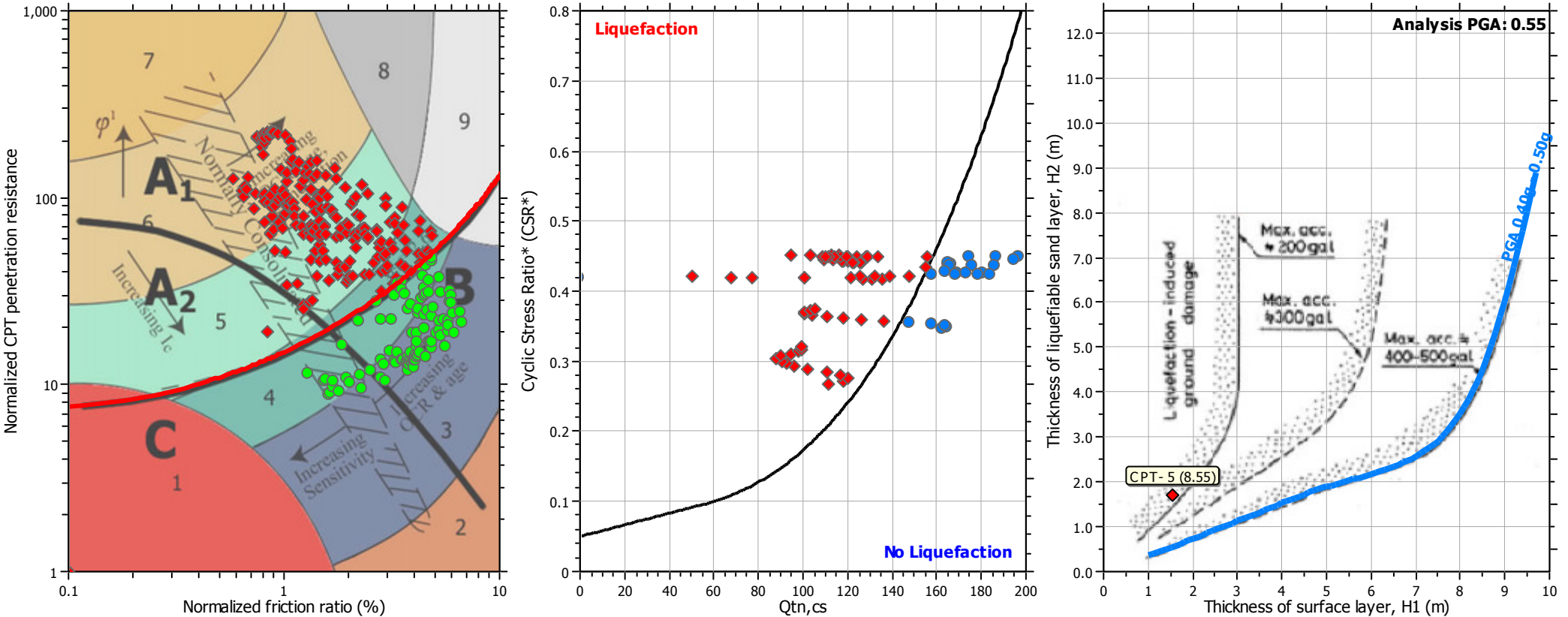
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

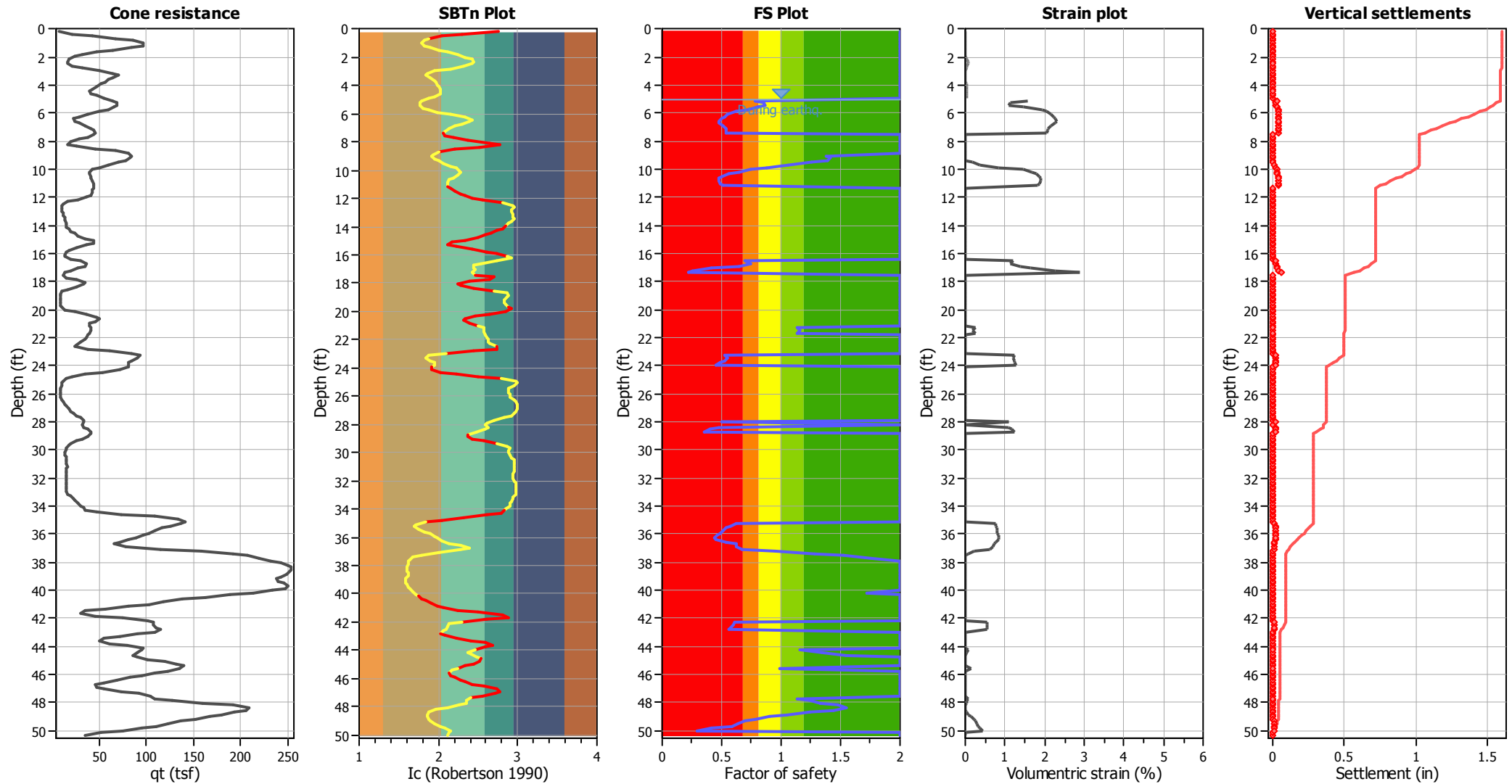
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

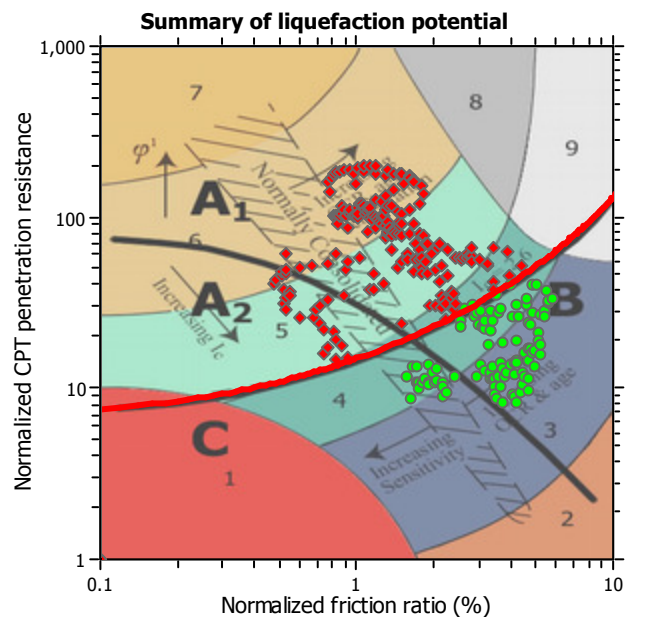
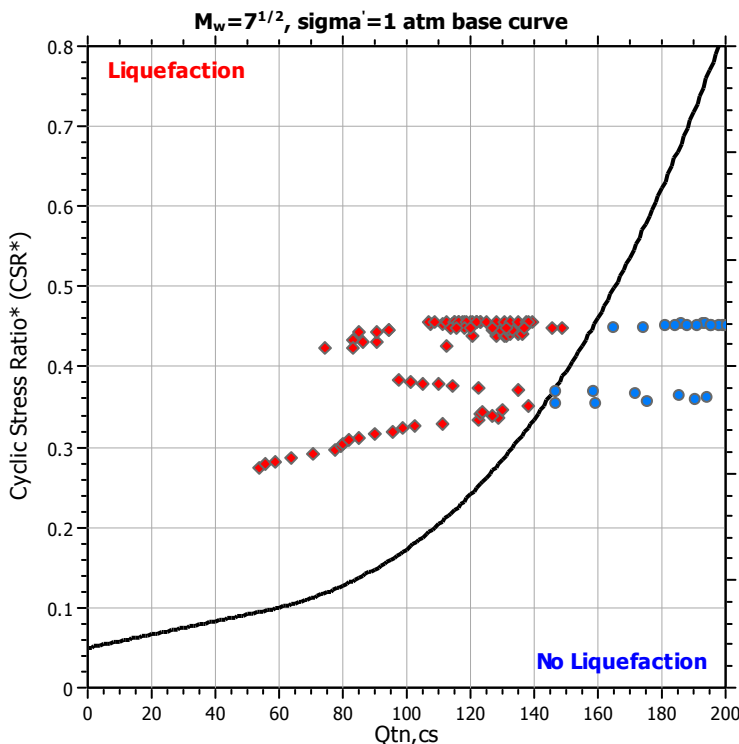
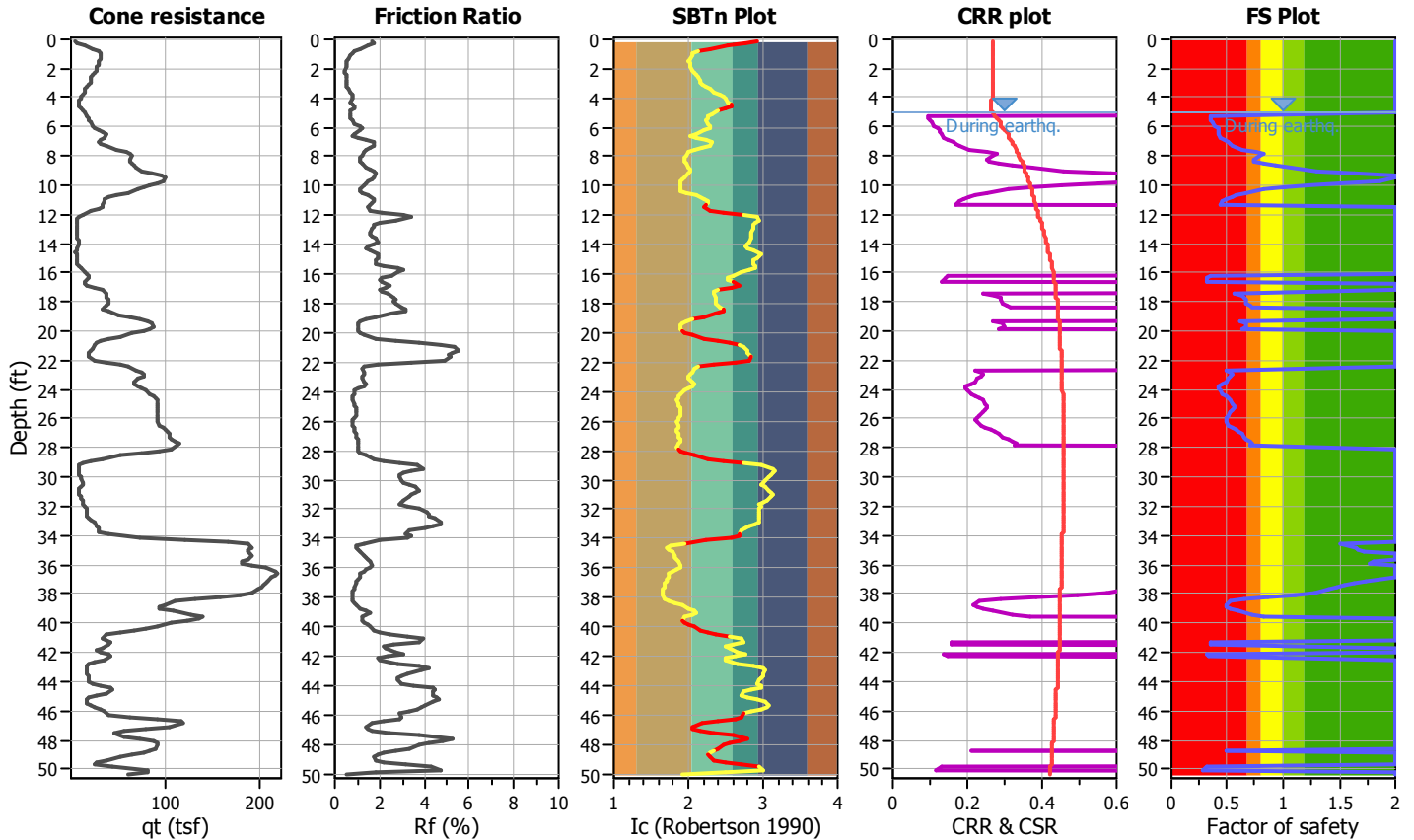
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 6

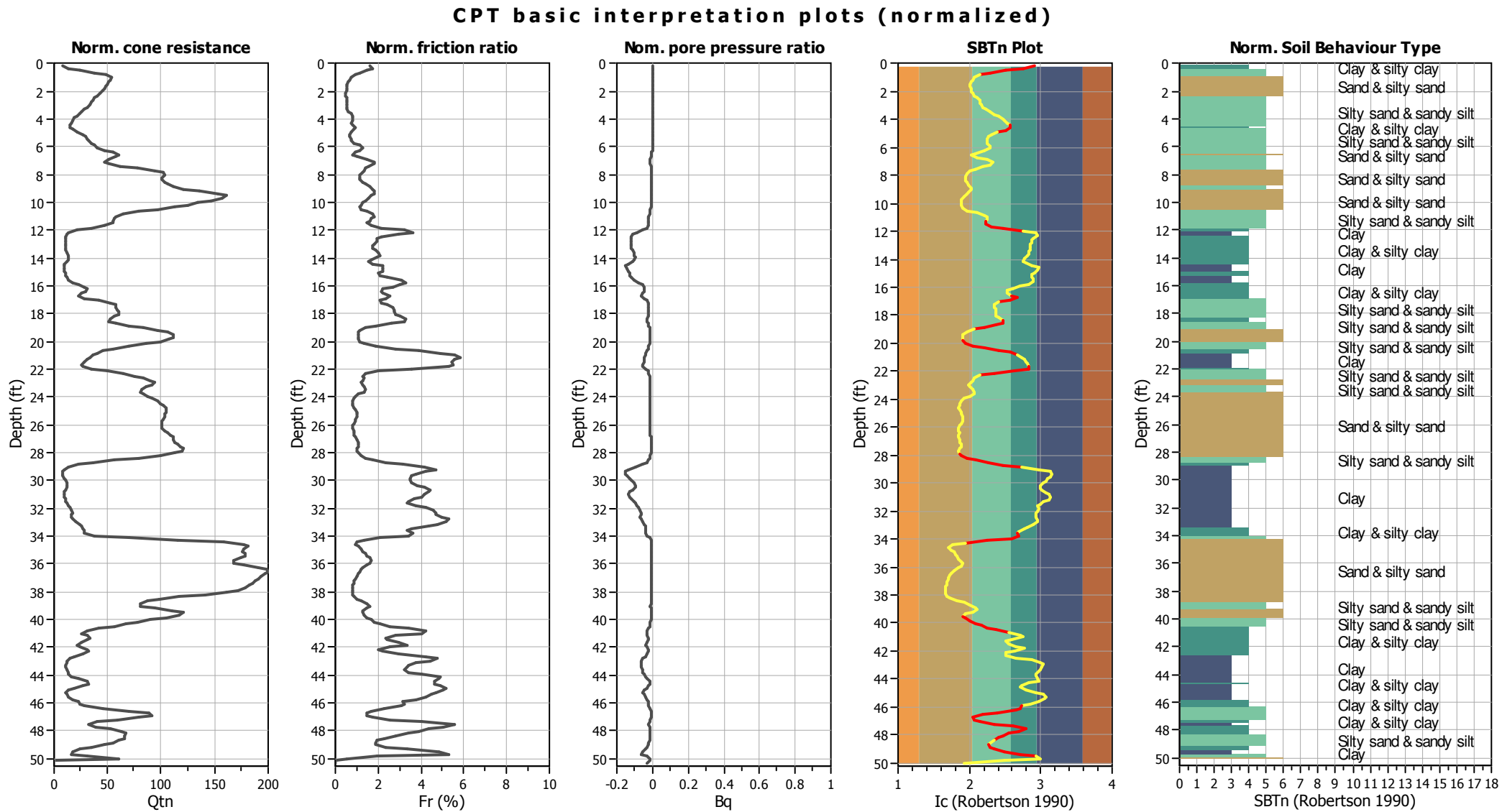
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry





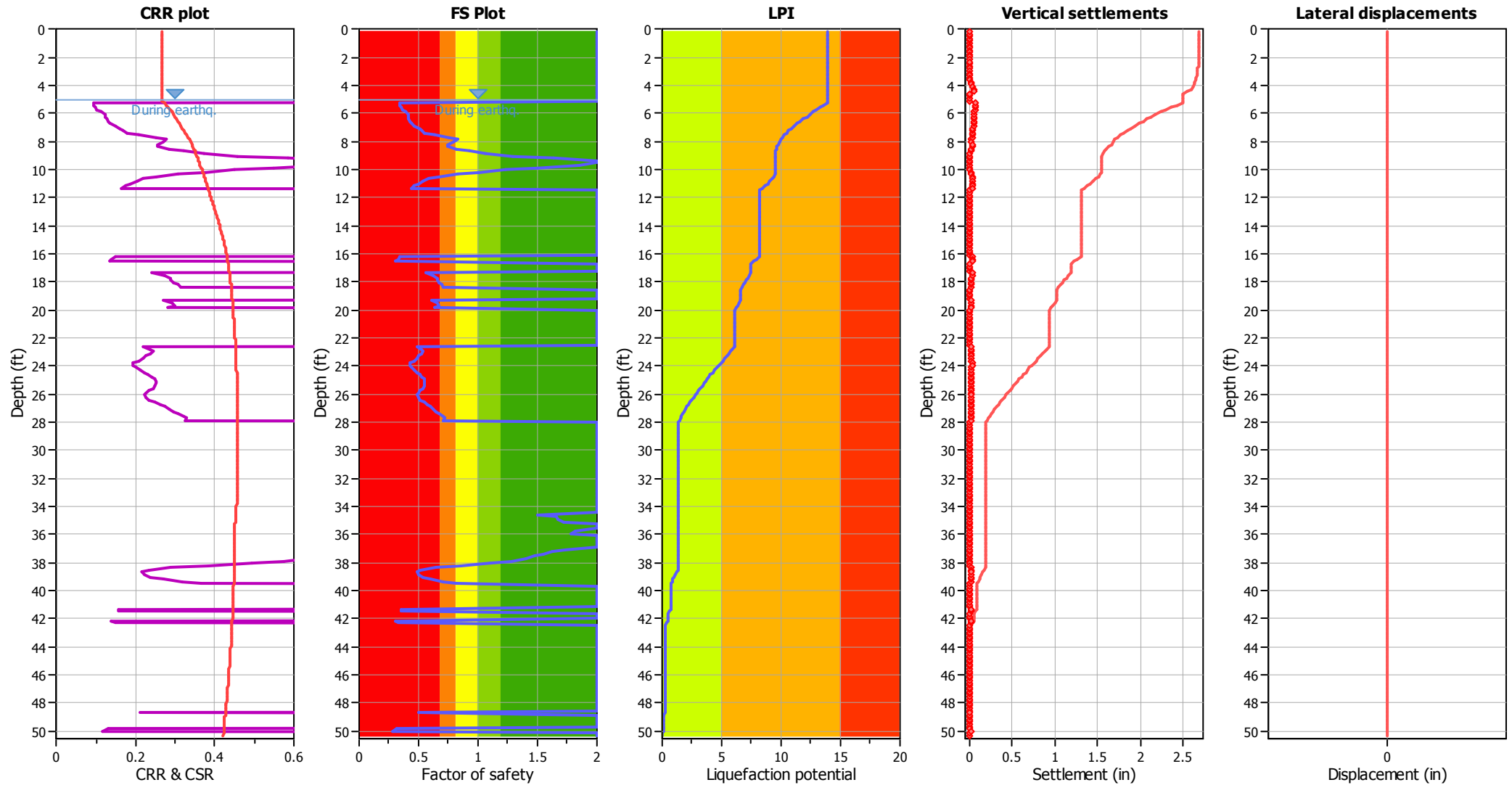
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

### F.S. color scheme

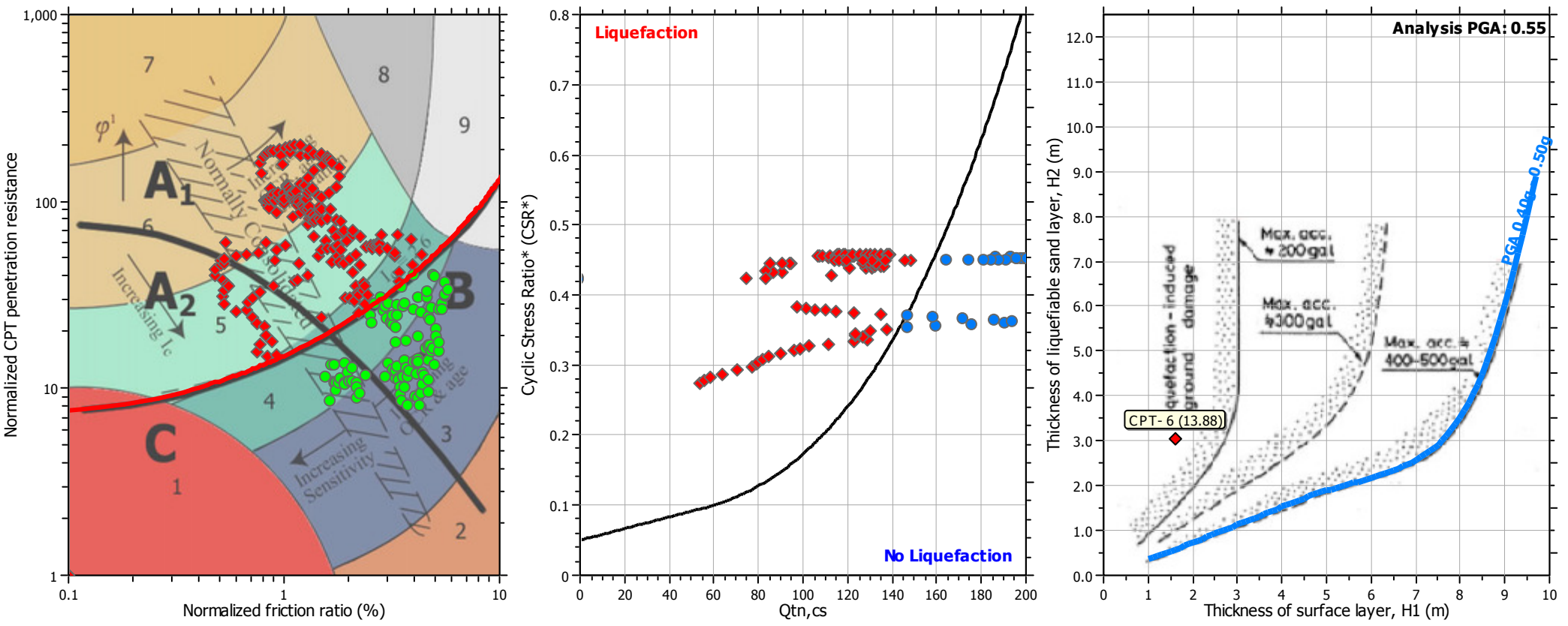
<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk



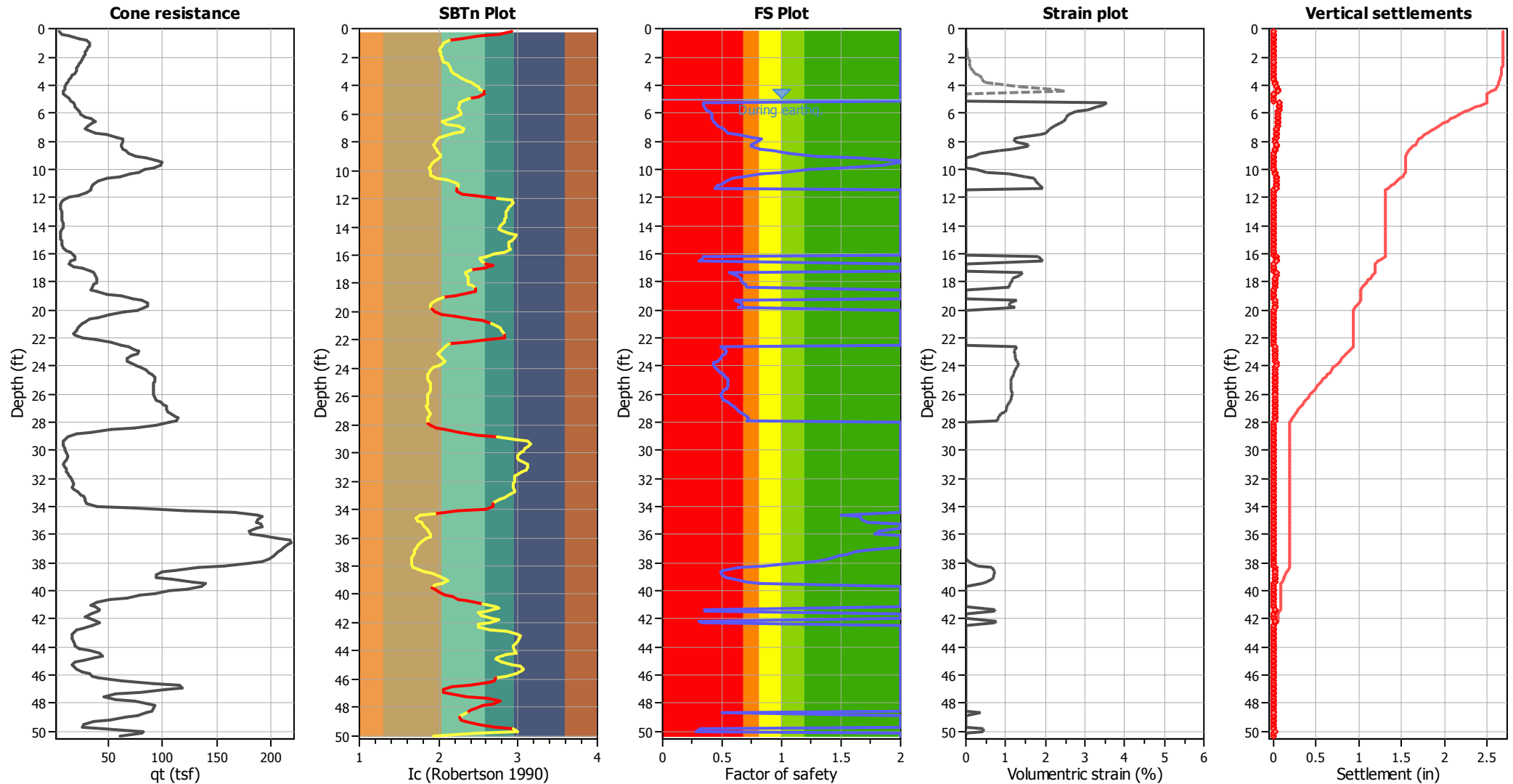
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

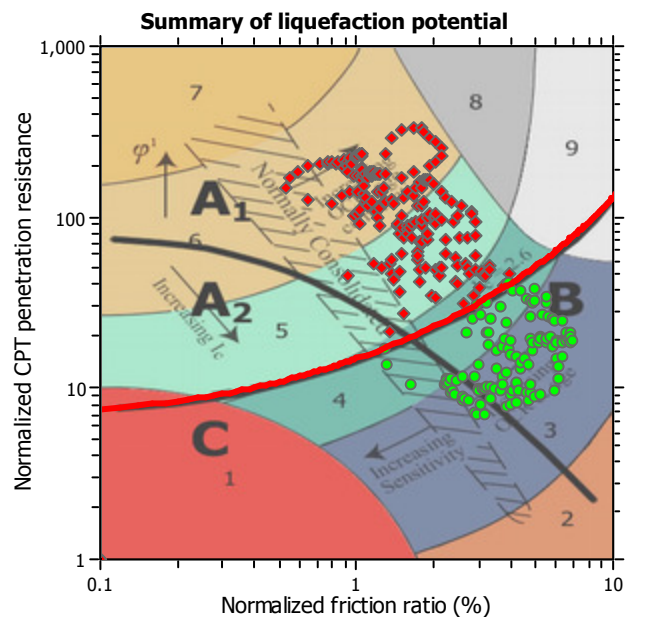
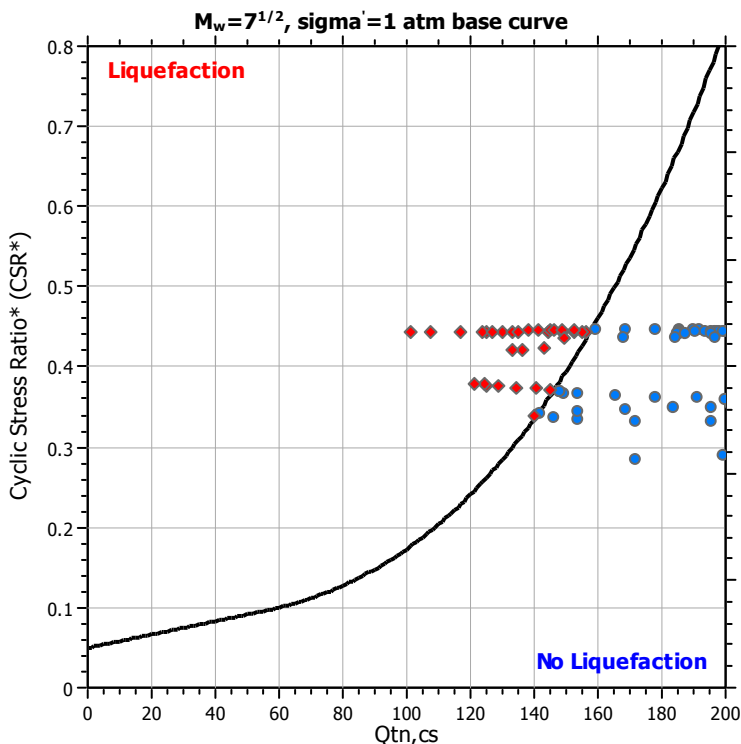
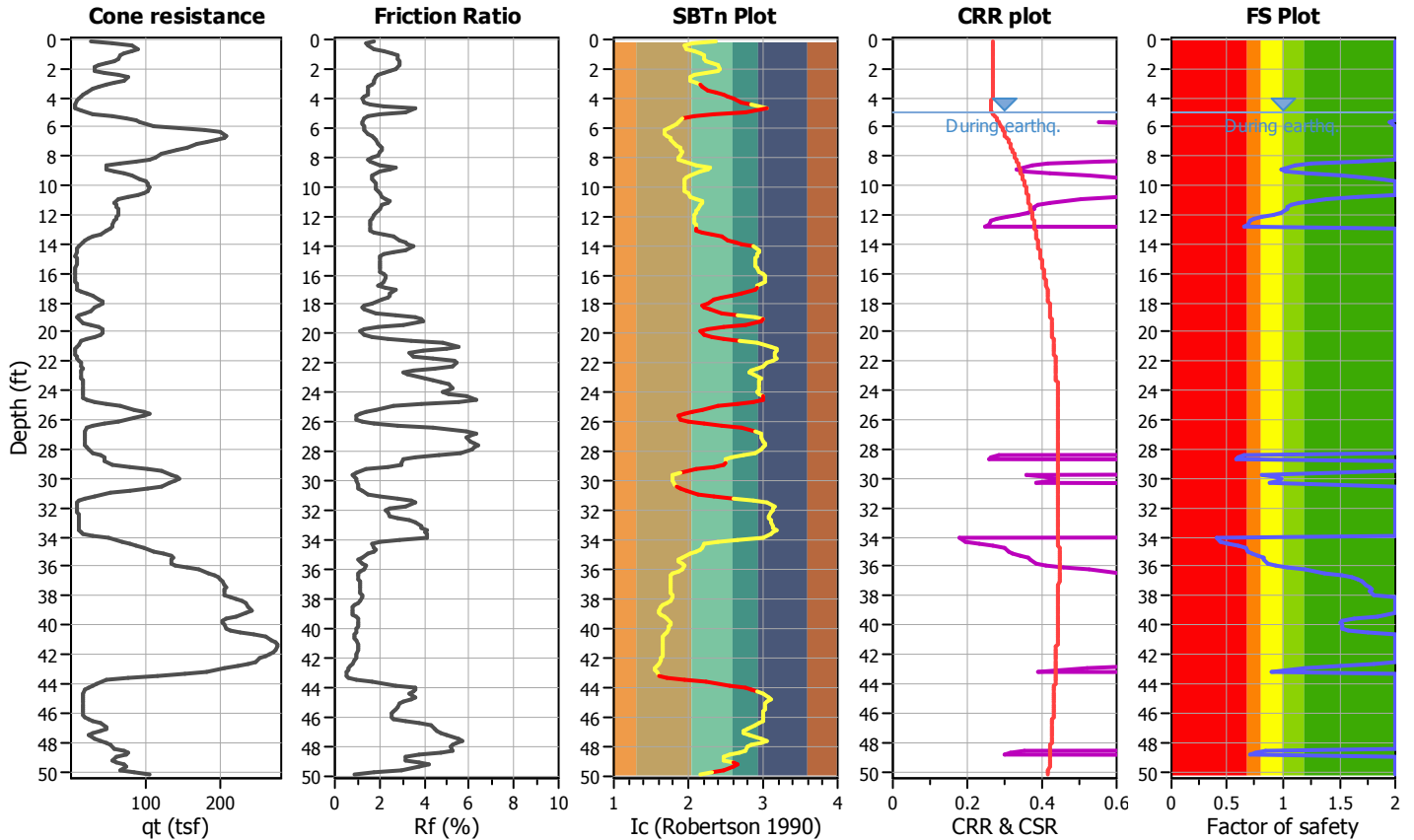
Project title : Shea Properties/Cypress

Location : Cypress, California

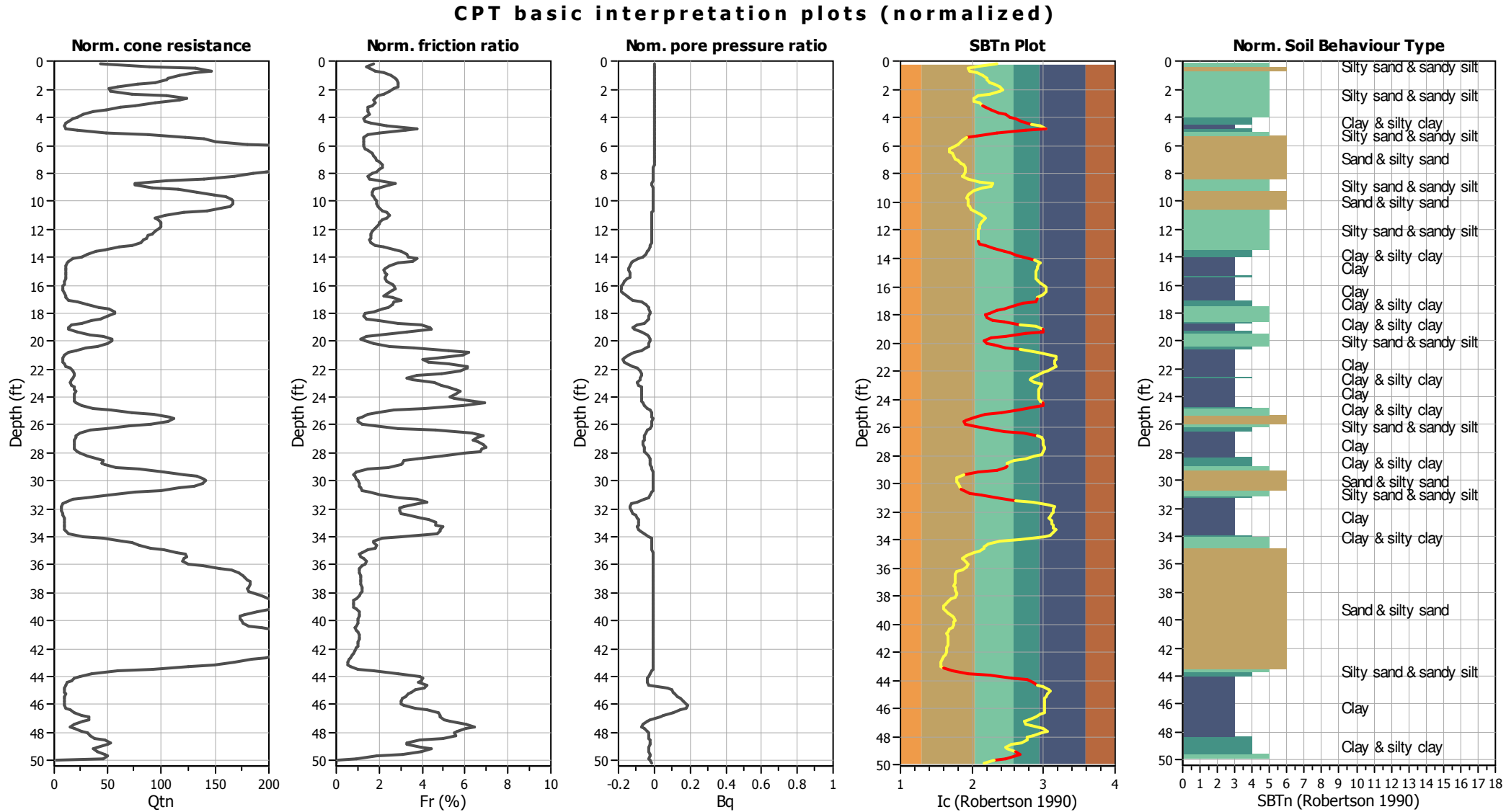
CPT file : CPT- 7

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_g$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

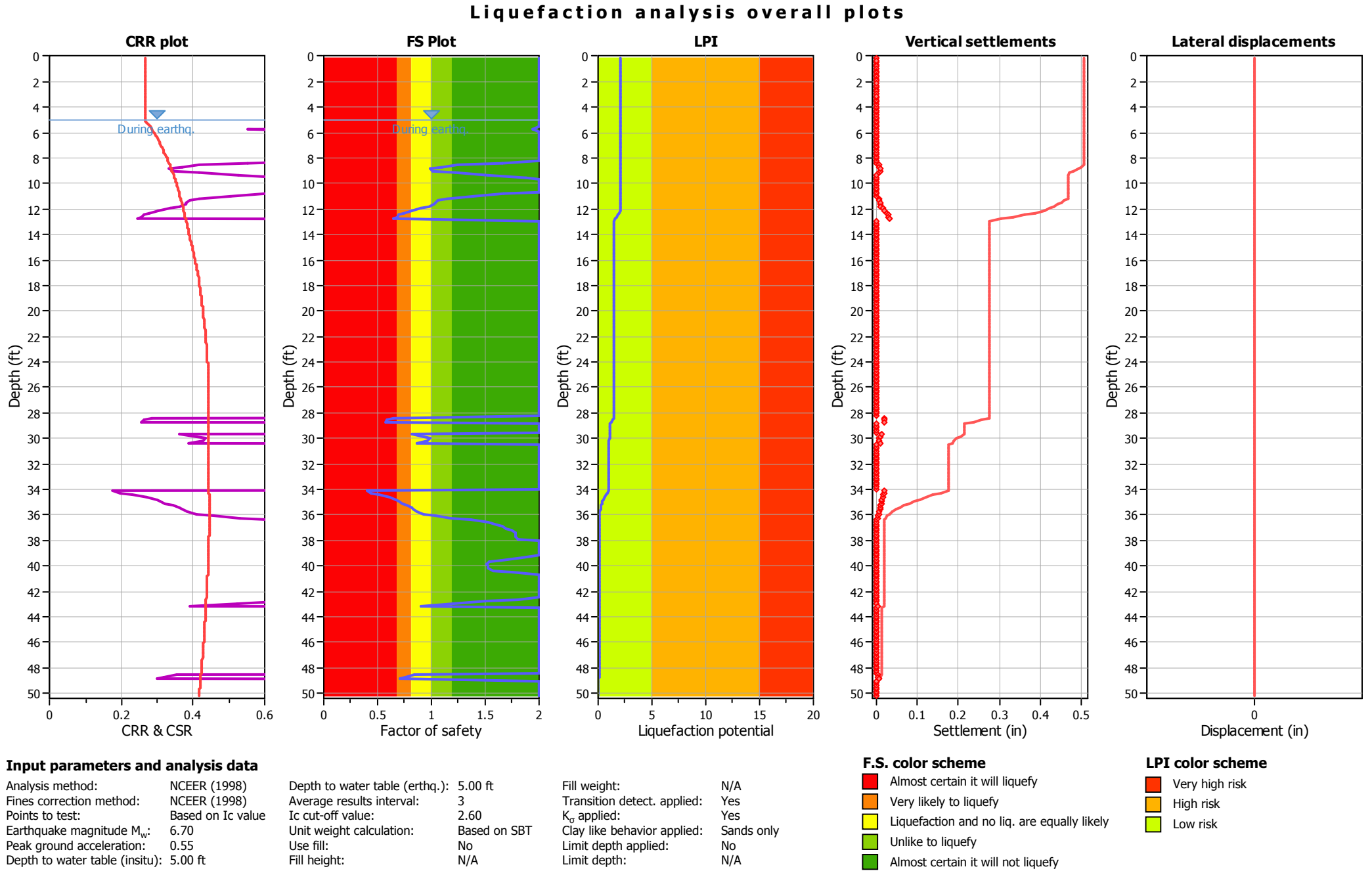


Input parameters and analysis data

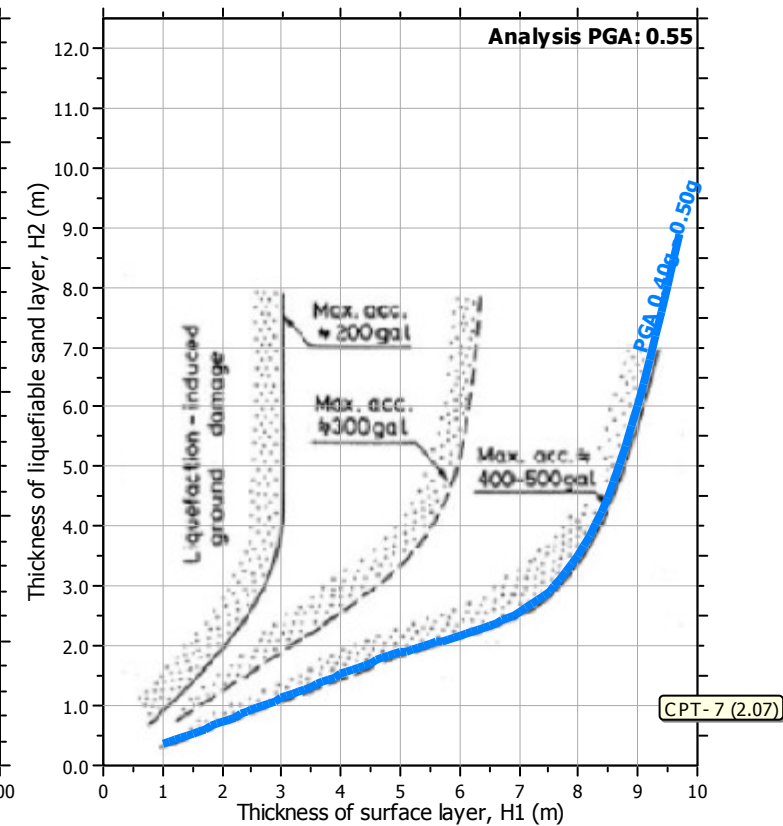
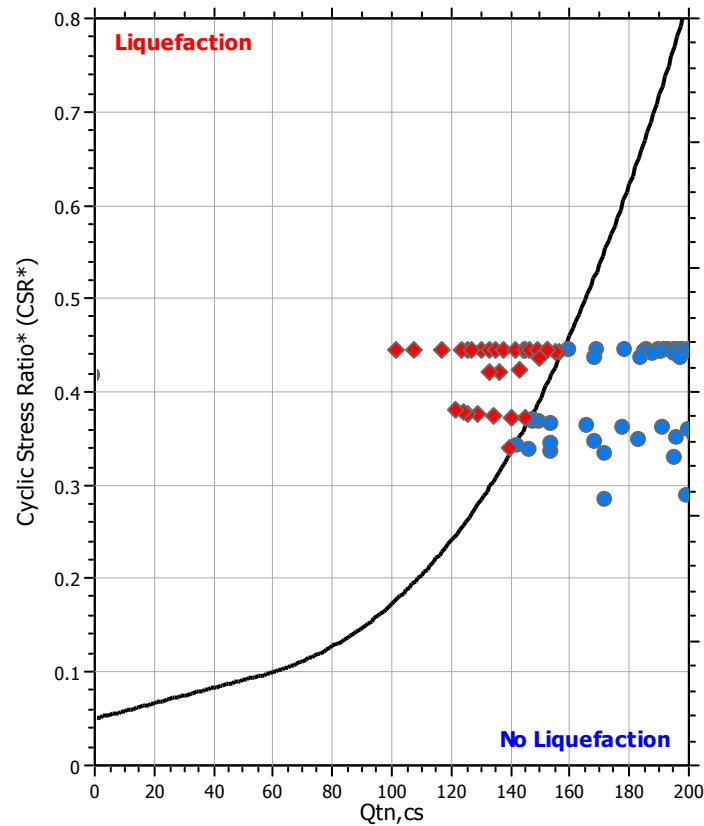
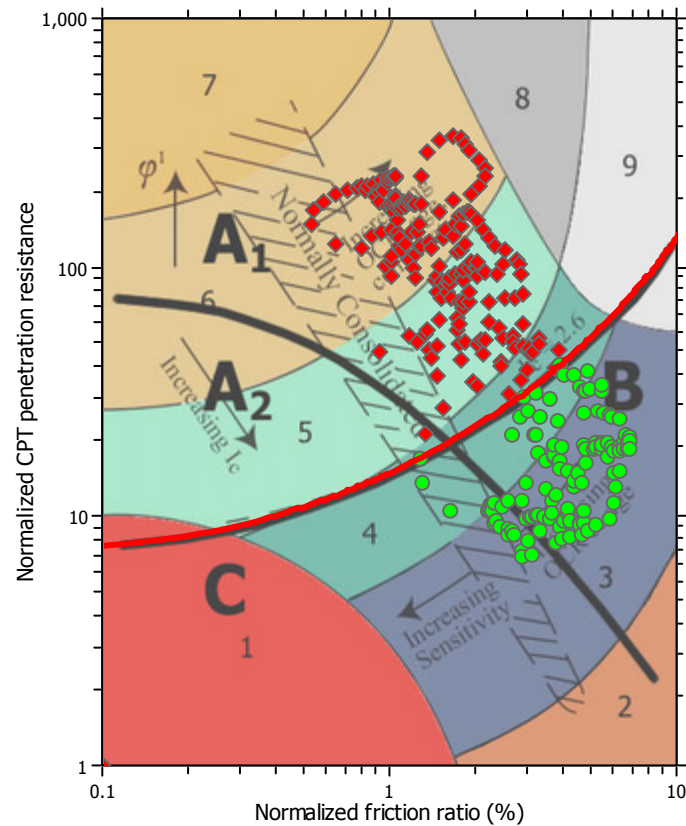
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



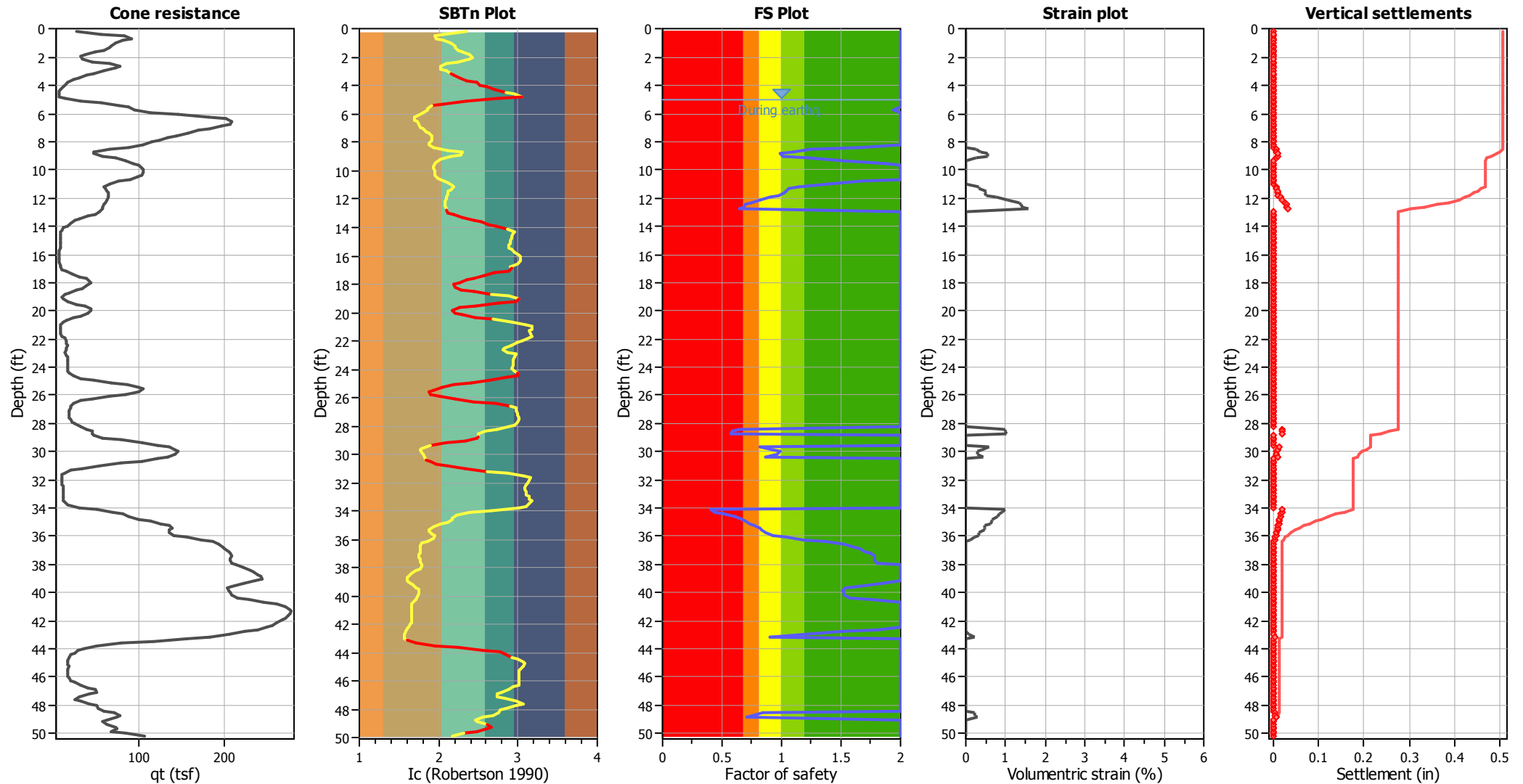
## Liquefaction analysis summary plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain





NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

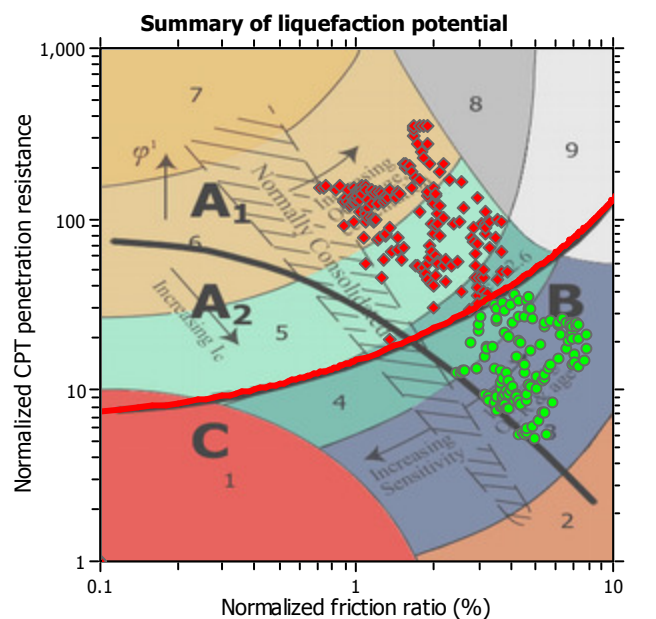
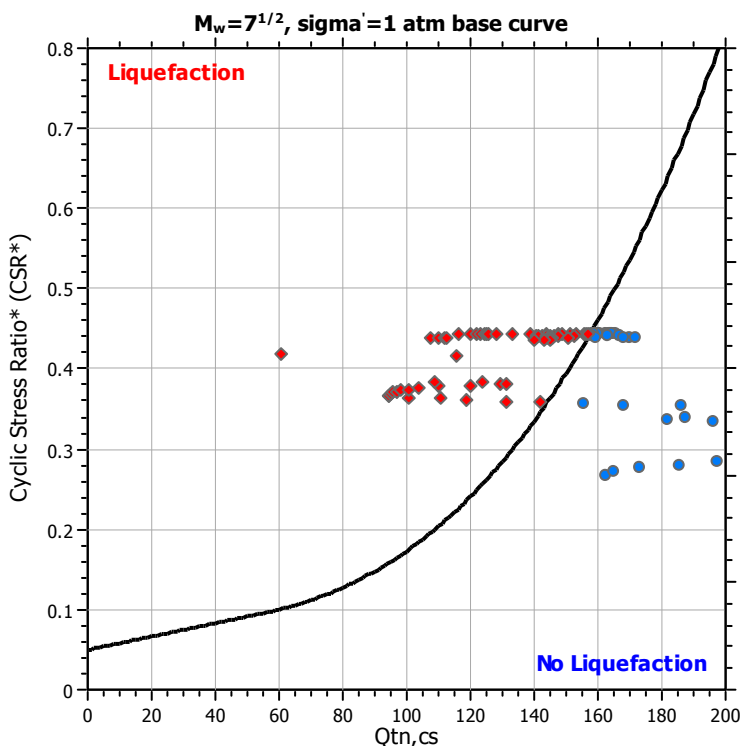
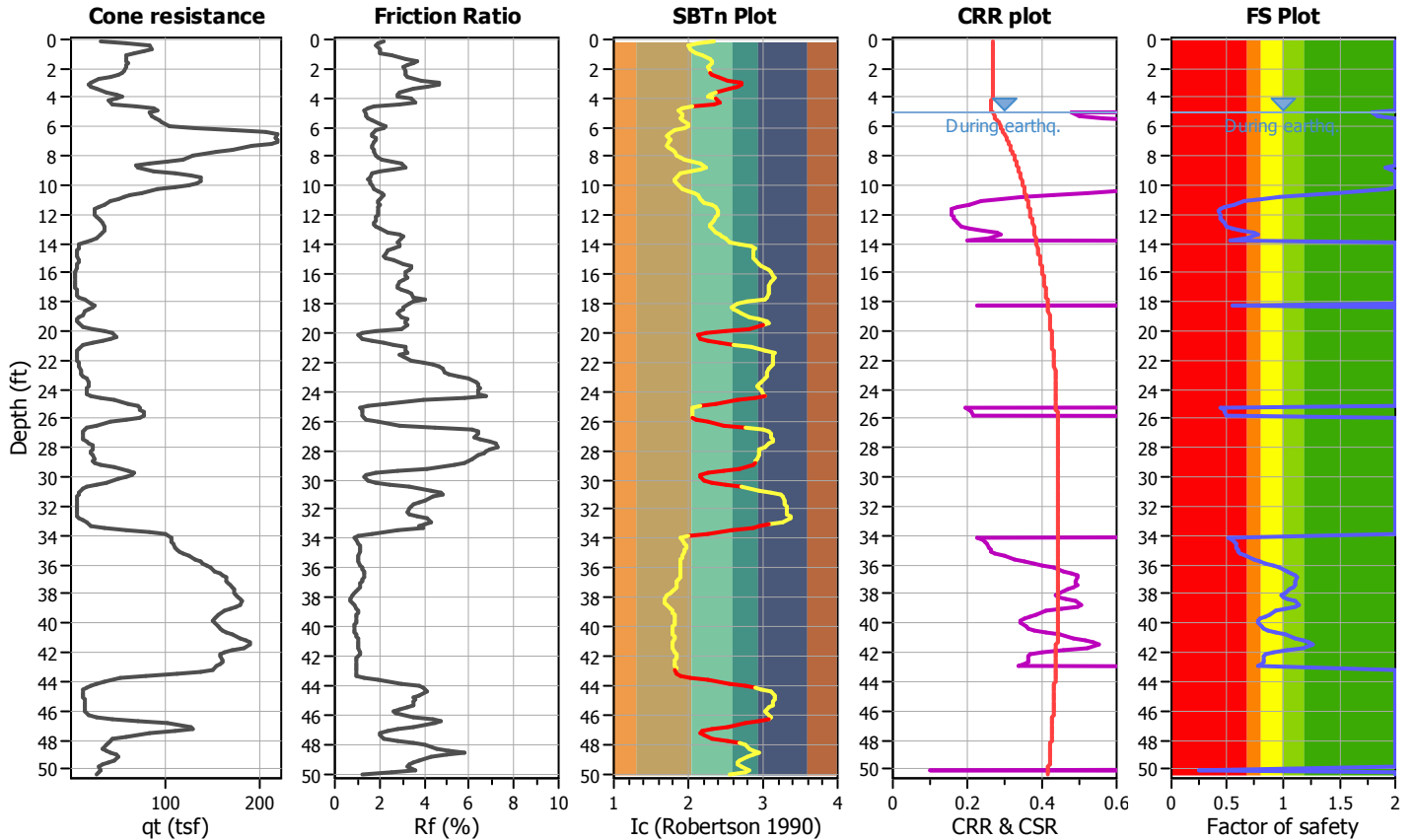
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 8

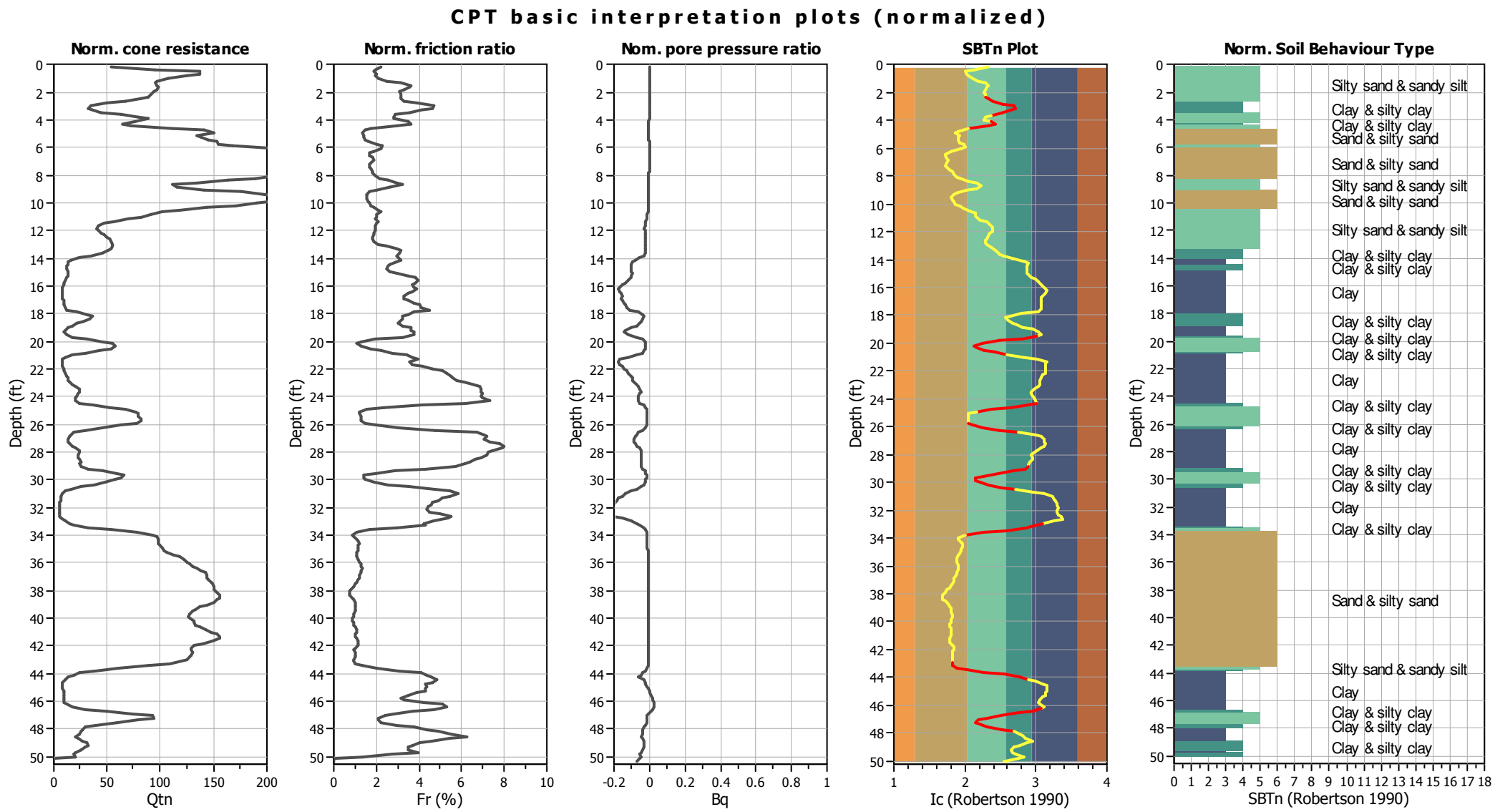
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry





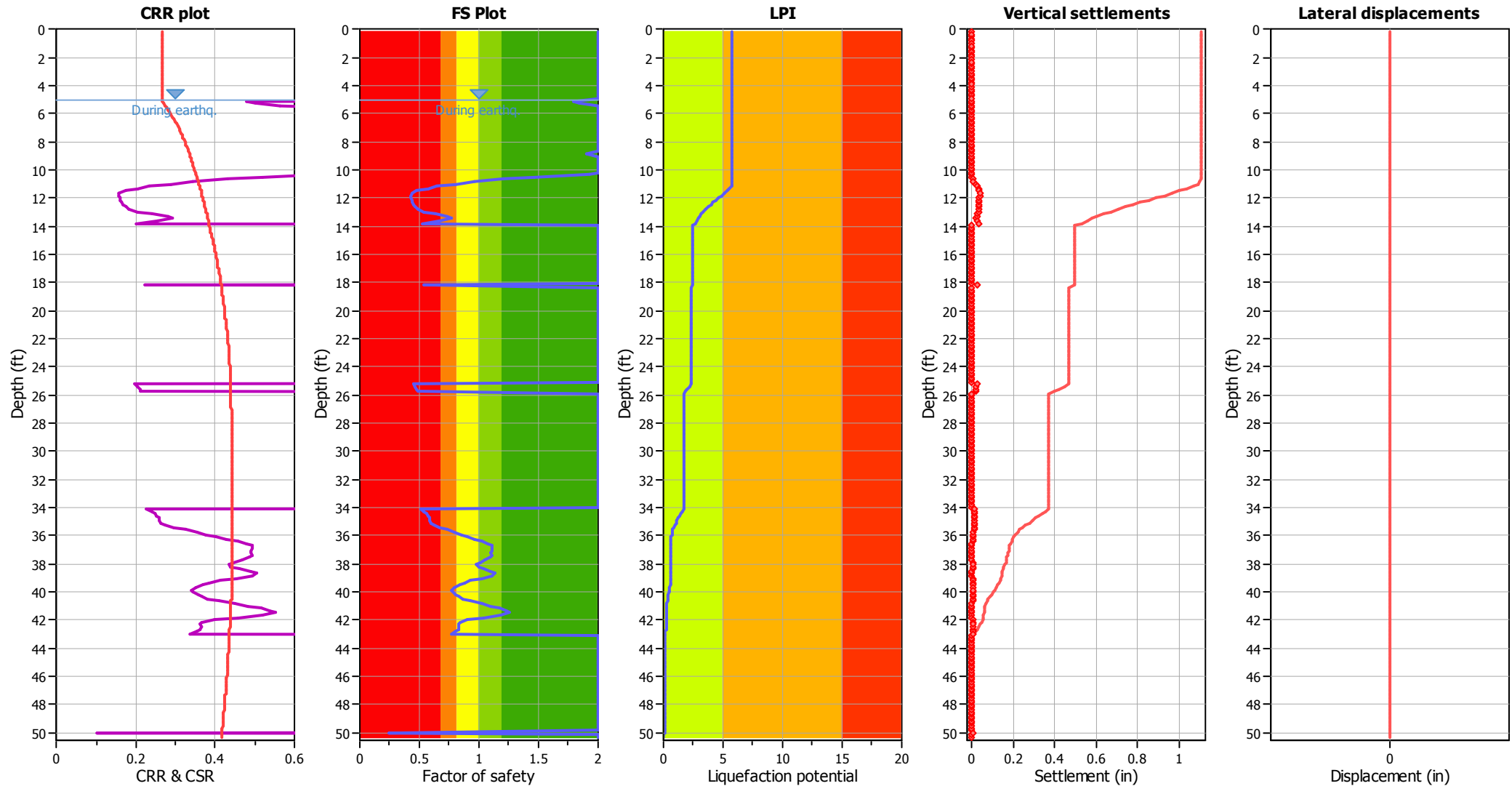
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

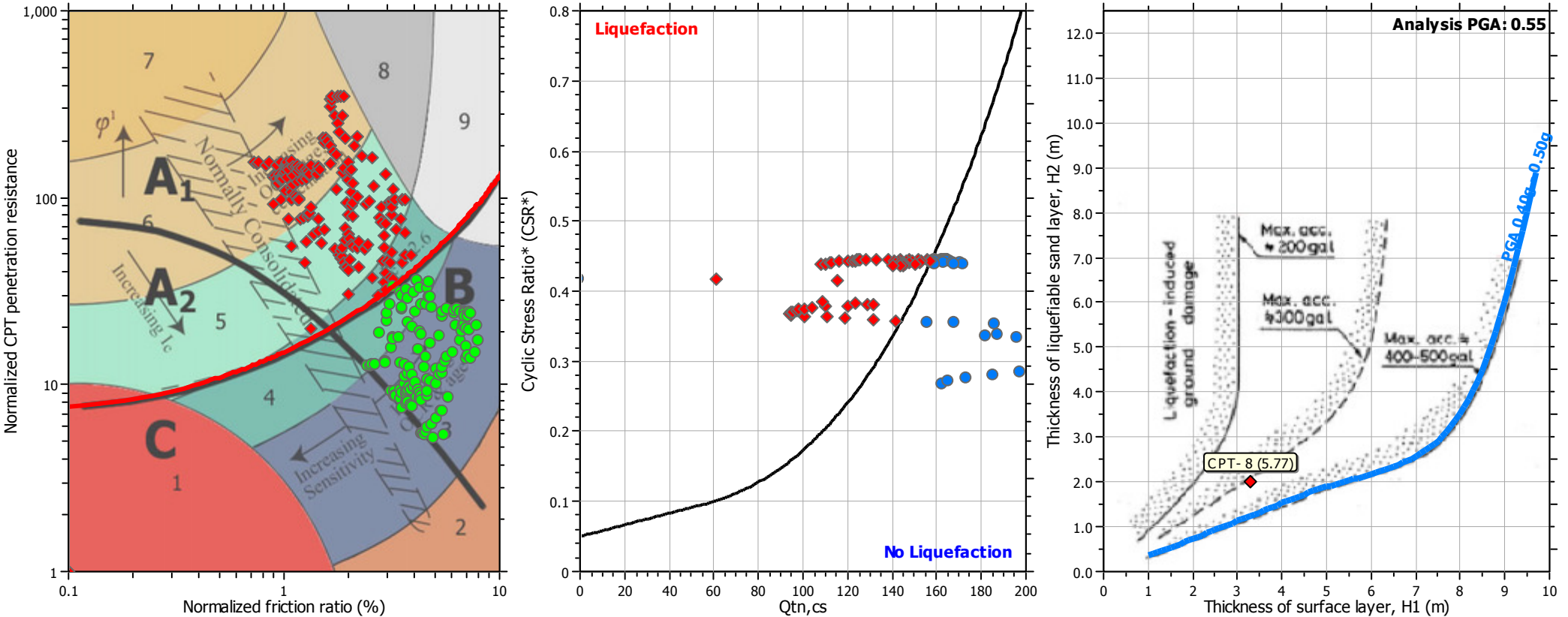
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

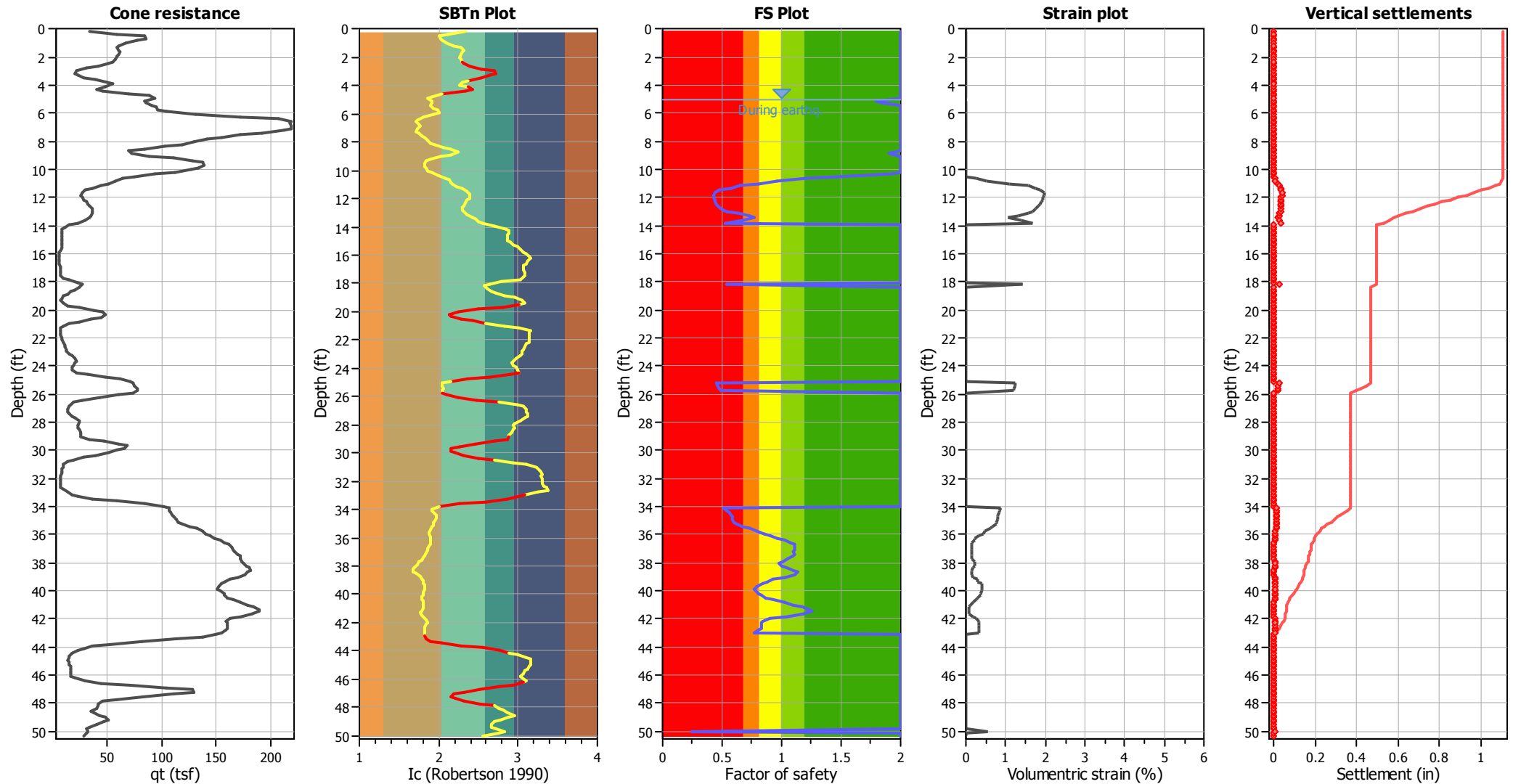
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

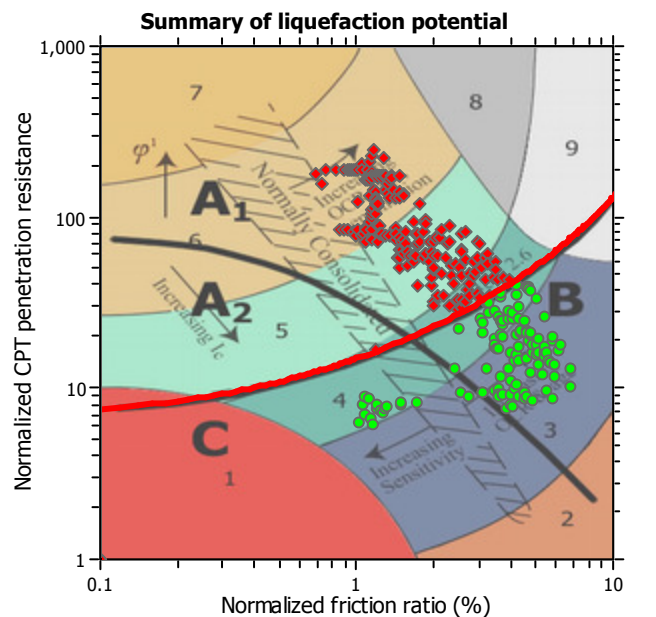
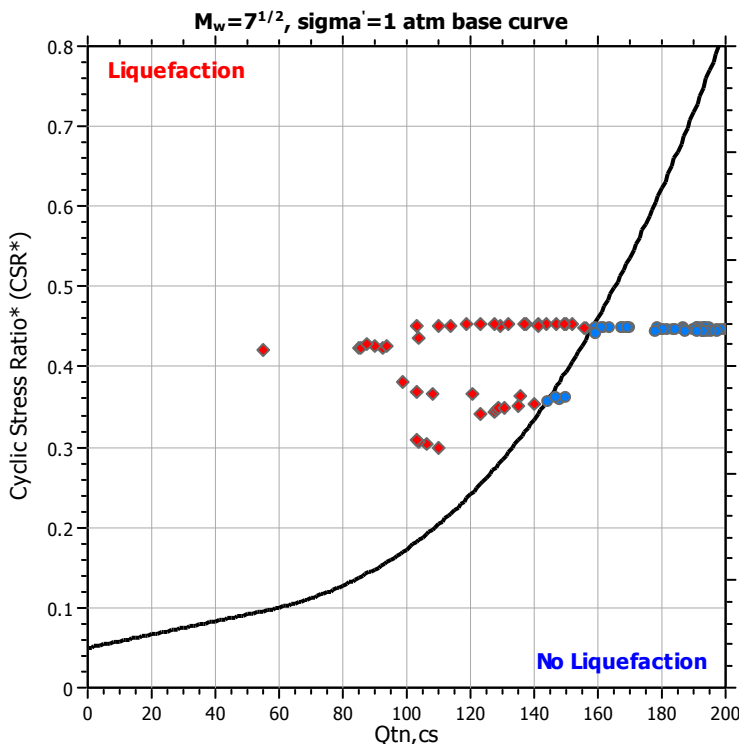
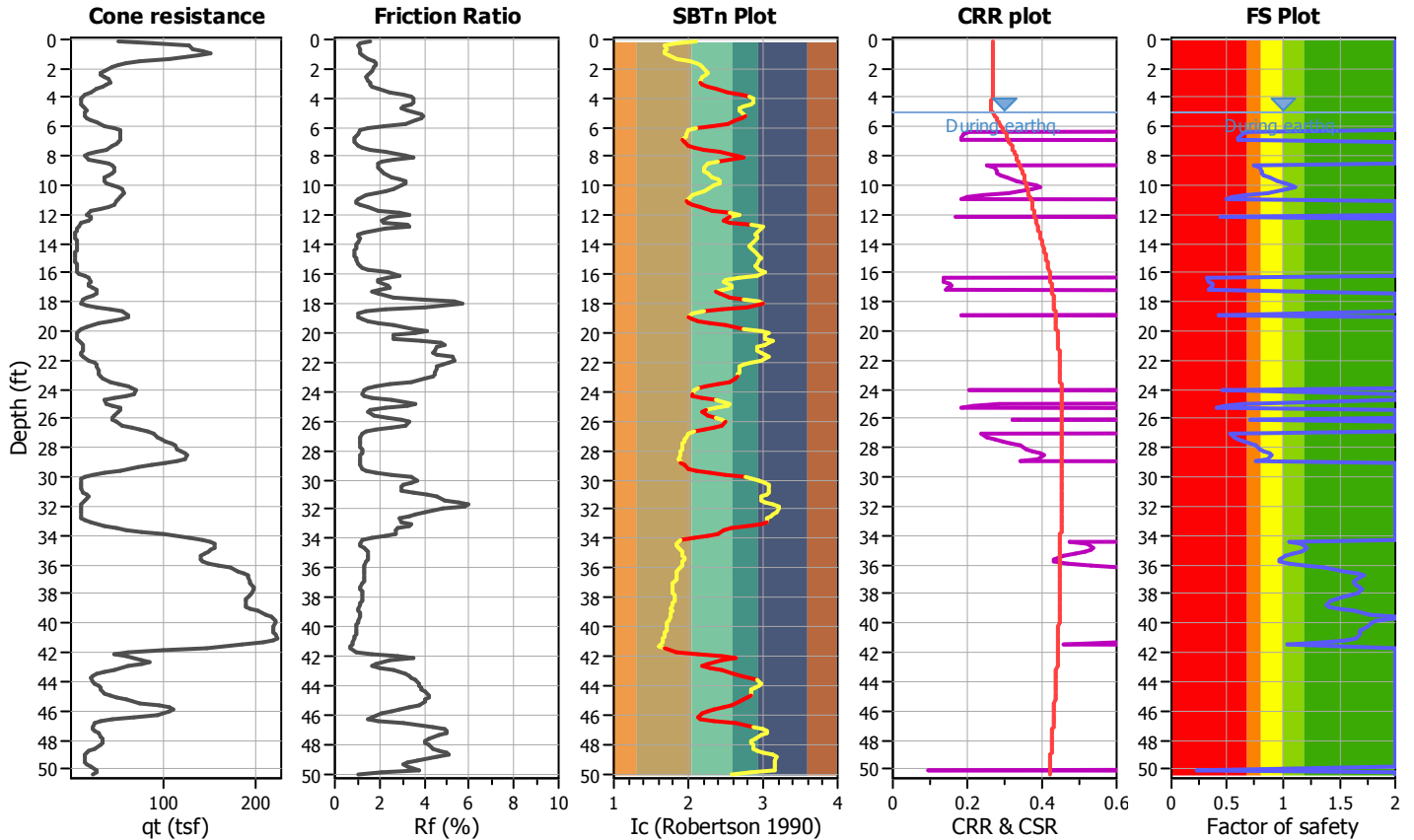
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 9

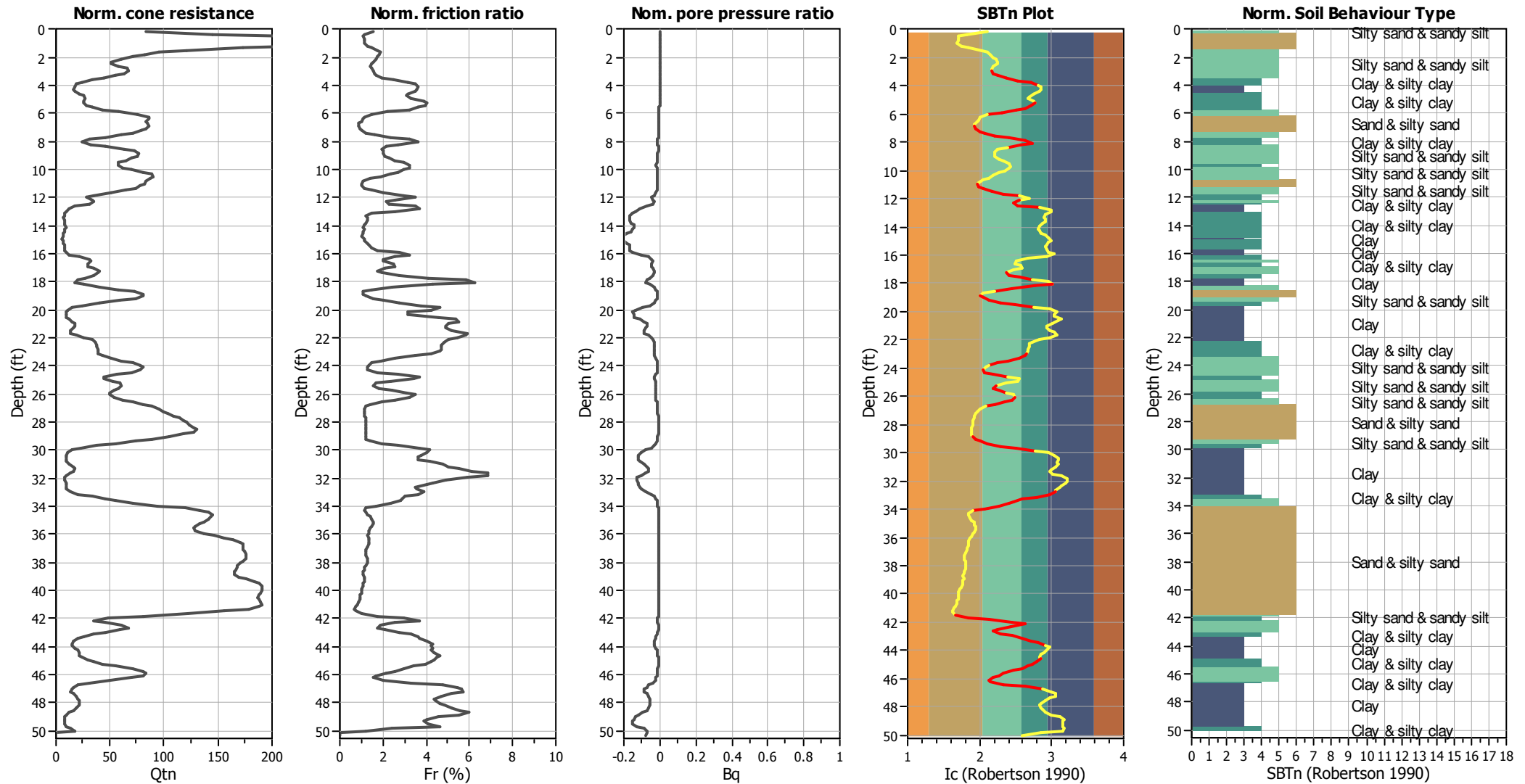
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

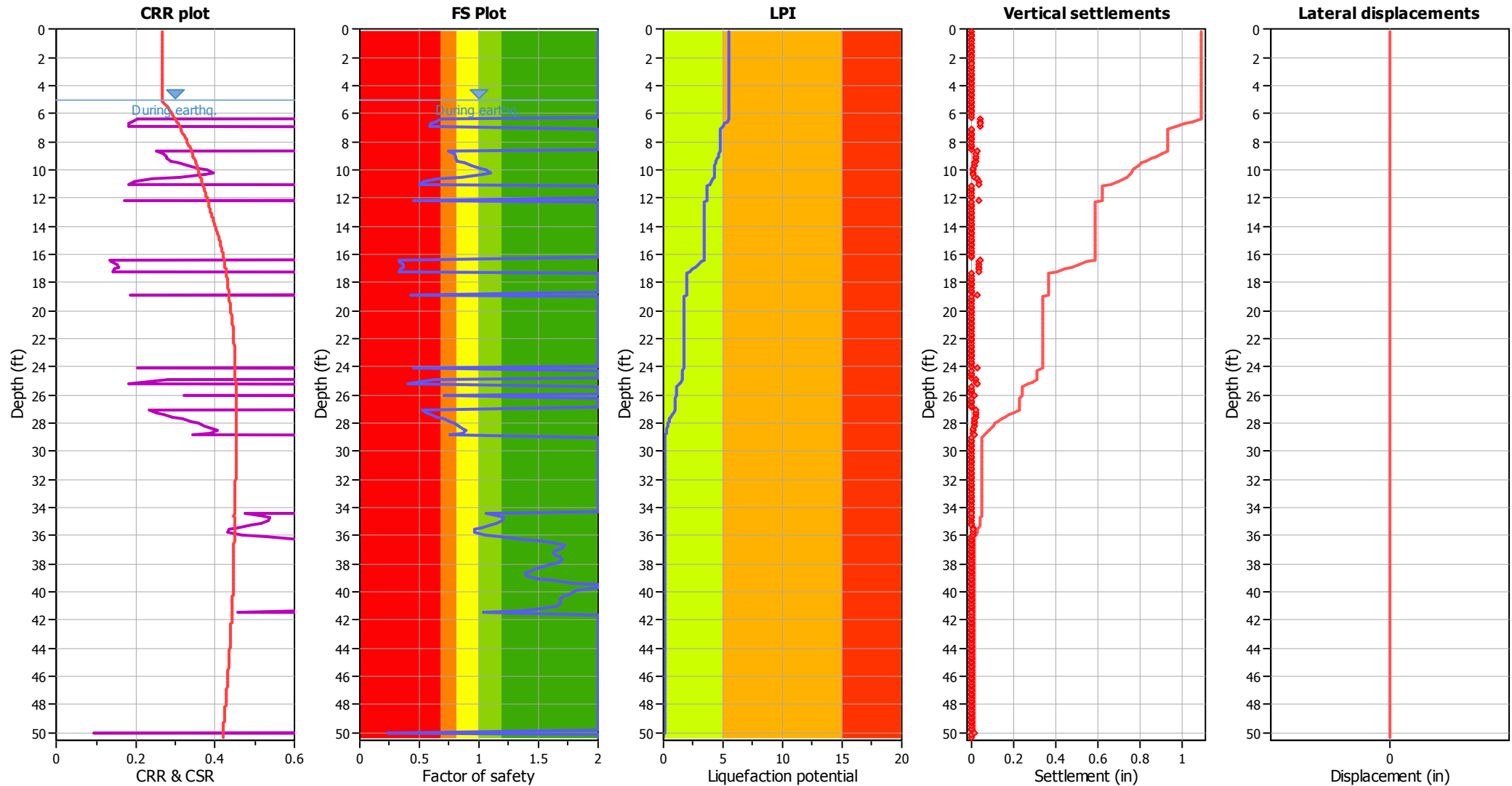
## CPT basic interpretation plots (normalized)



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Liquefaction analysis overall plots



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## F.S. color scheme

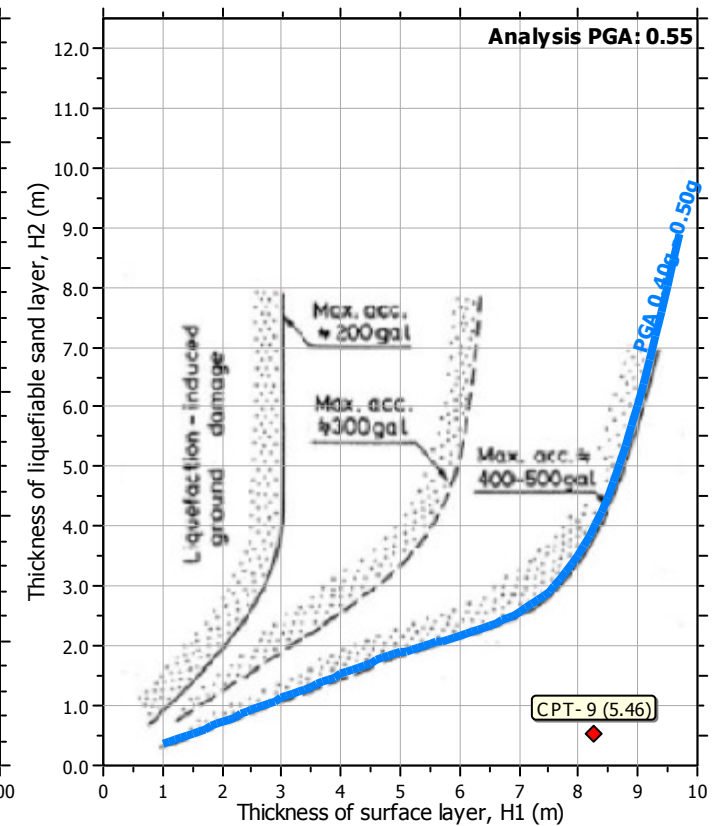
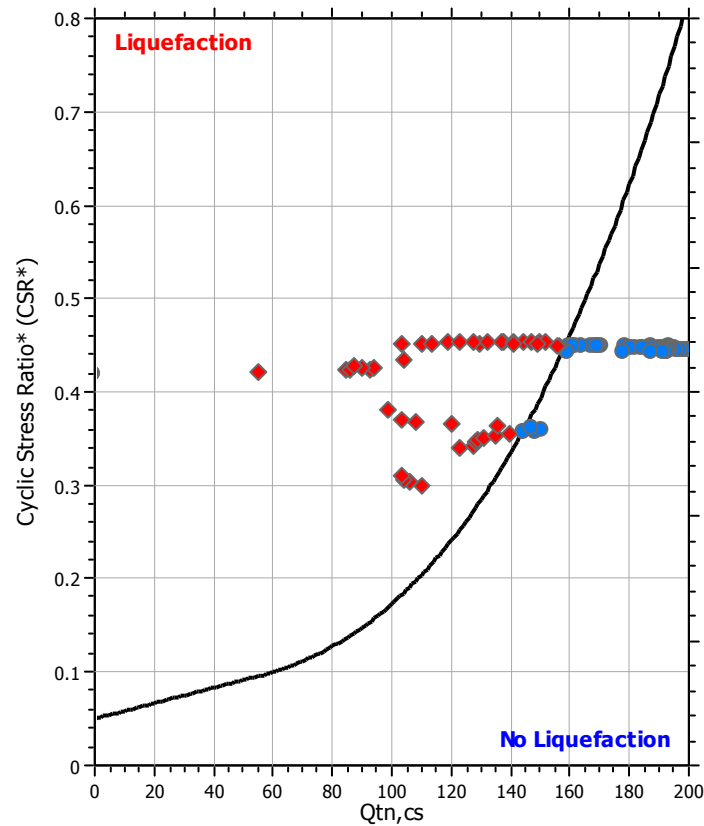
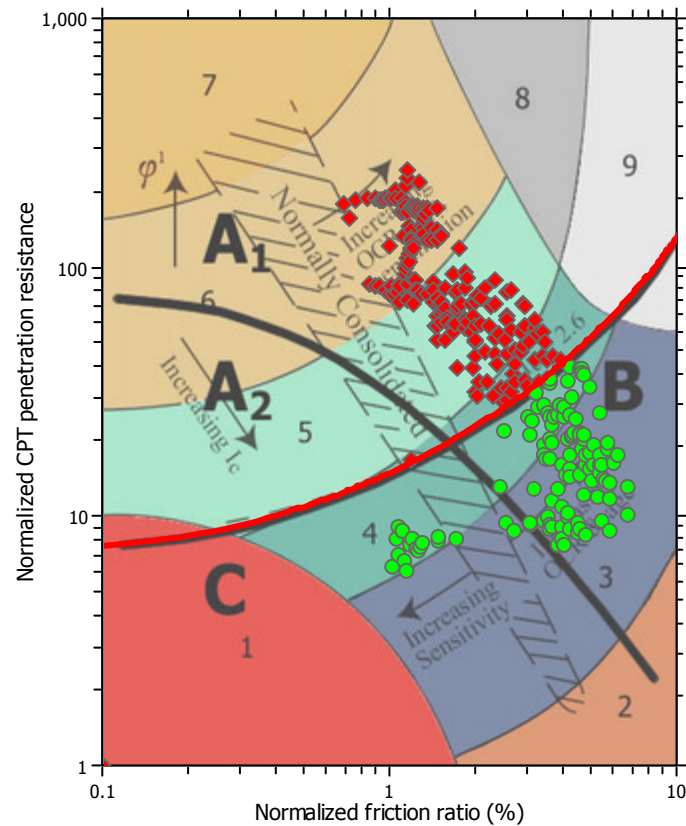
Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

## LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk



## Liquefaction analysis summary plots

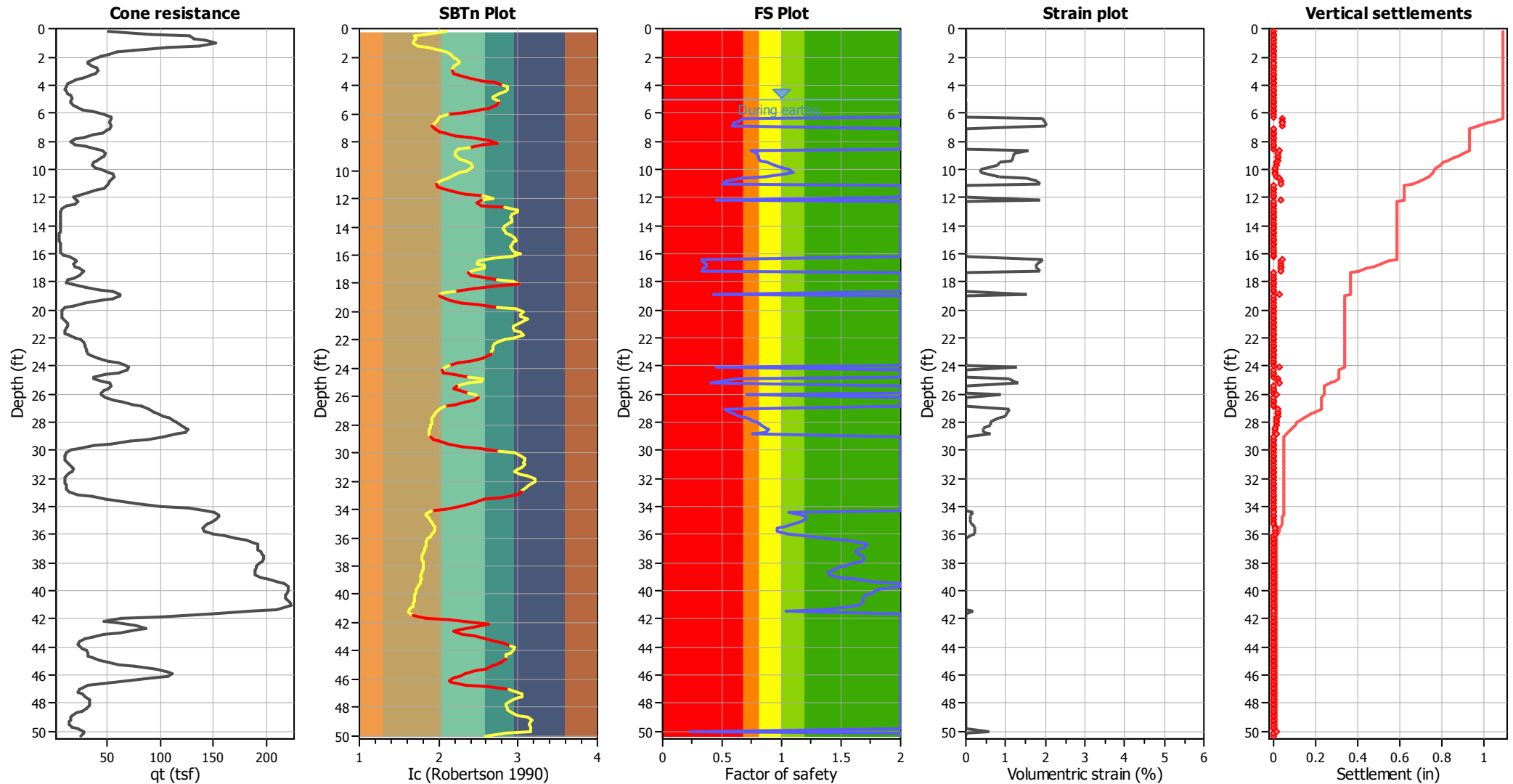


### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

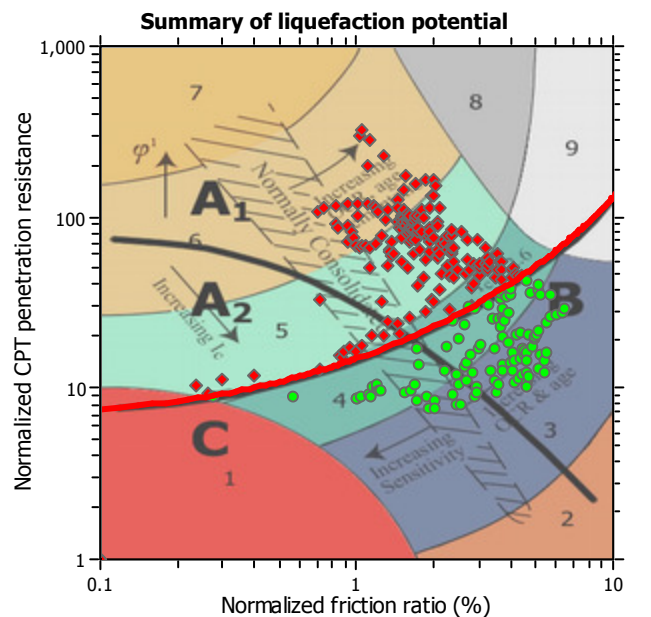
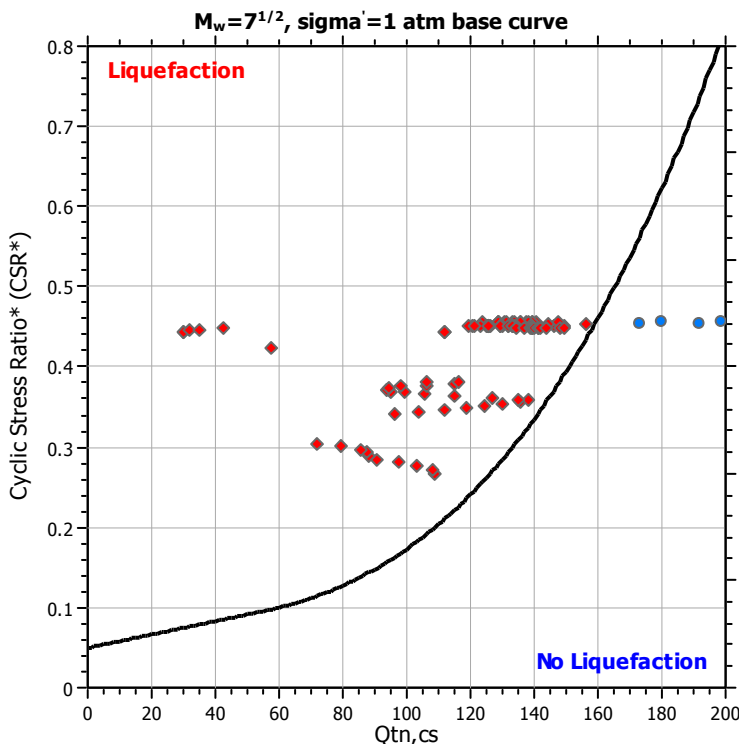
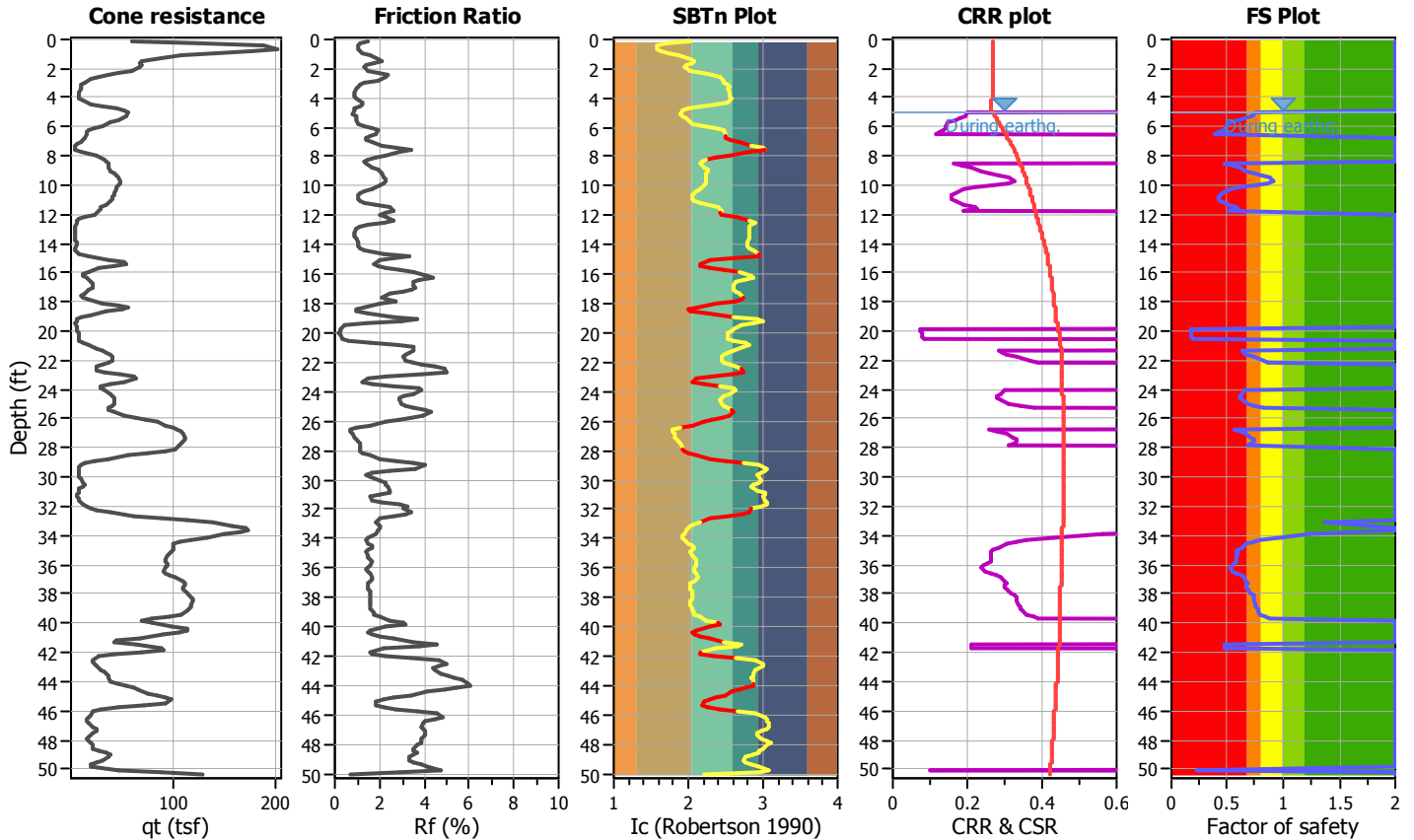
Project title : Shea Properties/Cypress

Location : Cypress, California

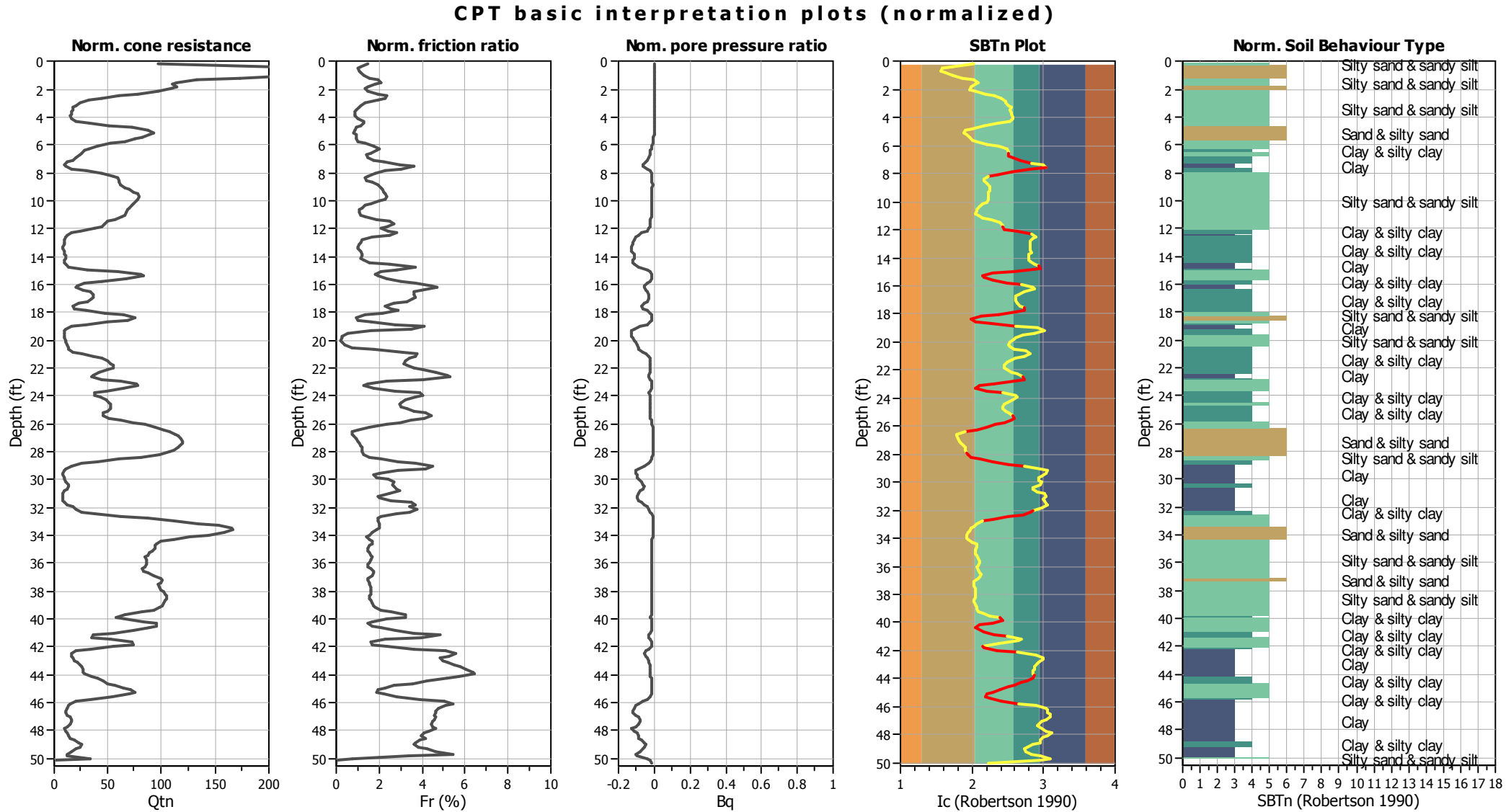
CPT file : CPT-10

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



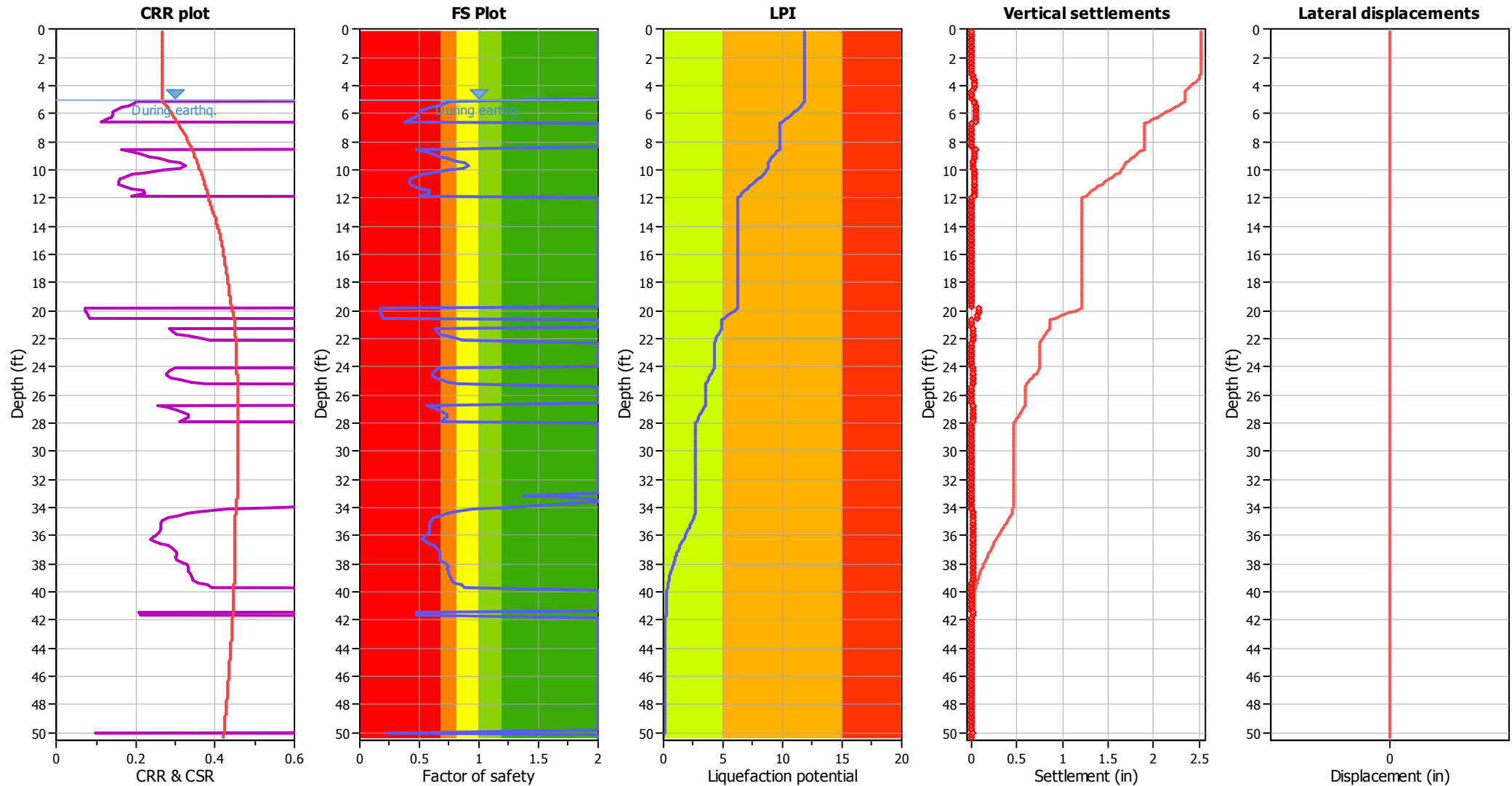
Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

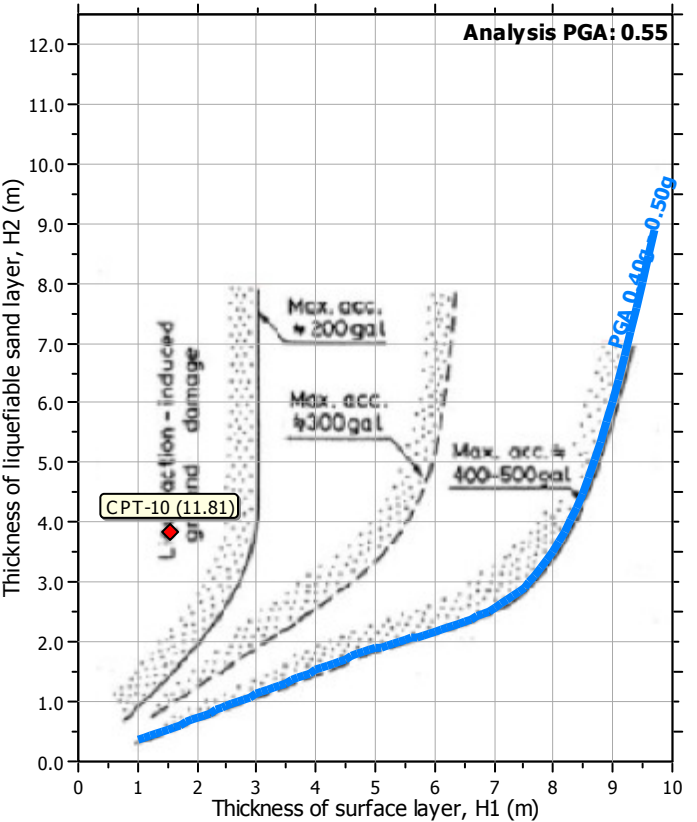
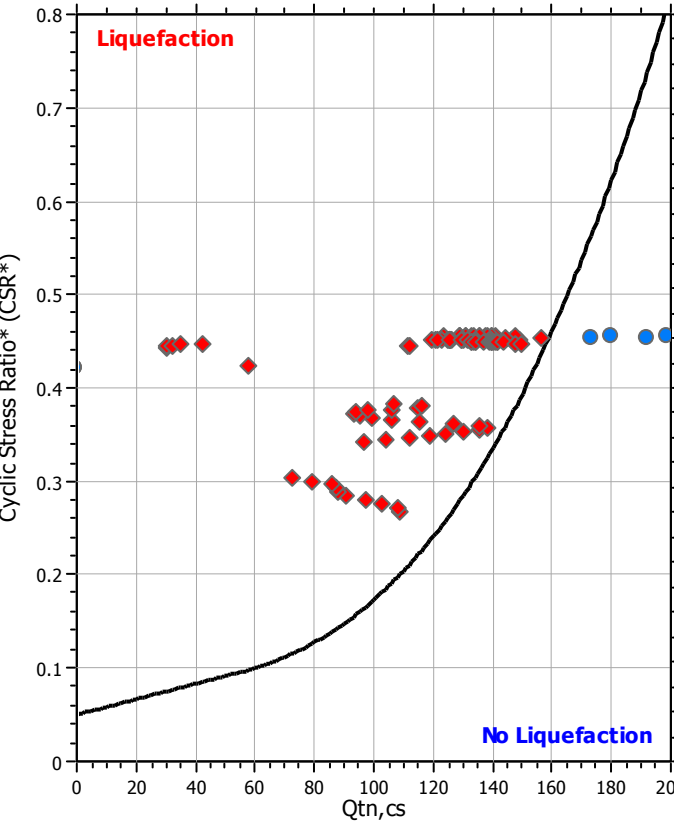
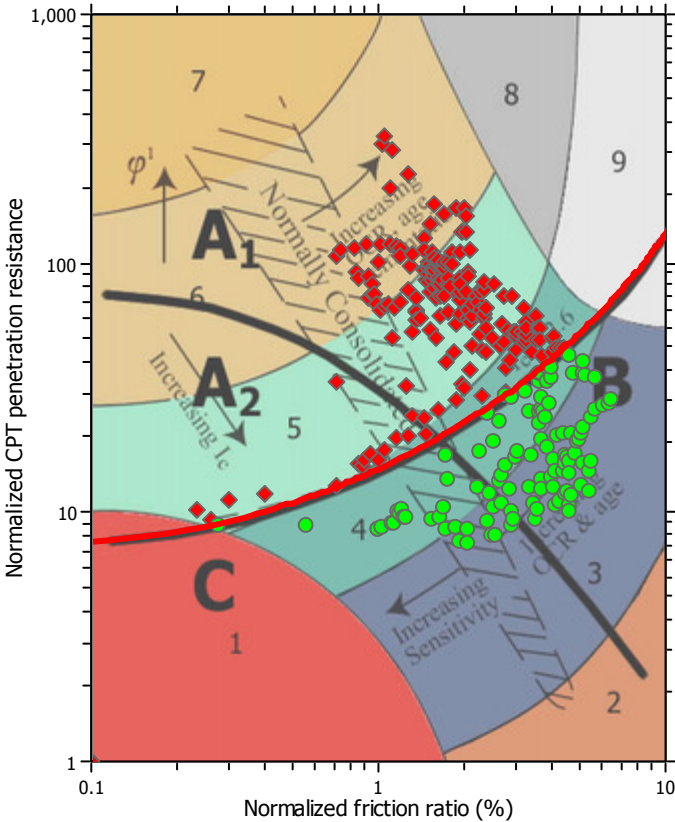
### F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

### LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

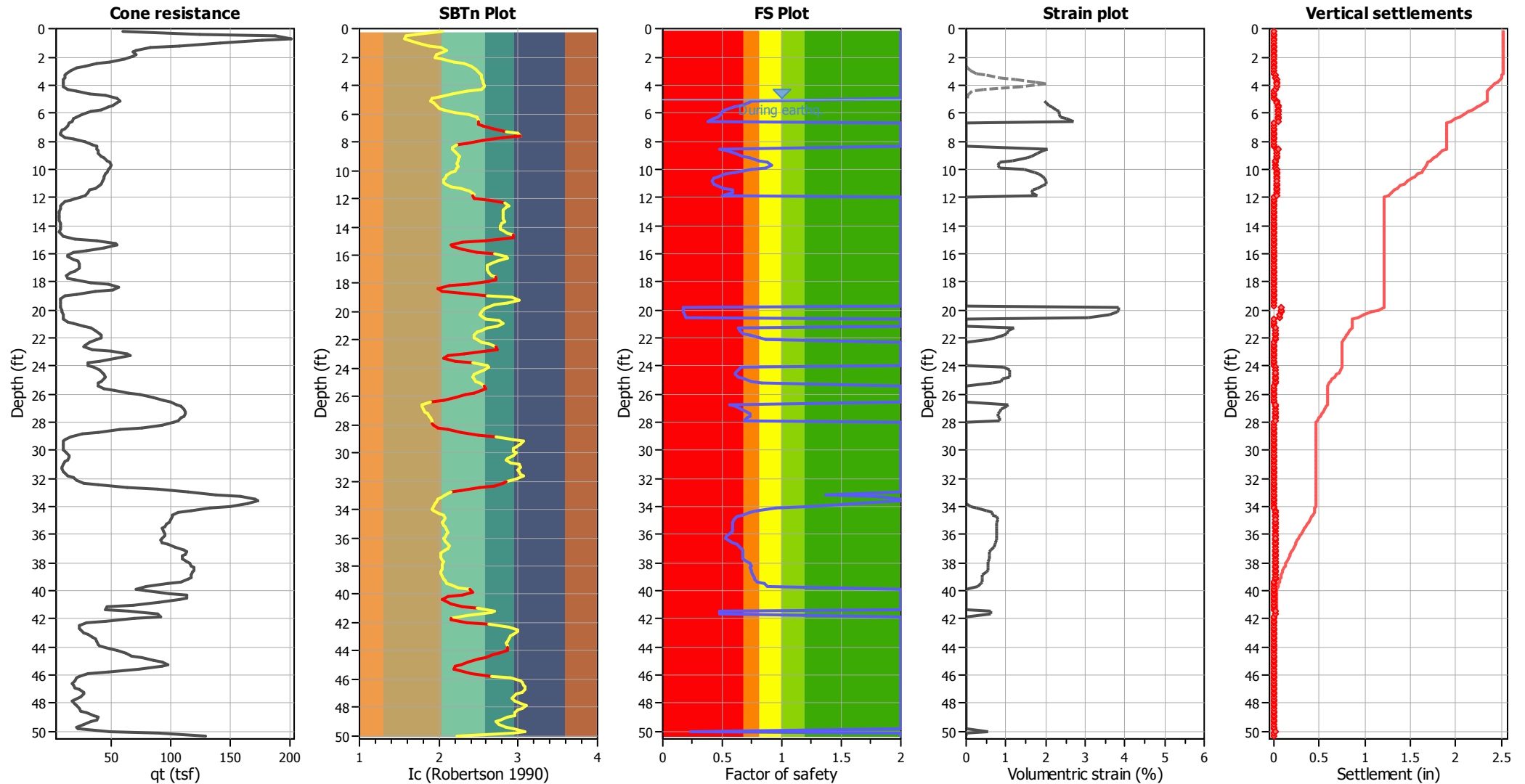
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

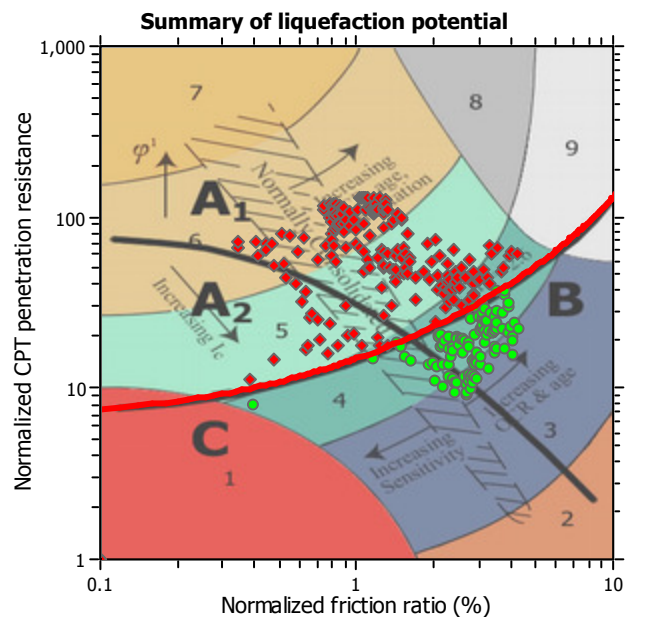
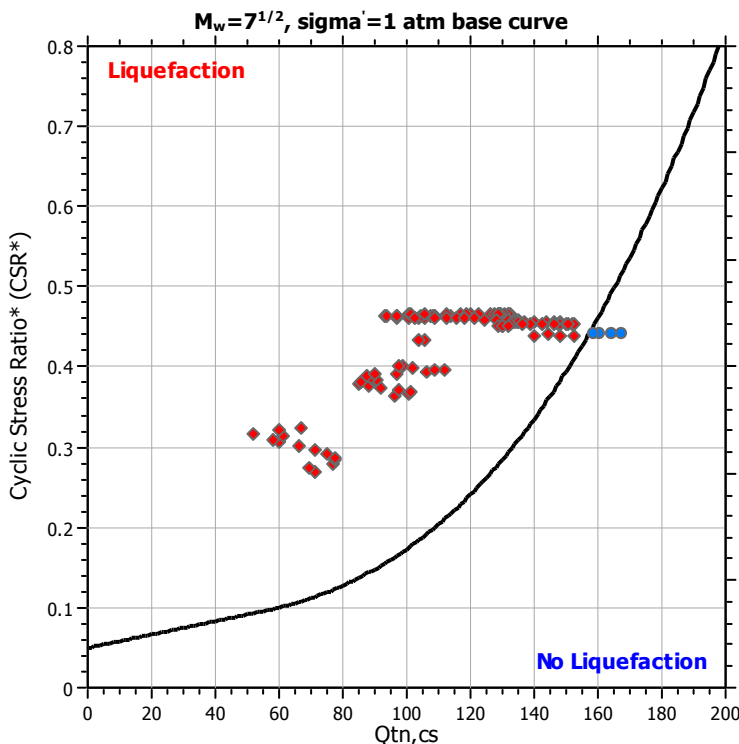
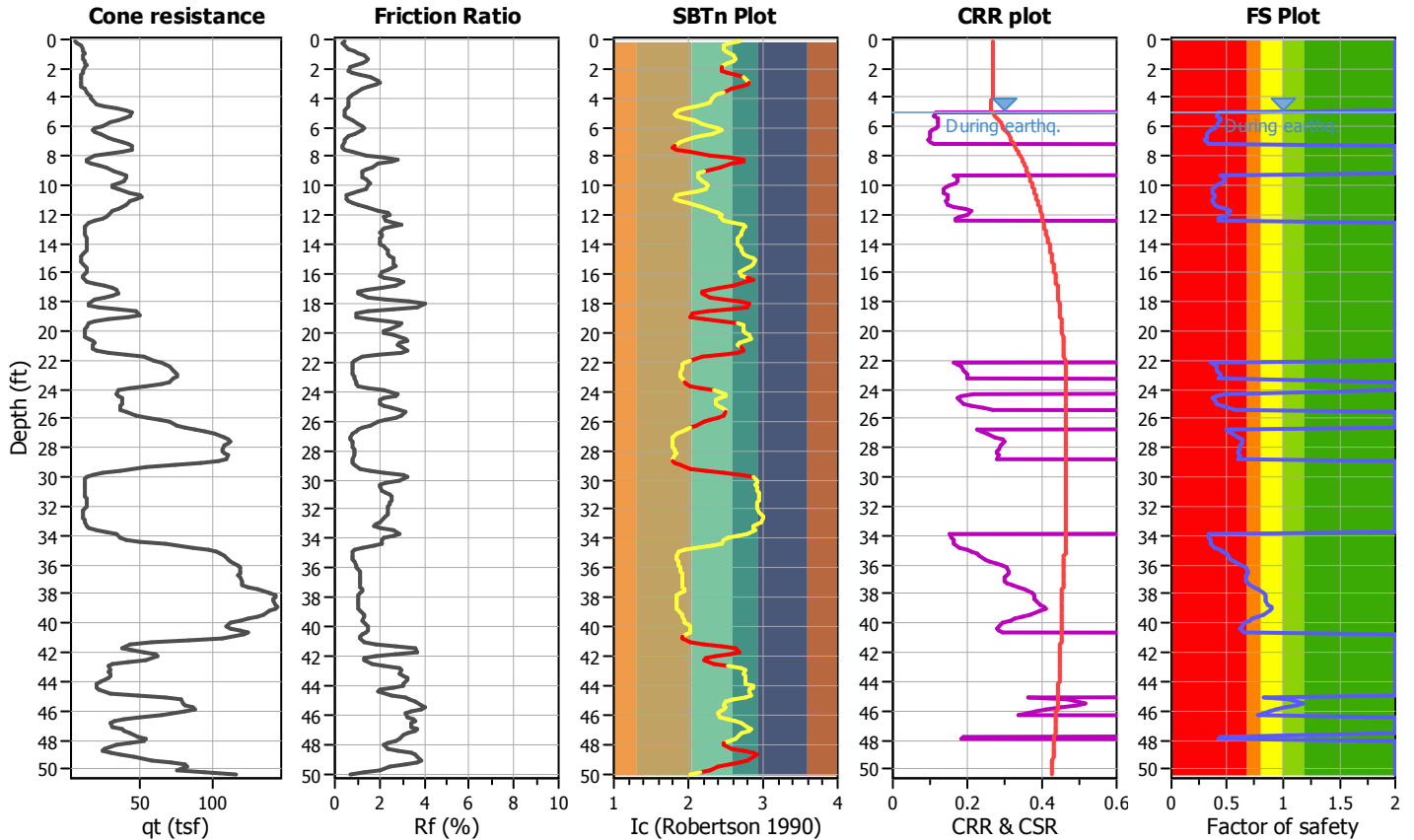
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT-11

### Input parameters and analysis data

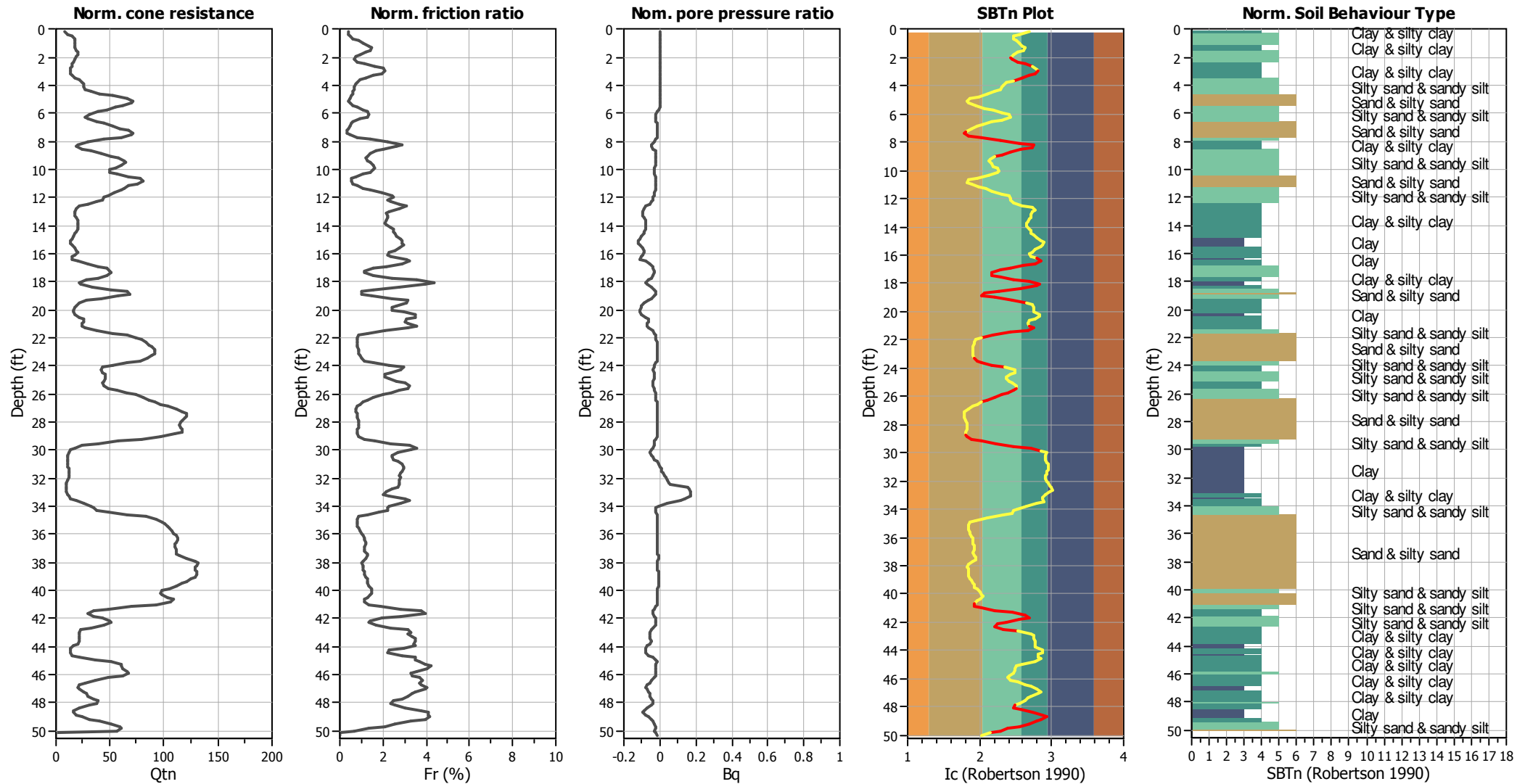
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



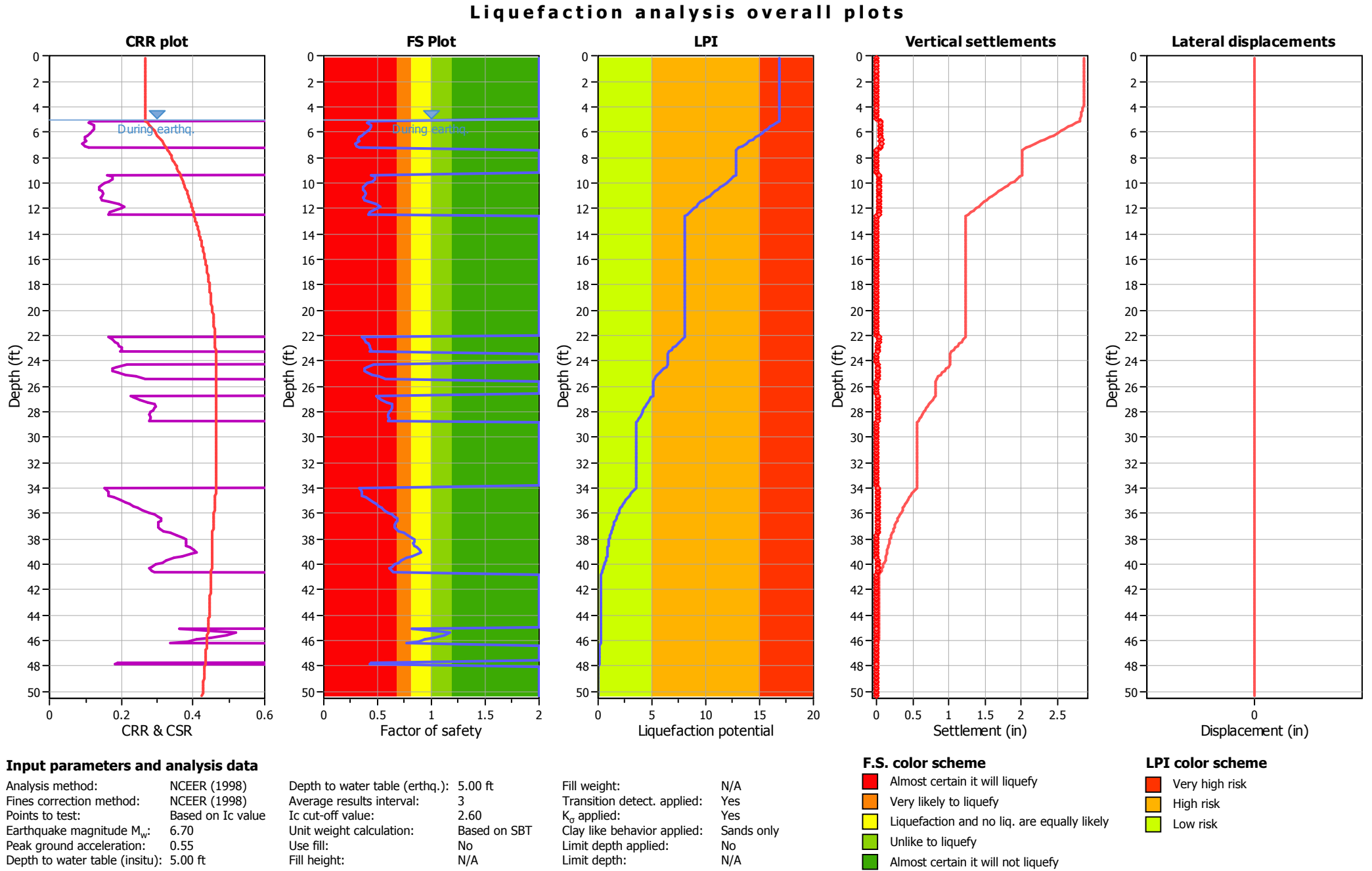
## CPT basic interpretation plots (normalized)



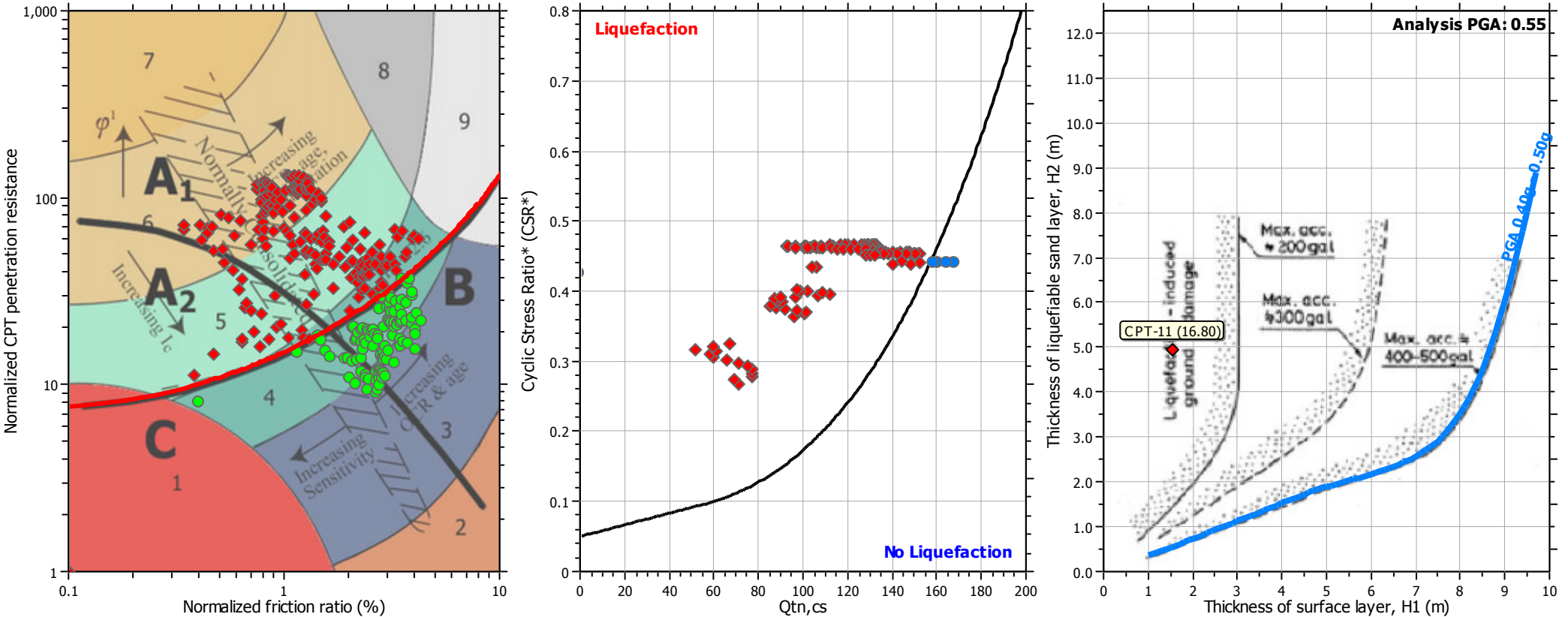
## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A





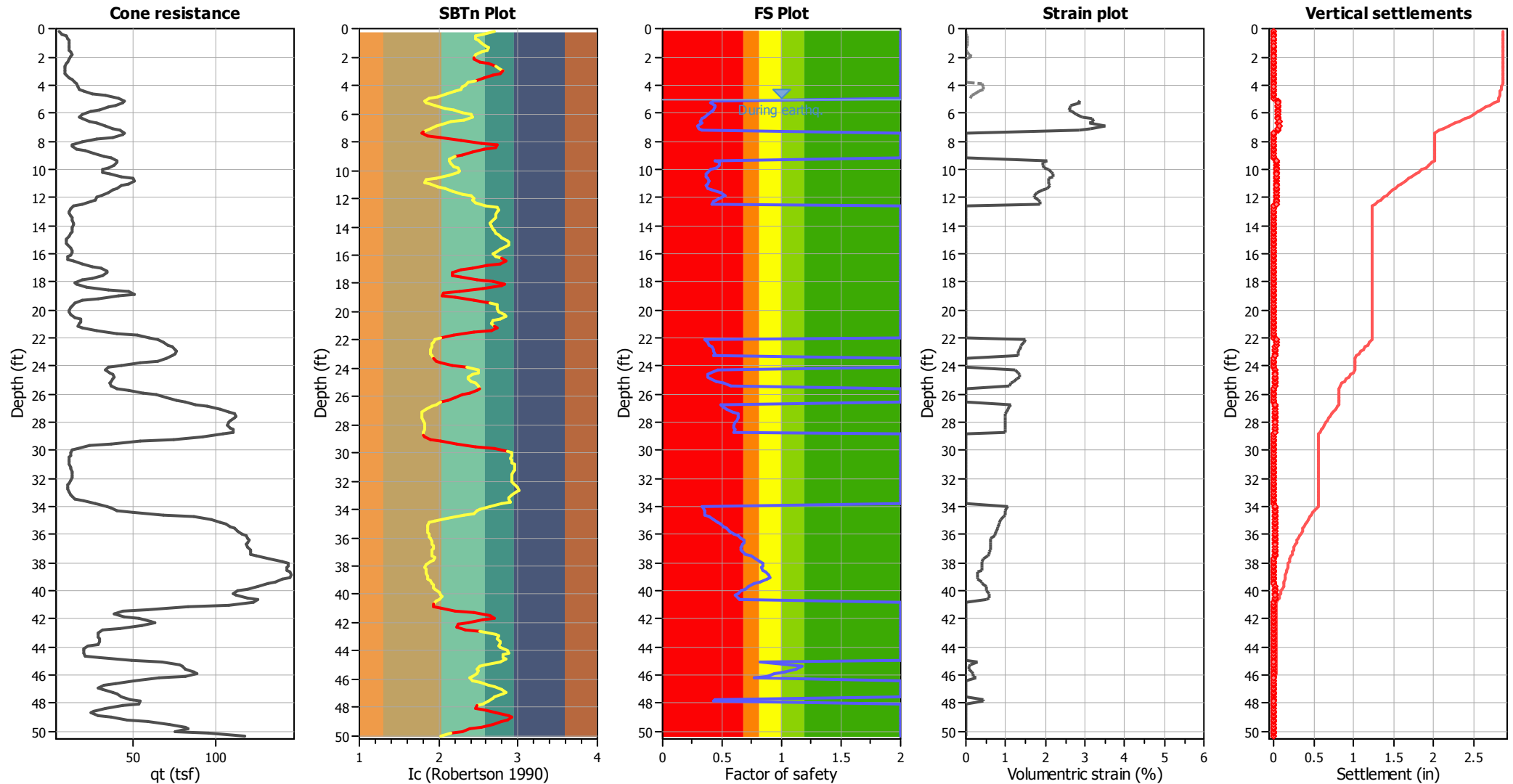
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

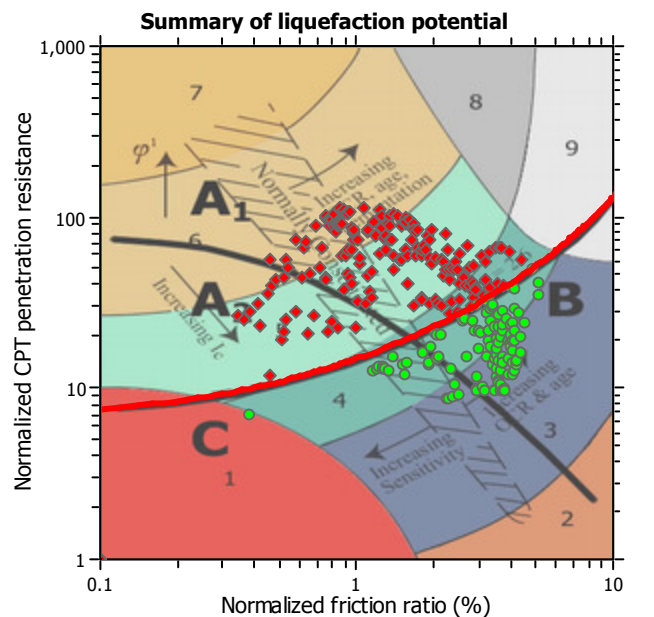
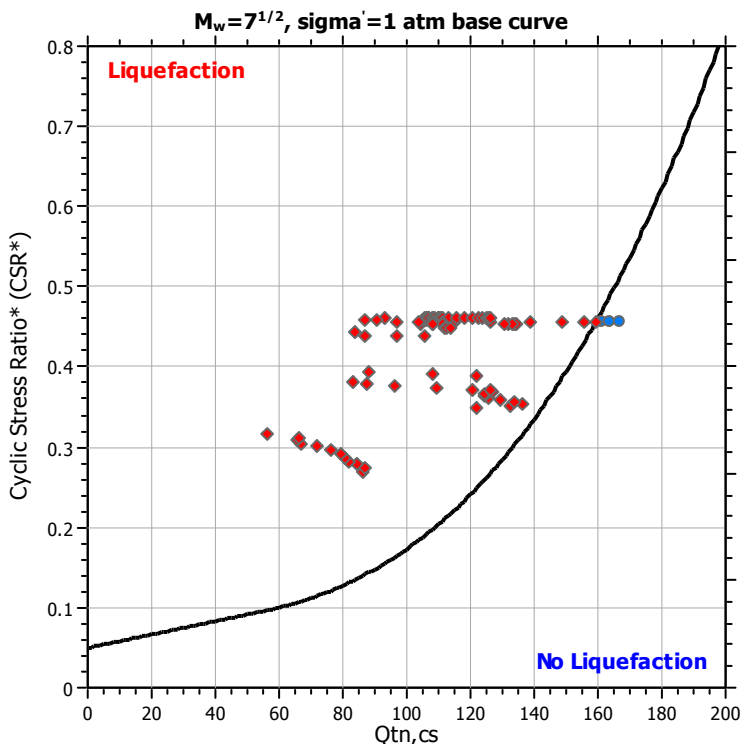
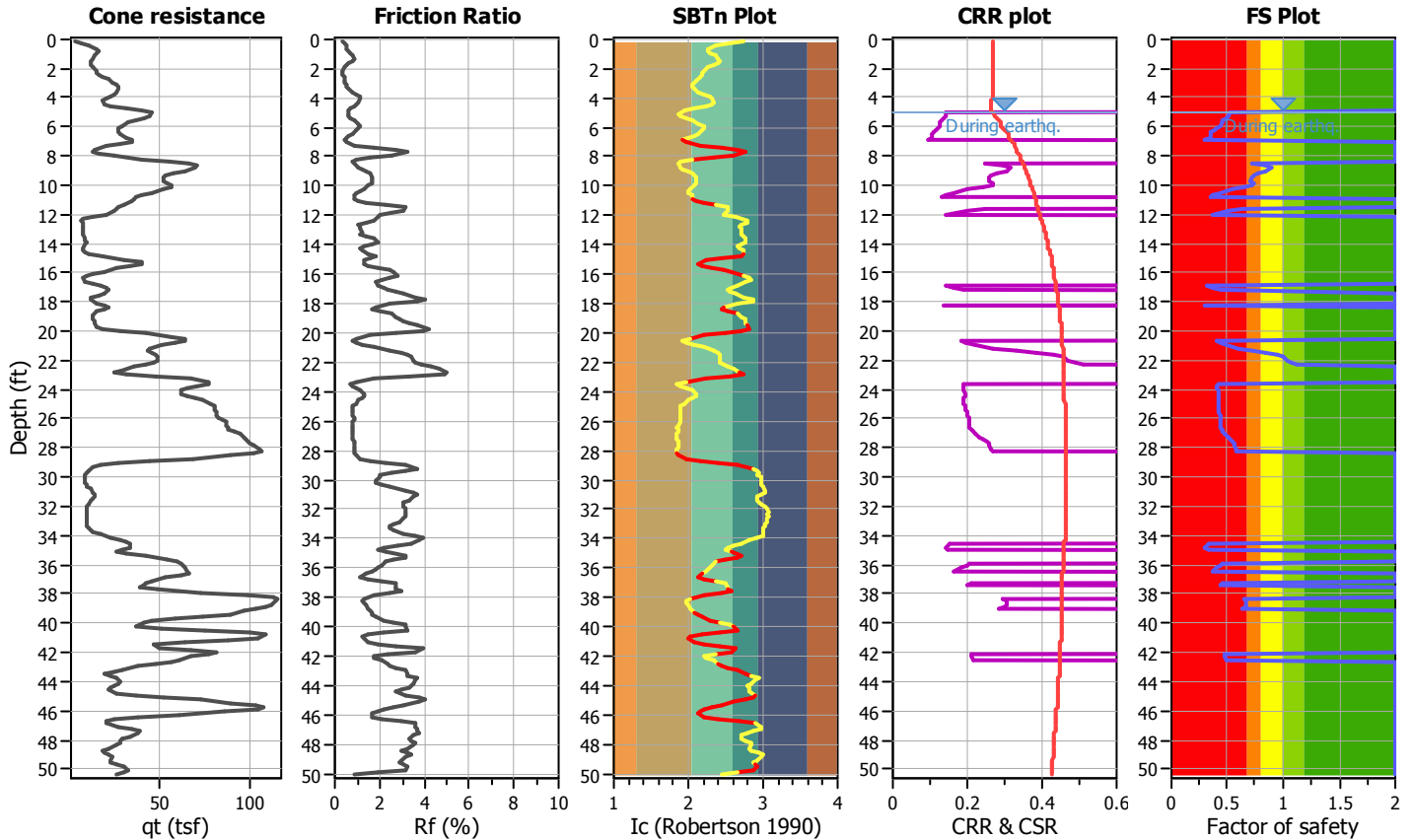
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT-12

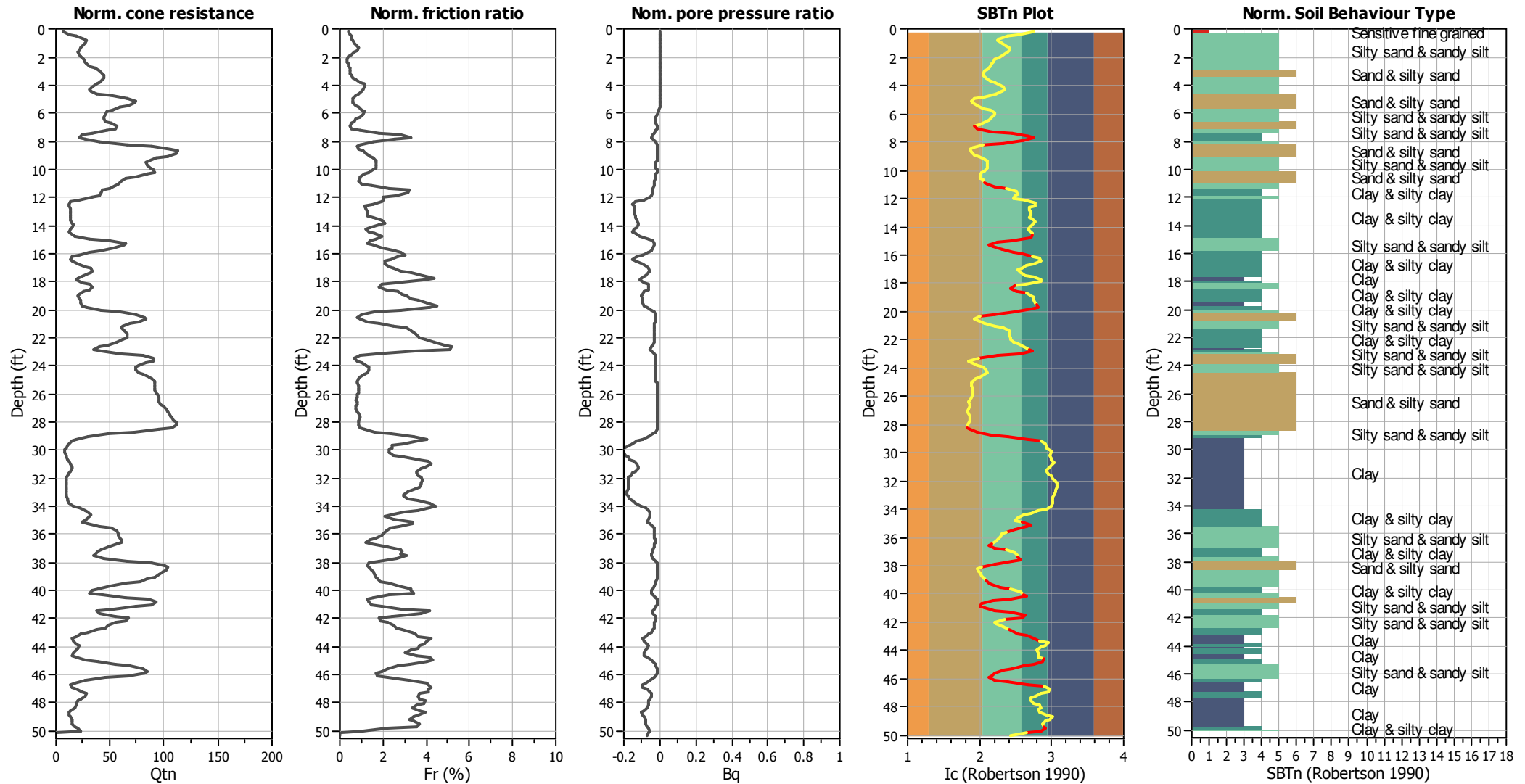
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

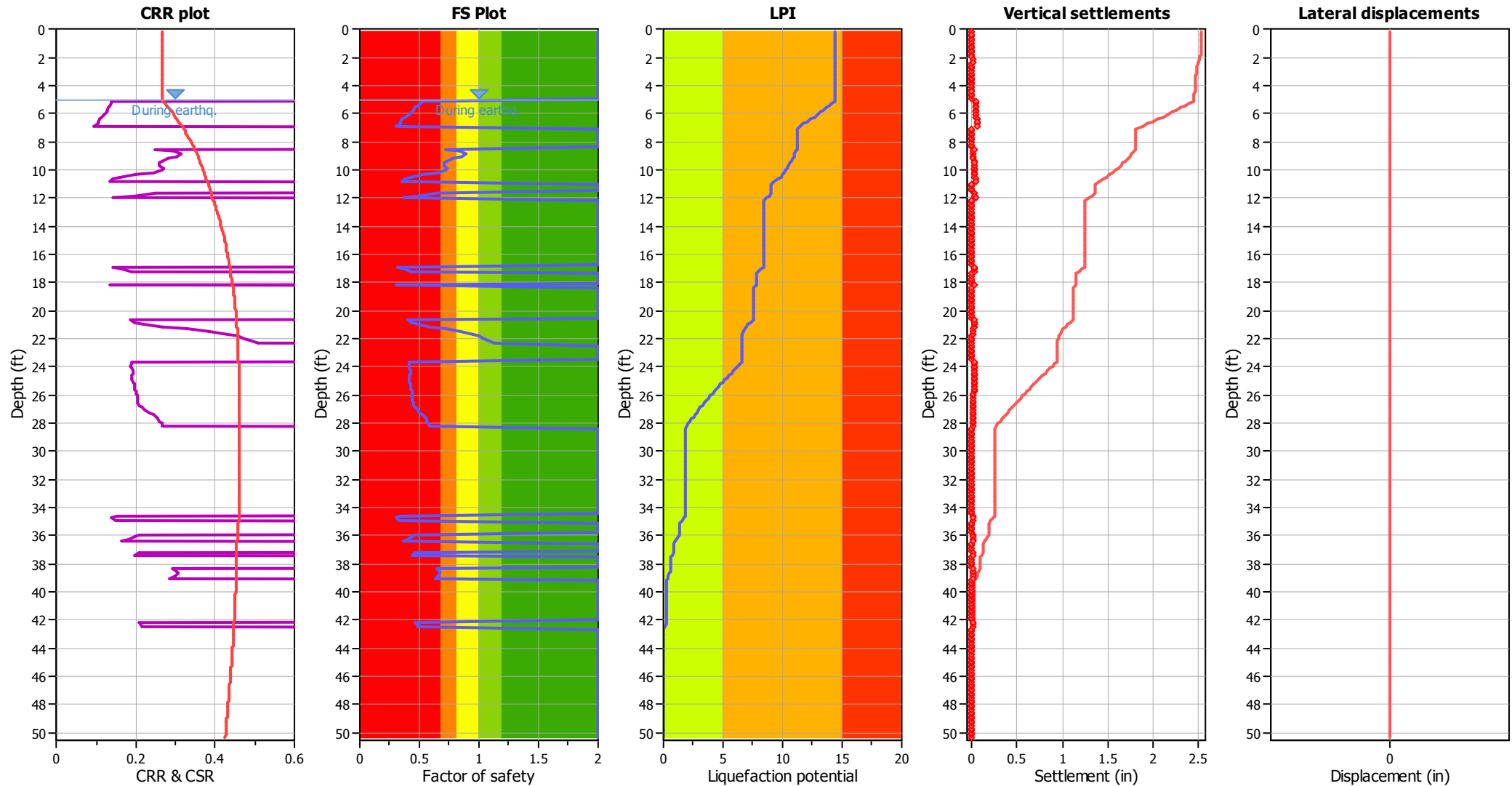
## CPT basic interpretation plots (normalized)



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

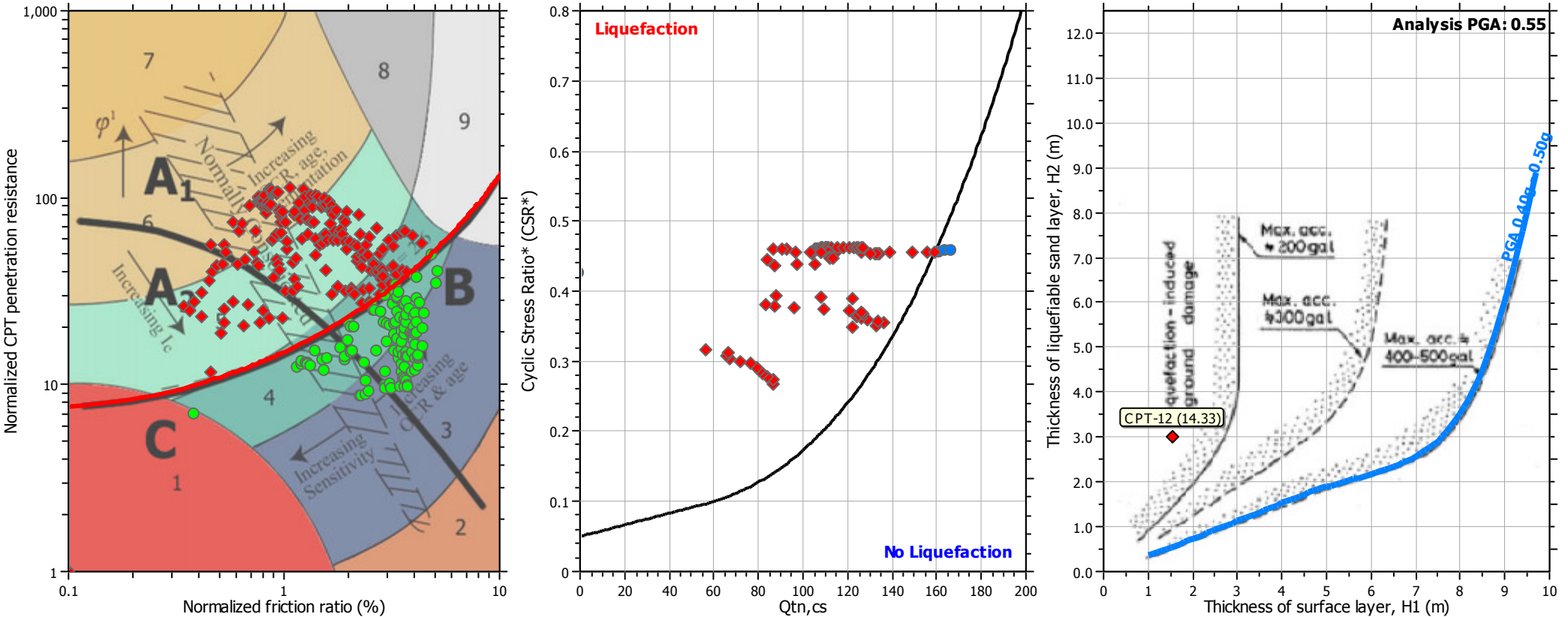
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

Liquefaction analysis summary plots

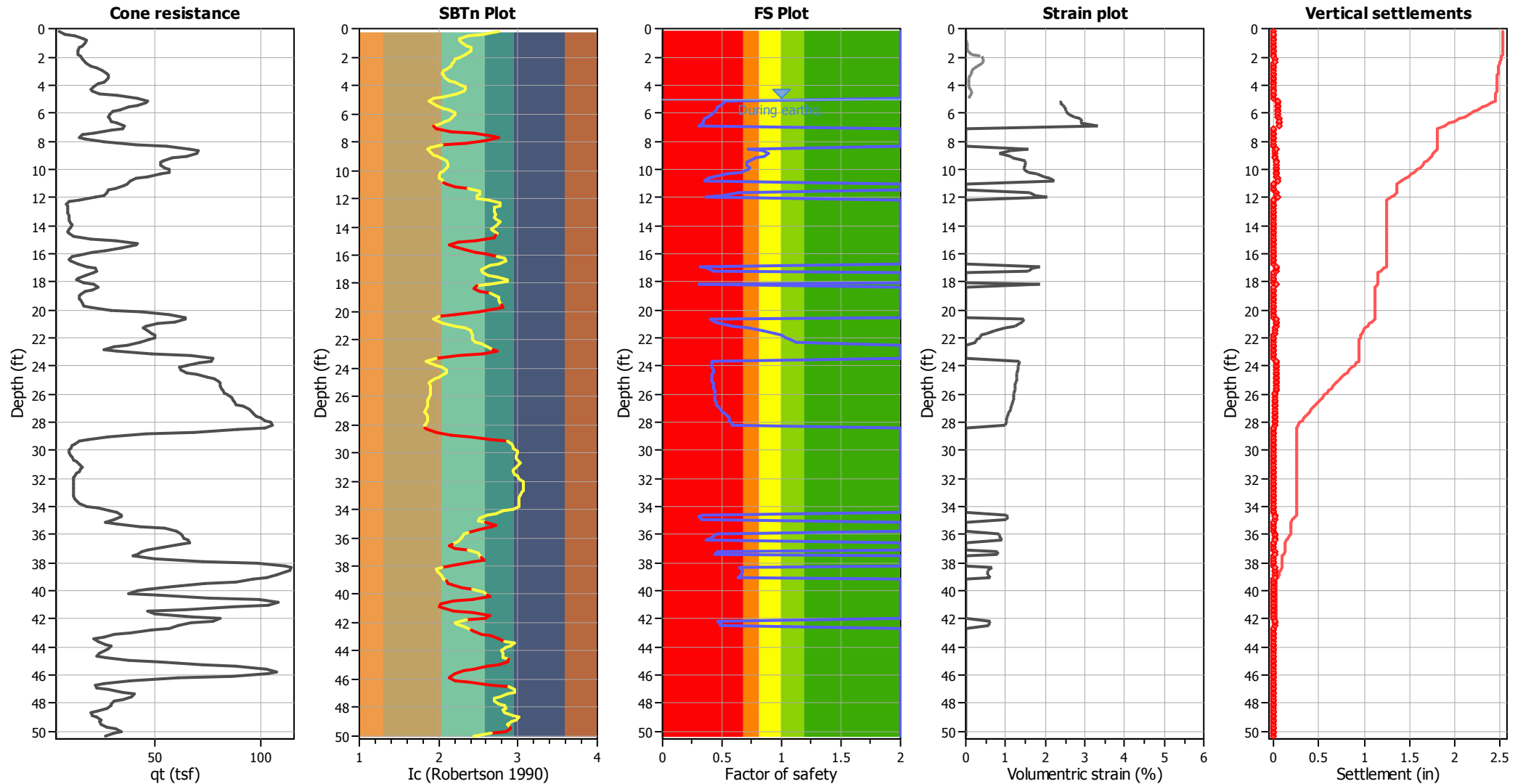


Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



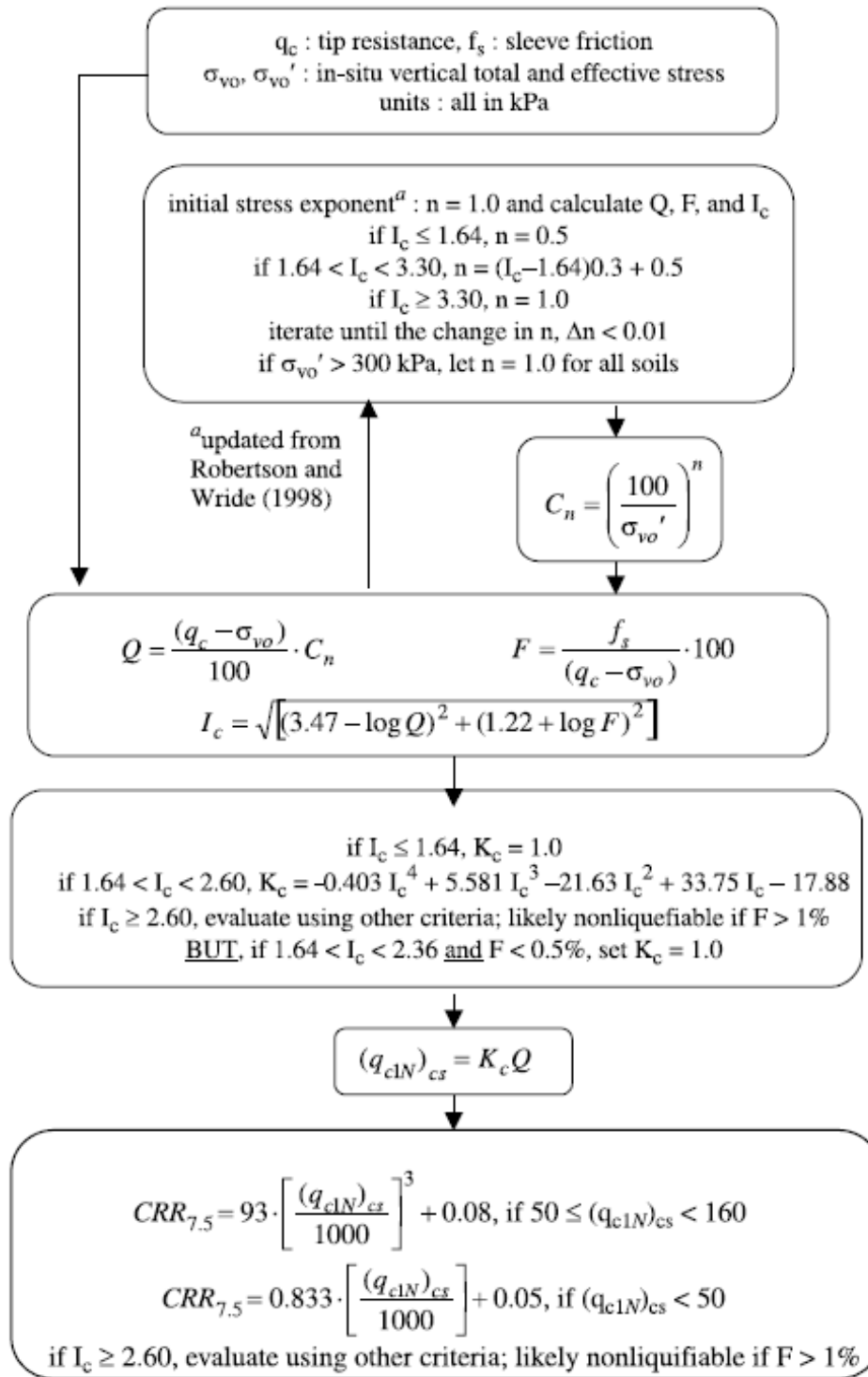
### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



## Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

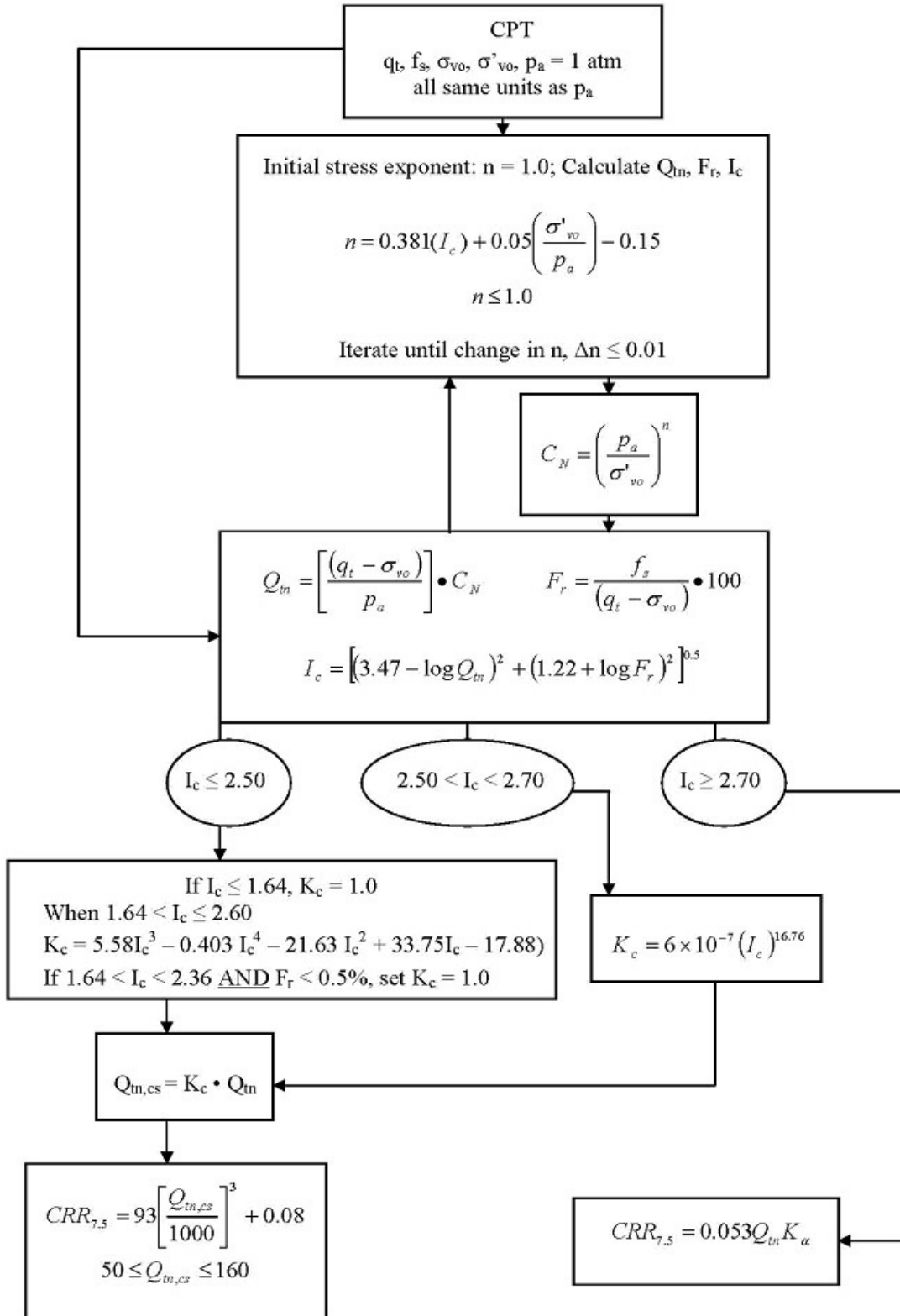
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart<sup>1</sup>:



<sup>1</sup> "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

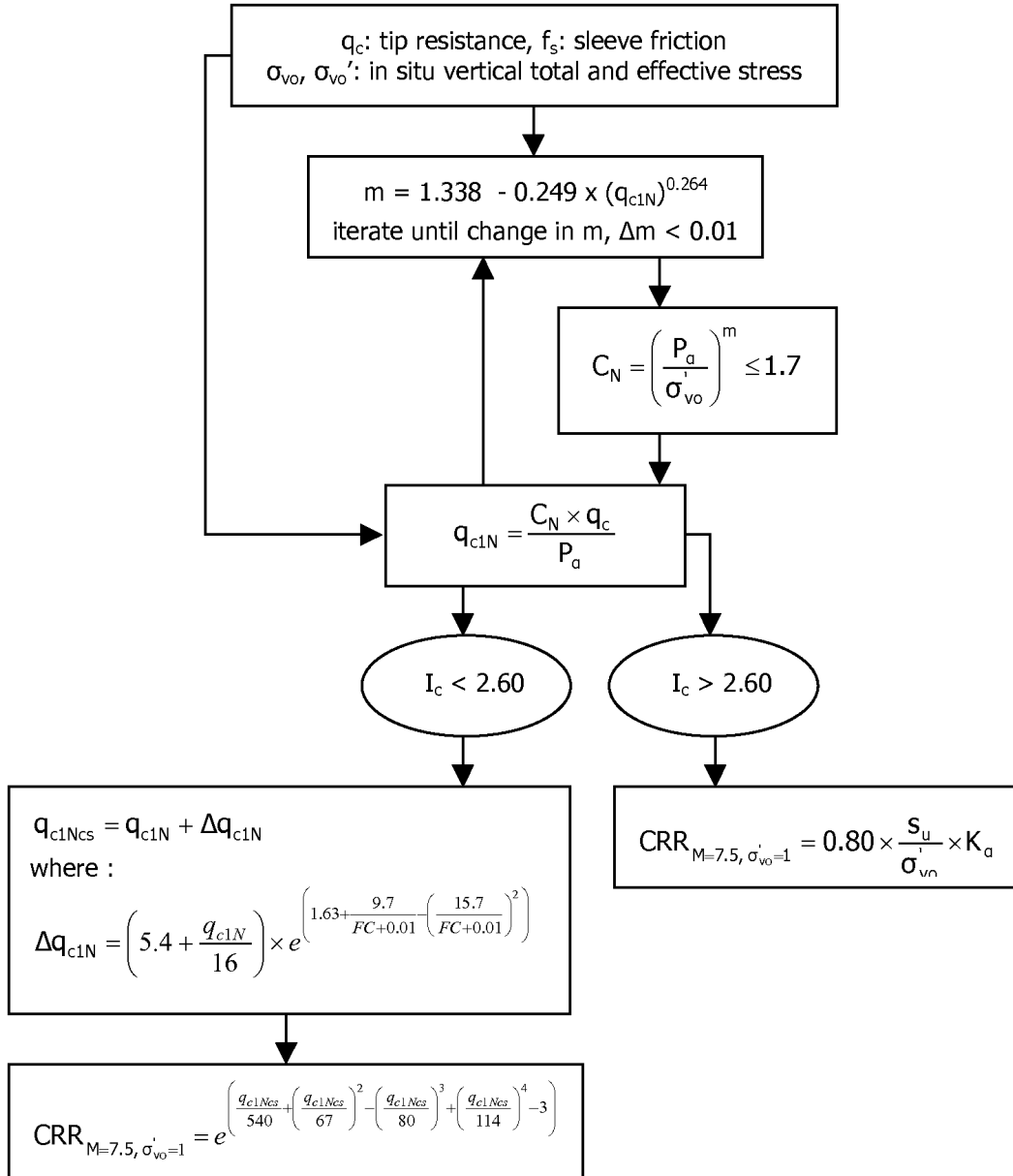
## Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart<sup>1</sup>:

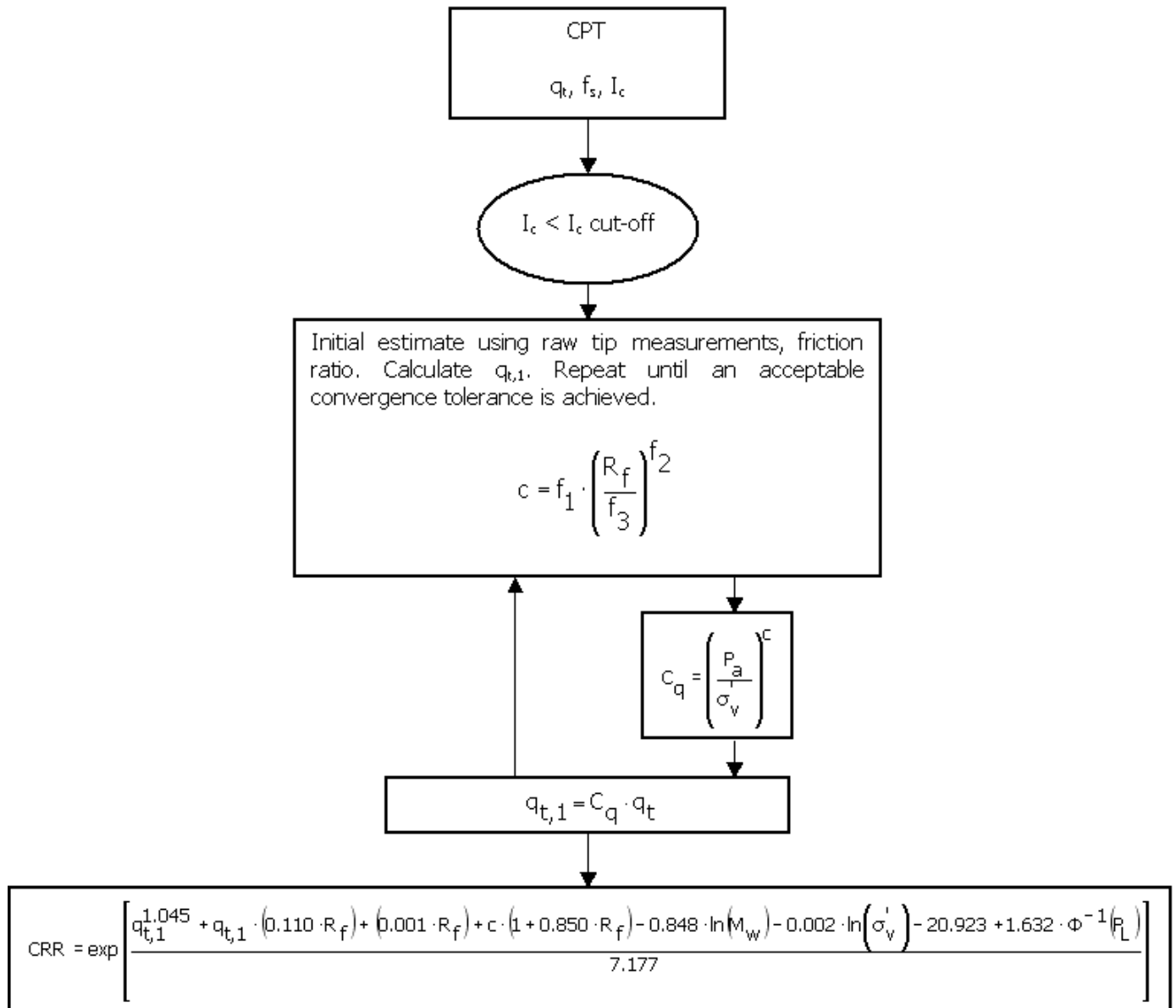


<sup>1</sup> P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

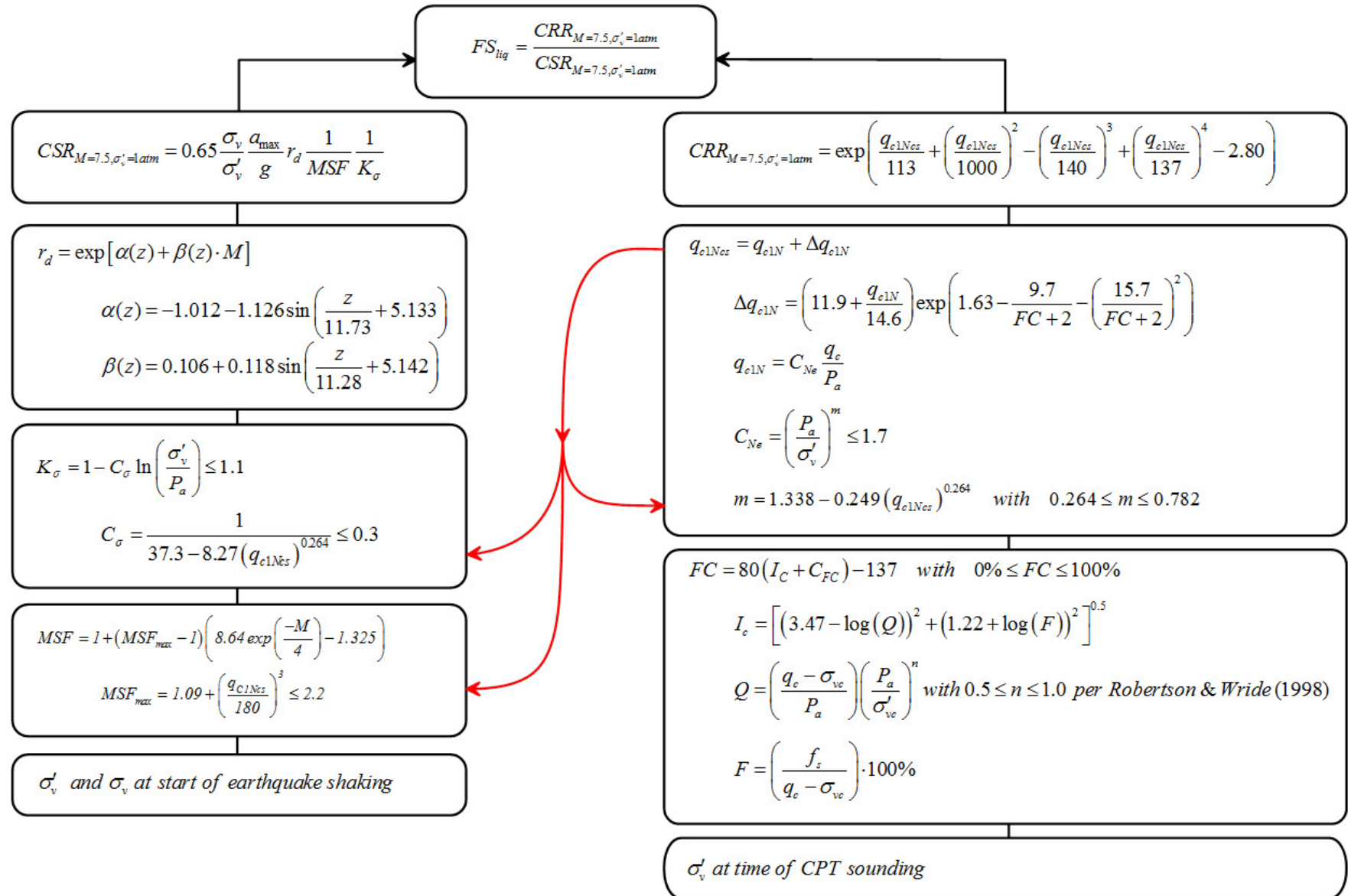
**Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)**



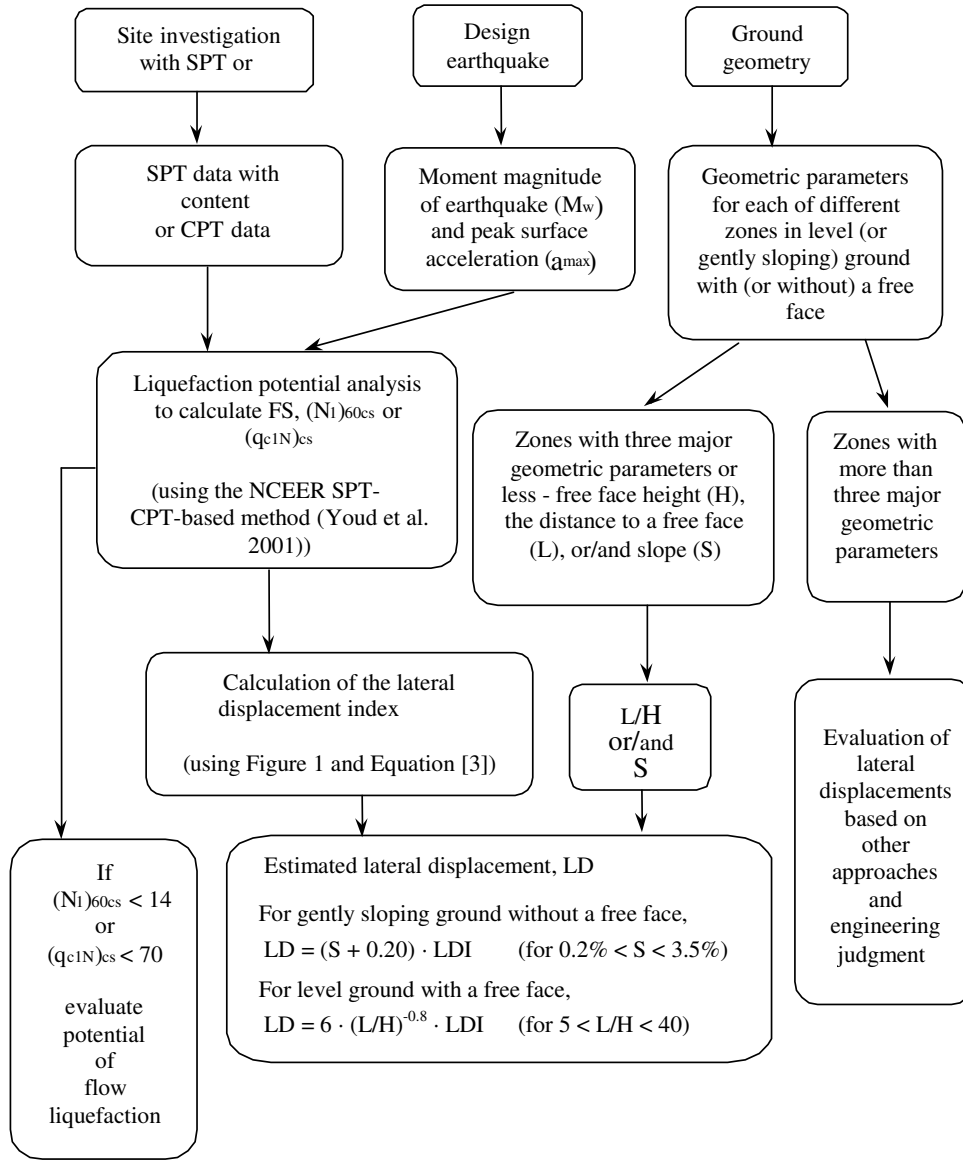
**Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)**



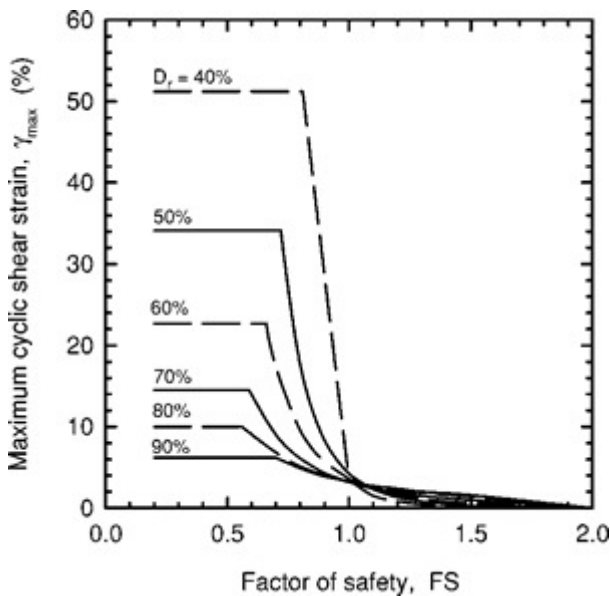
**Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)**



## Procedure for the evaluation of liquefaction-induced lateral spreading displacements



<sup>1</sup> Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



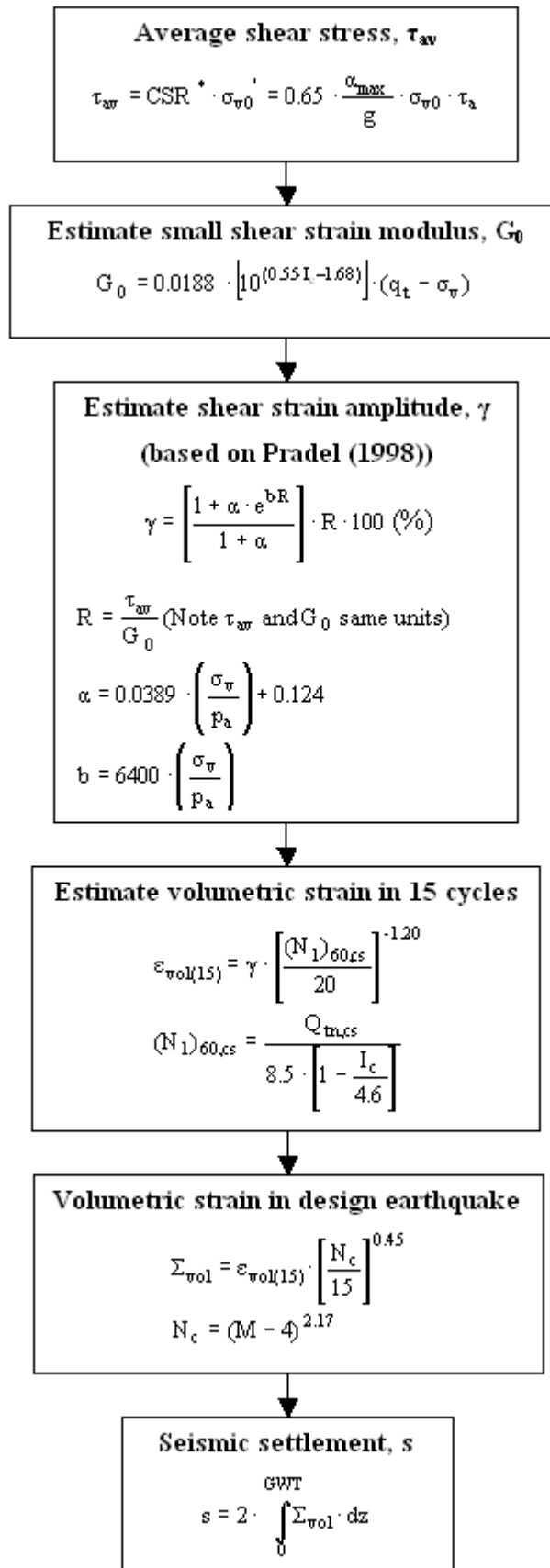
<sup>1</sup> Figure 1

$$LDI = \int_0^{Z_{max}} \gamma_{max} dz$$

<sup>1</sup> Equation [3]

<sup>1</sup> "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

## Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

## Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methodology developed by Iwasaki (1982) and is adopted by AFPS.

To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$LPI = \int_0^{20} (10 - 0.5z) \times F_L \times dz$$

where:

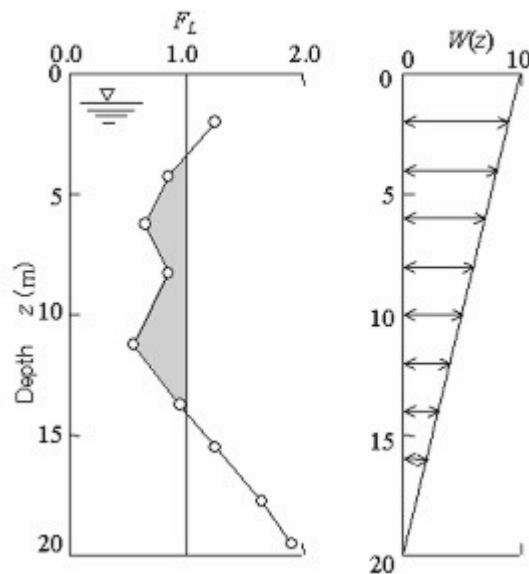
$F_L = 1 - F.S.$  when F.S. less than 1

$F_L = 0$  when F.S. greater than 1

$z$  depth of measurement in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- $LPI = 0$  : Liquefaction risk is very low
- $0 < LPI \leq 5$  : Liquefaction risk is low
- $5 < LPI \leq 15$  : Liquefaction risk is high
- $LPI > 15$  : Liquefaction risk is very high



**Graphical presentation of the LPI calculation procedure**



## Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$\begin{aligned} \ln(D_s) = & c_1 + c_2 * LBS + 0.58 * \ln\left(\tanh\left(\frac{HL}{6}\right)\right) + \\ & 4.59 * \ln(Q) - 0.42 * \ln(Q)^2 - 0.02 * B + \\ & 0.84 * \ln(CAV_{dp}) + 0.41 * \ln(Sa_1) + \varepsilon \end{aligned}$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

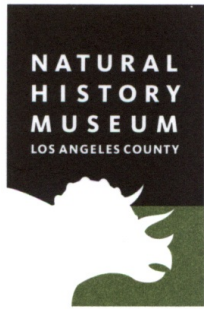
$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε<sub>shear</sub>) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

## References

- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.
- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652
- Boulanger, R.W. and Idriss, I. M., 2014. CPT AND SPT BASED LIQUEFACTION TRIGGERING PROCEDURES. DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING COLLEGE OF ENGINEERING UNIVERSITY OF CALIFORNIA AT DAVIS
- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at <http://www.geologismiki.gr/>
- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.
- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.
- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833
- Zhang, G., Robertson, P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180
- Zhang, G., Robertson, P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871
- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368
- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70
- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104
- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355
- P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering - from case history to practice, IS-Tokyo, June 2009
- Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss*, SAN diego, CA
- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006
- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

Natural History Museum  
of Los Angeles County  
900 Exposition Boulevard  
Los Angeles, CA 90007  
tel 213.763.DINO  
www.nhm.org



Vertebrate Paleontology Section  
Telephone: (213) 763-3325

e-mail: [smcleod@nhm.org](mailto:smcleod@nhm.org)

13 December 2019

LSA Associates, Inc.  
20 Executive Park, Suite 200  
Irvine, California 92614

Attn: Sarah Rieboldt, Ph.D., Associate / Senior Paleontologist

re: Paleontological Resources Records Check for the proposed Cypress Mixed-Use Development Project, LSA Project # SHO1901, in the City of Cypress, Orange County, project area

Dear Sarah:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Cypress Mixed-Use Development Project, LSA Project # SHO1901, in the City of Cypress, Orange County, project area as outlined on the portion of the Los Alamitos USGS topographic quadrangle map that you sent to me via e-mail on 9 December 2019. We do not have any vertebrate fossil localities that lie directly within the proposed project area, but we do have vertebrate fossil localities nearby from sedimentary deposits similar to those that occur in the proposed project area, either at the surface or at depth.

Surficial sediments at the proposed project area and in the surrounding vicinity consist of younger Quaternary Alluvium, with older Quaternary sediments occurring at various depths, as part of the floodplain deposits from Carbon Creek that currently flows just to the north and from Coyote Creek and the San Gabriel River that currently flow just to the west. The younger Quaternary deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but older Quaternary deposits at modest depth may well contain significant fossil vertebrate remains.

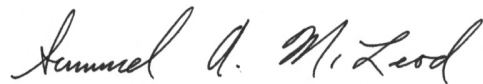
Our closest fossil vertebrate locality from older Quaternary deposits is locality LACM 3757, southwest of the proposed project area south of 7<sup>th</sup> Street and east of the Pacific Coast

Highway, that produced fossil specimens of eagle ray, *Myliobatis*, guitar fish, Rhinobatoidea, white shark, *Carcharodon*, blue shark, *Prionace*, surfperches, *Damalichthys* and *Rhacochilus*, croaker, *Genyonemus*, pond turtle, *Clemmys*, sea duck, *Chendytes*, loon, *Gavia*, dog *Canis*, sea otter, *Enhydra*, horse, *Equus*, camel, *Hemiauchenia*, and pocket gopher, *Thomomys*. Further to the west along 7<sup>th</sup> Street, west of the Pacific Coast Highway, we have locality LACM 6746 that produced fossil mammoth, *Mammuthus*. North of locality LACM 6746 and west-southwest of the proposed project area we have the locality LACM 7493, near the intersection of the Pacific Coast Highway (Highway 1) and Grand Avenue, that produced a fossil specimen of camel, Camelidae, at a depth of 8.5 feet below the surface.

Shallow excavations in the uppermost few feet of the younger Quaternary sediments exposed in the proposed project area are unlikely to uncover significant fossil vertebrate remains. Deeper excavations in the proposed project area that extend down into older Quaternary sediments, however, may well encounter significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in cursive script that reads "Samuel A. McLeod".

Samuel A. McLeod, Ph.D.  
Vertebrate Paleontology

enclosure: invoice



## APPENDIX F

### PHASE I ENVIRONMENTAL SITE ASSESSMENT AND PHASE II LIMITED SOIL INVESTIGATION



**This page intentionally left blank**

# **Phase I Environmental Site Assessment and Phase II Limited Soil Investigation**

---

Northwest Corner of Katella Avenue and  
Winners Circle  
Cypress, California

June 26, 2019

*Prepared for:*

**Shea Properties**

*Prepared by:*

**Roux Associates, Inc.**  
5150 East Pacific Coast Highway, Suite 450  
Long Beach, California 90804

# Table of Contents

1. Introduction .....	1
1.1 Purpose .....	1
1.2 Scope of Services.....	1
1.3 Phase I ESA Standard of Care.....	2
1.4 Phase I ESA Assumptions.....	3
1.5 Phase I ESA Limitations and Exceptions .....	4
1.6 Phase I ESA Special Terms and Conditions .....	4
1.7 User Reliance .....	5
2. Site Description .....	6
2.1 Location and Legal Description .....	6
2.2 Site and Vicinity General Characteristics .....	6
2.3 Description of Structures, Roads, and Other Site Improvements .....	6
2.4 Current and Past Use of the Site.....	6
2.5 Current Uses of the Adjoining Properties .....	6
2.6 Physical Setting .....	6
2.6.1 Surface Water and Drainage .....	7
2.6.2 Physiographic Setting .....	7
2.6.3 Regional and Local Geology.....	7
2.6.4 Regional and Local Hydrogeology.....	7
3. User-Provided Information .....	8
3.1 Environmental Liens or Activity and Use Limitations.....	8
3.2 Specialized Knowledge .....	8
3.3 Valuation Reduction for Environmental Issues.....	8
3.4 Commonly Known or Reasonably Ascertainable Information .....	8
3.5 Obvious Indicators of the Presence or Likely Presence of Contamination of the Site .....	8
3.6 Previous Phase I ESA Report .....	8
4. Records Review .....	10
4.1 Historical Sources Summary .....	10
4.2 Database Search.....	15
4.3 Information from Government Agencies.....	21
4.3.1 Federal Agencies .....	22
4.3.2 State Agencies .....	22
4.3.3 County/Regional Agencies.....	23
4.3.4 City/Local Agencies.....	24
5. Site Reconnaissance .....	25
5.1 Methodology and Limiting Conditions .....	25
5.2 Interior and Exterior Observations.....	25
5.2.1 Drainage Swales or Culverts .....	26
5.2.2 Drains, Sumps, Wells, or Subsurface Piping .....	26
5.2.3 Equipment Suspected to Contain Polychlorinated Biphenyls .....	26
5.2.4 Pools of Liquid.....	26
5.2.5 Solid Waste .....	26
5.2.6 Stained Pavement.....	26



## Table of Contents (Continued)

5.2.7	Other Features .....	26
5.2.8	Vapor Intrusion .....	27
6.	Findings .....	28
6.1	Data Gaps .....	28
6.2	Recognized Environmental Conditions .....	28
6.3	Controlled Recognized Environmental Conditions .....	28
6.4	Historical Recognized Environmental Conditions .....	28
7.	Phase II Limited Soil Investigation .....	29
7.1	Methods of Investigation .....	29
7.1.1	Pre-Field Activities .....	29
7.1.2	Soil Sampling Methodology and Sample Collection .....	29
7.1.3	Laboratory Analyses .....	30
7.2	Results .....	30
7.3	Conclusions and Recommendations .....	31
8.	Deviations .....	32
9.	References .....	33
10.	Signature of Environmental Professional .....	34

## Figures

1. Site Location Map
2. Site Plan
3. Soil Boring Locations

## Tables

1. Soil Analytical Results

## Appendices

- A. User-Provided Information
- B. Glossary of Terms
- C. Historical Topographic Maps
- D. EDR Radius Map Report with GeoCheck®
- E. Previous Phase I ESA
- F. Historical Aerial Photographs
- G. City Directories
- H. Sanborn Fire Maps
- I. Regulatory Records Documentation

## Table of Contents (Continued)

- J. Photographic Log
- K. Laboratory Report
- L. Personnel Qualifications

## Executive Summary

Shea Properties (the User) retained Roux Associates, Inc. (Roux Associates) to perform a Phase I Environmental Site Assessment (ESA) and Phase II Limited Soil Investigation of a property located at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, with the Assessor's Parcel Numbers (APNs) 241-091-22, 23, 24, 25, and 26 (Site). As specified in our Proposal dated May 8, 2019, Roux Associates performed this Phase I ESA in general accordance with the American Society for Testing Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13) in an effort to identify, to the extent feasible, the presence of *recognized environmental conditions* (RECs) with respect to the Site as defined in ASTM E1527-13. Exceptions to, or deviations from, this practice are described in Sections 1.5 and 8.0 of this report.

The Site is a relatively flat vacant lot, approximately 13.29 acres in size, with no physical street address. The Site has historically been used for surface parking and staging of empty truck trailers and is bordered by an entrance to the Los Alamitos Race Course to the west, beyond which is a retail development; parking for the Los Alamitos Race Course (Race Course) to the north; Winners Circle to the east, beyond which is Costco and other retail development; and, Katella Avenue to the south, beyond which are commercial properties.

On May 13, 2019 Roux Associates representatives Messrs. Mauricio Escobar and Mark Edwards visually assessed the Site for potential RECs, including, but not limited to, potential underground storage tanks, aboveground storage tanks, polychlorinated biphenyl-containing equipment, hazardous materials storage or handling areas, containerized or bulk wastes, and visual indications of impacted soil. Roux Associates was unaccompanied during the Site reconnaissance. Roux Associates also performed a records review for the Site and surrounding properties in an effort to identify potential RECs in connection with the Site and assess potential concerns associated with the migration of hazardous substances to the Site from off-Site sources. The records review included reasonably ascertainable historical data, which can be helpful in identifying the past uses of the Site and surrounding areas, as it may relate to the environmental condition of the Site.

ASTM E1527-13 defines a REC as:

"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to 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. *De minimis* conditions are not recognized environmental conditions."

A Controlled Recognized Environmental Condition (CREC) as:

"A recognized environmental condition 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), 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)."

And a Historical Recognized Environmental Condition (HREC) as:

“A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting 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 historical recognized environmental condition, the environmental professional must determine whether the past release is a *recognized* environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition.”

The term *recognized environmental condition* is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

This Executive Summary provides a brief overview of the findings of this Phase I ESA and Phase II Limited Soil Investigation. Although the Executive Summary is an integral part of a report, it does not substitute for reading the entire report or the appended or referenced documents in order to fully understand the findings and potential environmental concerns associated with the Site.

Based upon the results of the Phase I ESA investigation described in this report, Roux Associates identified the following REC in connection with the Site.

- **REC-1: Disturbed/Imported Soils.** Areas of historically disturbed and/or imported soils were identified along the southern and eastern boundaries of the Site. Aerial photographs from 1977 to 1990 suggest that two roughly square areas surrounded by earthen berms were being used to collect surface run-off from the Site and a portion of the Race Course to the north. Also, during the Site reconnaissance an approximately 5-foot high berm was observed along the length of the southern boundary, immediately adjacent to Katella Avenue; it is apparent from aerial photographs this was a feature that was emplaced in the mid-1990s. Additionally, near the southeastern corner of the Site, on-Site topography is several feet higher than the surroundings. Finally, aerial photographs show a construction staging area at the northeastern portion of the Site in the mid-2000s, which was confirmed by Mr. Frank Sherren who works for the Race Course and is knowledgeable of historical Site activities. During the Site reconnaissance it was noted that this northeastern area of the Site is missing surface pavement and coarse gravels resembling road base appeared to have been brought to the Site. Evidence of disturbed and possibly imported materials is considered a REC for the Site.

Based upon the investigations described in this report, this Phase I ESA did not reveal evidence of HRECs in connection with the Site.

Based upon the investigations described in this report, this Phase I ESA did not reveal evidence of CRECs in connection with the Site.

On June 7, 2019, Roux Associates performed a Phase II Limited Soil Investigation at the Site to address disturbed and possibly imported materials along the southern and eastern portions of the Site. Shallow soil samples from approximately 0.5 and 1.5 feet below ground surface (bgs) were collected from eight locations

using hand tools. Initially all of the samples collected from 0.5 feet bgs were submitted for laboratory analysis of California Title 22 metals. In addition, one randomly selected sample collected from 0.5 feet bgs was also analyzed for Total Petroleum Hydrocarbons (TPH) and Volatile Organic Compounds (VOCs). Laboratory reports showed that Title 22 metals concentrations for all samples analyzed were within acceptable background ranges. Additional analyses showed TPH concentrations below actionable levels and VOC concentrations below laboratory method reported limits (MRLs) for all constituents in the one sample analyzed. Based on the results of the Phase II Limited Soil Investigation, REC-1 has been addressed and Roux Associates does not recommend any additional investigation at the Site.

# 1. Introduction

Roux Associates, Inc. (Roux Associates) completed this Phase I Environmental Site Assessment (ESA) and Phase II Limited Soil Investigation of an approximately 13.29-acre property with Assessor's Parcel Numbers (APNs) 241-091-22, 23, 24, 25, and 26, located at the northwest corner of Katella Avenue and Winners Circle in Cypress, California (Site; Figures 1 and 2). Roux Associates has performed the Phase I ESA in compliance with the scope and limitations of American Society for Testing Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13). Both the Phase I ESA and the Phase II Limited Soil Investigation were performed in accordance with the scopes of work and the terms and conditions of Roux Associates' proposals dated May 8, 2019 and May 30, 2019, respectively. Roux Associates conducted all of the work documented in this report for the benefit of Shea Properties (the User). Shea Properties is in the process of evaluating potential purchase and redevelopment of the Site as a mixed-use commercial and residential property, as presented in plans provided in Appendix A.

Sections 3 through 6 of this report present our Phase I ESA findings and conclusions. Section 7 presents the protocols and procedures for the Phase II Limited Soil Investigation, as well as the sampling rationale, the laboratory results, and the conclusions and recommendations of the investigation. A glossary containing terms and definitions presented in ASTM E1527-13 is included as Appendix B – Glossary of Terms. Other appendices presented at the end of the report consist of figures, a table presenting soil analytical results, User-provided information, historical records, regulatory records review documentation, personnel qualifications, and laboratory data.

## 1.1 Purpose

The purpose of this Phase I ESA is to identify and report, to the extent feasible, recognized environmental conditions (RECs) with respect to the Site. Performing a Phase I ESA in general compliance with ASTM E1527-13 may enable a User to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability. That is, the practice that constitutes one of the requirements for "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 USC Section 9601(35) (B).

The purpose of the Phase II Limited Soil Investigation was to address REC-1 by collecting shallow soil samples from the southern and eastern portions of the Site and conducting laboratory analysis to evaluate concentrations of Title 22 Metals, Total Petroleum Hydrocarbons (TPH) and volatile organic compounds (VOCs). The Phase II Limited Soil Investigation was intended to provide opinions and recommendations as to additional work that could be necessary for the Site (with respect to REC-1), if any.

## 1.2 Scope of Services

The scope of services for the Phase I ESA included, but was not limited to, the activities listed below:

- A review of reasonably ascertainable and practicably reviewable topographic maps, historical aerial photographs, and city directories to investigate past Site conditions;
- A review of specific government lists pursuant to ASTM Standard E1527-13 regarding environmental activities for the Site and local area properties;

- A review of records, permits, citations, and/or reports connected to the Site that were reasonably ascertainable, practicably reviewable, and publicly available within reasonable time and cost;
- An inspection by an environmental professional to investigate the current use of the Site and to identify environmental concerns including but not limited to, the presence of hazardous substances or petroleum products, wastes, underground storage tanks (USTs), aboveground storage tanks (ASTs), or other environmental concerns; and
- Preparation of this Phase I ESA Report.

Roux Associates initiated this Phase I ESA pursuant to written authorization received from the User on May 8, 2019.

The scope of services for the Phase II Limited Soil Investigation included, but was not limited to, the activities listed below:

- Pre-field activities including the preparation of a Site-specific Health & Safety Plan (HASP) and the notification of Underground Service Alert (USA) of intended subsurface work;
- Collection of subsurface soil samples from eight (8) locations across the Site followed by laboratory analysis of the samples; and,
- Preparation of this Phase II Limited Soil Investigation Report.

Roux Associates initiated the Phase II Limited Soil Investigation pursuant to written authorization received from the User on June 2, 2019.

### **1.3 Phase I ESA Standard of Care**

Roux Associates conducted the Phase I ESA using a defined scope of services considered appropriate and agreed upon by all parties on the date the service was authorized, unless the scope of services or the methods used were later modified, in writing, and accepted by all parties prior to performance. Roux Associates conducted this Phase I ESA in accordance with generally accepted practices in a manner consistent with that level of care exercised by other members of our profession in the same locality and under similar conditions of time and accessibility of improvements and information. No other representations, expressed or implied, and no warranty or guarantee is included or intended to be part of this Phase I ESA.

Please note that the scope of services performed in execution of this assessment may not be appropriate to satisfy the needs of other parties. We, therefore, are not responsible for independent conclusions, opinions, or recommendations of others based on our assessment. Furthermore, this Phase I ESA relates to the environmental conditions of the Site and does not address issues raised in transactions such as business risk, purchase of business entities, or interests therein, or of their assets, that may well involve environmental liabilities pertaining to properties previously owned or operated or other off-site liabilities.

Additionally, the findings of this Phase I ESA are based on Roux Associates' observations, inquiries, and historical research using reasonably ascertainable and practicably reviewable information obtained within reasonable time and cost constraints. Roux Associates does not represent that this Phase I ESA is an exhaustive investigation that reflects the findings of all of the information available for the Site, nor is it

representative of future Site conditions. If additional information is generated from the Site, it should be provided to Roux Associates so that we may evaluate its impact on our conclusions. As such, activities or episodes that transpire subsequent to this Phase I ESA are not considered in this assessment. It is not intended that a Phase I ESA in accordance with ASTM E1527-13 be an exhaustive assessment of a property nor can it wholly eliminate uncertainty regarding the potential for RECs in connection with a property.

## 1.4 Phase I ESA Assumptions

This Phase I ESA Report, including the exhibits attached hereto, describes the results of Roux Associates' investigation to identify the presence of RECs connected with the Site in accordance with ASTM E1527-13, as allowed by and consistent with the regulatory requirements of the All Appropriate Inquiry (AAI) Rule, 40 CFR Part 312, Amendment to Standards and Practices for All Appropriate Inquiries Under CERCLA, Final Rule, published December 30, 2013 (AAI Rule). Specifically, the preamble to the amended AAI Rule states:

*The Environmental Protection Agency (EPA) today is taking final action to amend the standards and practices for conducting all appropriate inquiries under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to reference a standard practice recently made available by ASTM International, a widely recognized standards development organization. Specifically, this final rule amends the "All Appropriate Inquiries Rule" at 40 CFR Part 312 to reference ASTM International's E1527-13 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" and make clear that persons conducting all appropriate inquiries may use the procedures included in this standard to comply with the All Appropriate Inquiries Rule<sup>1</sup>.*

One of the requirements that a person acquiring real property must meet in order to qualify for either the innocent landowner, contiguous owner, or bona fide prospective purchaser (collectively hereinafter "Prospective Purchaser") defense to liability under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, and the Small Business Liability Relief and Brownfields' Revitalization Act of 2002, 42 U.S.C. 9601-9675 (collectively referred to hereafter as "CERCLA") is that person must conduct all appropriate inquiries into the previous ownership and uses of the property in conformance with the AAI Rule (or the ASTM E1527-13) prior to acquisition of the property. The User has acknowledged that, under the AAI Rule, Roux Associates' performance of this Phase I ESA in accordance with ASTM E1527-13 will not alone result in the User satisfying all requirements of the AAI Rule and will not in itself provide a defense to CERCLA liability. The User has acknowledged that the AAI Rule also requires that the Prospective Purchaser undertake certain additional inquiries and post-acquisition activities to satisfy the CERCLA AAI requirements. Accordingly, Roux Associates makes no guarantees or warranties, expressed or implied, regarding this Phase I ESA, including without limitation, that this Phase I ESA will qualify the User for a defense to CERCLA liability.

Roux Associates has performed this Phase I ESA in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Professional judgments expressed herein are based on the facts currently available to Roux Associates.

---

<sup>1</sup> Federal Register: December 30, 2013 (Volume 78, Number 250) Page 79319



The AAI Rule requires, and the conclusions stated herein represent, the application of a variety of engineering and technical disciplines to material facts and conditions associated with the Site. As such, these conclusions are based on subjective interpretations and the exercise of discretion based on the facts available to Roux Associates and conditions at the time of the performance of this Phase I ESA. Many of these facts and conditions are subject to change over time. Accordingly, the conclusions must be considered within this context.

The User has agreed that Roux Associates shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time this Phase I ESA was performed. To the extent practicable, Roux Associates has identified data gaps, and has evaluated the potential significance of such data gaps. Recommendations to address those data gaps may be provided to the User upon request and are based on the data available at the time of the performance of this Phase I ESA. Implementation of the recommendations may not fully address the data gaps, and the information obtained from execution of those recommendations may alter and/or modify the interpretation of the Site conditions and conclusions, herein. This Phase I ESA does not include consideration of matters specifically excluded by ASTM E1527-13, including but not limited to, asbestos-containing materials (ACM), radon, lead-based paint (LBP), lead in drinking water, wetlands, regulatory compliance, and mold unless specifically identified herein.

Roux Associates has not collected samples at the Site and is relying on information from other sources. By referencing this information, Roux Associates does not accept responsibility for the accuracy of the underlying data, sampling methods, laboratory analysis, or documentation.

This Phase I ESA Report should not be considered a legal interpretation of existing environmental laws and regulations. This Phase I ESA was conducted with a reasonable degree of inquiry to identify RECs, but uncertainty is not eliminated. No Phase I ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. The Phase I ESA process is intended to reduce, but not eliminate, the uncertainty involved with identifying RECs.

This Phase I ESA Report is not an appraisal or value judgment of the Site. The User has agreed that Roux Associates shall not be liable for any use of this Phase I ESA Report as an appraisal or value judgment of the Site.

This Phase I ESA Report has been prepared for the exclusive use of the User for specific application to the Site covered by this Phase I ESA Report. The User has agreed that any third-party use of this Phase I ESA Report, upon disclosure by the User, is the sole responsibility and at the sole liability of the User.

## **1.5 Phase I ESA Limitations and Exceptions**

The limitations and exceptions associated with performing this assessment include outstanding Freedom of Information Act (FOIA) requests. These are described as data gaps in Section 6.1.

## **1.6 Phase I ESA Special Terms and Conditions**

There were no special terms and conditions associated with performing the Phase I ESA.

## 1.7 User Reliance

This report is confidential and has been prepared for the exclusive use of the User. No additional parties may use the information contained in this report without obtaining the written permission of Roux Associates or the User. Roux Associates' duties and obligations extend to the User and to no other party. Roux Associates' duties and obligations to the User are not transferable to persons, corporations, or organizations without the express written consent of the User and Roux Associates. The User may rely upon the information provided in this Phase I ESA report for a period of 180 days from the date of issue. After 180 days, this Phase I ESA should be updated in accordance with ASTM guidance. Roux Associates will not be liable for any consequential damages arising from the use of this report for other than its intended purpose, for use of this report beyond 180 days of its issue date, or from unauthorized use by third parties.

This report must be read and interpreted as a whole and can only be considered representative of the conditions of the Site as of the date of our Site reconnaissance described herein. Roux Associates makes no representation whatsoever concerning the condition of the Site beyond the date of our Site reconnaissance described herein. Individual sections and appendices of this report are dependent on the balance of this report, and on the terms, conditions, and stipulations contained in the proposal and written amendments accepted by Roux Associates.

## **2. Site Description**

### **2.1 Location and Legal Description**

The Site is located at the northwest corner of Katella Avenue and Winners Circle in the City of Cypress, California (Figures 1 and 2). According to Mr. Douglas Hawkins, City Planner for the City of Cypress, the Site has never been issued a physical street address. The Site is an approximately 13.29-acre property and identified by APNs 241-091-22, 23, 24, 25, and 26.

### **2.2 Site and Vicinity General Characteristics**

The site is currently vacant and is used as a parking lot for the adjacent Los Alamitos Race Course; at the time of the Site reconnaissance the Site was being used for temporary truck trailer parking associated with GES, an events management company. The elevation of the Site is approximately 30 feet above mean sea level (msl) according to several sources, which include Google Earth, topographic maps (Appendix C), and the Environmental Data Resources Inc. (EDR) Radius Map Report (Appendix D). The Site and vicinity are relatively flat sloping gently to the south-southwest. The Site is located in a mixed commercial and residential area.

### **2.3 Description of Structures, Roads, and Other Site Improvements**

The Site is currently undeveloped and consists of a flat, surface parking lot, which is mostly paved with the exception of its northeastern quadrant. The Site is accessible from the south by Katella Avenue, from the east by Winners Circle, and from the west by the unnamed Los Alamitos Race Course driveway. There is no physical boundary between the Site and the adjacent parking lot to the north of the Site.

### **2.4 Current and Past Use of the Site**

According to aerial photographs, topographic maps, and city directory obtained from EDR, the Site was undeveloped from at least 1896 through 1925. The Site appears to have been utilized for agricultural purposes in 1928 and the Site was vacant from at least 1938 through 1947. The Site was improved with a parking lot before 1963, and it has been generally used for that purpose since that time.

### **2.5 Current Uses of the Adjoining Properties**

The Site is located in a mixed commercial and residential area of Cypress, California. The Site is bordered to the west by an entrance to the Los Alamitos Race Course, beyond which is a commercial retail development; parking for the Los Alamitos Race Course is located to the north of the Site; Winners Circle borders the Site to the east, beyond which is Costco and other commercial retail development; and, Katella Avenue borders the Site to the south, beyond which are commercial office properties. No concerns were noted on the adjacent properties during the Site reconnaissance.

### **2.6 Physical Setting**

Roux Associates obtained and reviewed published, reasonably ascertainable information concerning the physical setting of the Site. The following is a summary of our review of those physical setting sources.

### **2.6.1 Surface Water and Drainage**

The only surface water and drainage features of note on the Site are two surface concrete drainage swales that lead to two drains at the southern portion of the Site. These drains lead directly to storm water drainage pipes that run along Katella Avenue, as confirmed by Mr. Hawkins with the City of Cypress. Aerial photographs from 1977 to 1990 suggest that prior to installation of the drains, surface water ran along the same surface swales into two square unlined features surrounded by small berms. The nearest surface water feature in the Site vicinity is the Rossmoor Storm Channel, which is located approximately 1,500 feet south of the Site.

### **2.6.2 Physiographic Setting**

The elevation of the Site is approximately 30 feet above mean sea level. The Site is situated within a physiographic feature called the Downey Plain, which forms a part of the greater coastal plain of the Los Angeles Basin. Recent sediments underlying the Downey Plain region include unconsolidated gravel, sand, silt, and clay originally deposited in a fluvial environment. Below recent Downey Plain alluvial deposits are up to 2,000 feet of Quaternary and Tertiary deposits (Arcadis, 2011).

### **2.6.3 Regional and Local Geology**

According to the California Department of Conservation 2010 Geologic Map of California, the Site vicinity is underlain by alluvium, lake, playa and terrace deposits of the Pleistocene-Holocene era, unconsolidated and semi-consolidated. According to documents for subsurface investigations at nearby sites, underlying sediments in the vicinity of the Site primarily consist of fine-grained sands with silt, with lenses of interbedded clays from the ground surface to approximately 20 feet below ground surface (bgs) (Arcadis, 2011).

### **2.6.4 Regional and Local Hydrogeology**

According to the California Department of Water Resources (DWR) Groundwater Bulletin 118 – Update 2003, the Site is located in the Coastal Plain of Orange County Groundwater Basin (Orange County Basin). The Orange County Basin consists of an accumulation of fresh water-bearing marine and continental sand, silt, and clay deposits. The Basin consists of the Upper, Middle, and Lower Aquifer system. The Upper Aquifer System averages approximately 800 feet in thickness and includes Holocene and older alluvium deposits, terrace deposits, and upper Pleistocene deposits including the La Habra Formation (DWR, 2003).

Roux Associates reviewed the December 2011 Arcadis *Confirmation Soil Borings Report* for a nearby release case located at 5100 Katella Avenue, approximately 230 feet southwest of the Site. The report is available on the California State Water Resources Control Board (SWRCB) GeoTracker database. Based on the groundwater monitoring data provided in the report, the expected direction of groundwater flow is to the west-southwest in the Site vicinity. This is generally consistent with the topography of the area. The reported depth to groundwater in 2011 was 4.62 to 7.37 feet below ground surface (bgs).

### 3. User-Provided Information

ASTM E1527-13 provides that the User perform certain tasks. The purpose of this section is to present select User-provided information that can assist in identifying possible RECs in connection with the Site. According to ASTM E1527-13, these tasks do not require the technical expertise of an environmental professional and the environmental professional generally does not perform these tasks.

Roux Associates administered a questionnaire to the User at the beginning of this Phase I ESA to assist them with these tasks. Ms. Elizabeth Cobb of Shea Properties completed the questionnaire, included in Appendix A, on May 8, 2019. According to the questionnaire, Ms. Cobb had no knowledge of current or prior developments on the Site.

Ms. Cobb was not aware of any environmental liens, activity and land-use limitations, engineering or institutional controls, chemical releases or contamination on the Site, or environmental cleanups in connection with the Site.

#### 3.1 Environmental Liens or Activity and Use Limitations

The User indicated that they have no knowledge regarding environmental liens or activity and use limitations (engineering/institutional controls) with respect to the Site.

#### 3.2 Specialized Knowledge

The User did not report any specialized knowledge related to the Site.

#### 3.3 Valuation Reduction for Environmental Issues

The User indicated that they have no knowledge regarding valuation reduction for environmental issues.

#### 3.4 Commonly Known or Reasonably Ascertainable Information

The User did not have any knowledge regarding commonly known or reasonable ascertainable information about the Site not otherwise addressed.

#### 3.5 Obvious Indicators of the Presence or Likely Presence of Contamination of the Site

The User did not have any knowledge regarding obvious indicators of the presence or likely presence of contamination of the Site not otherwise addressed.

#### 3.6 Previous Phase I ESA Report

Roux was provided the following previous Phase I ESA for review:

*Phase I Environmental Site Assessment for Commercial Property, APN's #241-091-22, 23, 24, 25 & 26, Cypress, CA. 90630, dated August 10, 2006, prepared by DCI Environmental Services (DCI; Appendix E).*

DCI did not identify any "hazardous substances that pose a threat to the environmental integrity of the Subject Property" and noted that "it does not appear that the Subject Property...is adversely impaired by hazardous

substances or underground storage tanks” during the preparation of the ESA. The parking lot area of the Site was noted to be in generally good condition during the Site reconnaissance.

In their conclusions and recommendations, DCI did not identify any RECs in conjunction with the Site or recommend further environmental investigations.

## 4. Records Review

The historical uses of the Site and surrounding properties were researched through the review of historical aerial photographs (Appendix F), historical topographic maps (Appendix C), and the EDR City Directory Search (Appendix G) (Section 4.1). No Sanborn Fire Insurance Maps were available for the Site, as indicated in Appendix H.

### 4.1 Historical Sources Summary

The table below provides a historical summary of the Site in 10-year increments using information compiled from historical aerial photographs (Appendix F), historical United States Geological Survey (USGS) topographic maps (Appendix C), and the EDR City Directory Search (Appendix G). The table includes a discussion of pertinent findings, but it is not exhaustive of all historical information that may be available for the Site.

Summary of Historical Sources		
Date Range	Site Description	Historical Sources
Pre-1920	The Site appears to be undeveloped from at least 1896 through the 1910s. Approximately 600 feet north of the Site is a Southern Pacific railroad (Los Alamitos Branch), which is depicted as being installed by 1902. A creek is depicted approximately 0.25 miles east of the Site. Other properties in the vicinity also appear to be mostly undeveloped with the exception of one structure that is present to the east-northeast of the Site near the creek. By 1902 an unlabeled road is present to the immediate south of the Site in the location of present-day Katella Avenue, and other roads are present throughout the Site vicinity.	- 1896, 1899, and 1902 USGS Downey Topographic Maps
1920-1929	<p>The 1923 and 1925 topographic maps do not show details of the Site vicinity.</p> <p>The Site appears to be used for agricultural purposes in the 1928 aerial photograph. One structure that appears to be used for agricultural/homestead purposes is situated approximately 500 feet west of the Site. Other parcels remain undeveloped and appear to be vacant or agricultural.</p>	<p>- 1923 and 1925 USGS Artesia Topographic Maps</p> <p>- 1928 EDR Aerial Photograph</p>

Summary of Historical Sources		
Date Range	Site Description	Historical Sources
1930-1939	<p>The 1935 topographic map depicts a tank farm labeled “Texas Oil Tank Farm” approximately 0.6 miles north-northwest of the Site. Additional structures are depicted approximately 0.8 miles west-southwest of the Site. The creek formerly depicted to the east of the Site is no longer shown in the 1935 topographic map. Additional roads are shown in the Site vicinity. The road immediately south of the Site is labeled as Katella Avenue. A rectangular feature that appears to be an irrigation pond is depicted approximately 0.7 miles east of the Site.</p> <p>In the 1938 aerial photograph, the Site and vicinity appear to be used for agricultural purposes and appear to be generally consistent with the area shown in the 1928 aerial photograph.</p>	<ul style="list-style-type: none"> <li>- 1935 USGS Los Alamitos Topographic Map</li> <li>- 1938 EDR Aerial Photograph</li> </ul>
1940-1949	<p>The 1942 topographic map depicts additional structures throughout the Site vicinity. Two structures are depicted west adjacent of the Site boundary; however, they are not shown in the 1947 aerial photograph. A structure is depicted approximately 0.2 miles east of the Site. The 1943 topographic map is largely consistent with the 1942 topographic map; the 1945 topographic map does not include details of the Site vicinity.</p> <p>The Site property appears to be undeveloped land in the 1947 aerial photograph, and Site usage is unclear. The Site vicinity has been developed with what appears to be a circular race track approximately 1,000 feet west of the Site. An additional road was constructed sometime before 1947 approximately 1,500 feet south of the Site. Most of the Site vicinity appears to continue to be used for agricultural purposes.</p> <p>The 1949 topographic map depicts a race track approximately 1,000 feet west of the Site, which is consistent with the 1947 aerial photograph. The road shown in the 1947 aerial photograph approximately 1,500 feet south of the Site is depicted as belonging to a “Naval Reservation” shown on the 1949 topographic map. The Naval Reservation includes multiple structures and roads.</p>	<ul style="list-style-type: none"> <li>- 1942 and 1943 USGS Downey Topographic Maps</li> <li>- 1945 USGS Artesia Topographic Map</li> <li>- 1947 USGS Downey Topographic Map</li> <li>- 1947 EDR Aerial Photograph</li> <li>- 1949 USGS Los Alamitos Topographic Map</li> </ul>
1950-1959	<p>The 1950 topographic map is largely consistent with the 1949 topographic map.</p> <p>In the 1952 aerial photograph, the Site remains undeveloped. The race track remains to the west of the Site. Much of the Site vicinity appears to be used for agricultural purposes. The orientation of the road to the south of the Site associated with the Naval Reservation has changed, and multiple structures that appear to be related to agricultural or livestock use are situated approximately 600 feet southwest of the Site.</p>	<ul style="list-style-type: none"> <li>- 1950 USGS Los Alamitos Topographic Map</li> <li>- 1952 EDR Aerial Photograph</li> </ul>



Summary of Historical Sources		
Date Range	Site Description	Historical Sources
1960-1969	<p>In the 1963 aerial photograph, the majority of the Site appears to have been paved, possibly for use as a parking lot. A road appears to be situated across the Site from Katella Avenue to the racetrack. The area immediately south of the Site has been developed with structures that appear to be residential in nature. The race track has moved to the north of the Site, and now contains ponds in the center of the track. The areas adjacent to the Site to the west, north, and east remain undeveloped. A paved surface that appears to be a runway is situated approximately 1,400 feet southwest of the Site</p> <p>The 1964 topographic map depicts the Site as being undeveloped and within or immediately adjacent to a parking area. A road which connects the Los Alamitos Racetrack to Katella Avenue is depicted across the Site.</p> <p>The 1964 topographic map depicts the area immediately to the south and southwest of the Site as red-shaded developed land. The topographic map depicts the Los Alamitos Racetrack as having been relocated to the north of the Site, consistent with the 1962 aerial photograph. The naval installation is now labeled as the “Los Alamitos Naval Air Station”, and a northeast-southwest-trending runway appears to have been developed. The perimeter of the naval station has expanded relative to the perimeter depicted in the 1950 topographic map. The northern boundary of the naval station is now approximately 0.25 miles south of the Site. A feature labeled “Rossmoor Storm Channel” is depicted approximately 0.25 miles south of the Site. A channel labeled “Channel Naval” is depicted approximately 0.75 miles east of the Site. Water tanks are depicted approximately 600 feet northwest of the Site; they may be associated with a golf course depicted on the topographic map approximately 0.25 miles northwest of the Site. A creek labeled “Carbon Creek” is depicted approximately 0.7 miles north of the Site. A feature labeled “pumping station” is depicted at the tank farm north-northwest of the Site.</p>	<ul style="list-style-type: none"> <li>- 1963 EDR Aerial Photograph</li> <li>- 1964 USGS Los Alamitos Topographic Map</li> </ul>

Summary of Historical Sources		
Date Range	Site Description	Historical Sources
1970-1979	<p>In the 1970 aerial photograph, the Site appears to be consistent with the 1963 aerial photograph. The Site vicinity appears to be mostly consistent with the 1963 aerial photograph. The former runway appears to have been truncated, and a pond appears to be situated approximately 1,000 feet southwest of the Site, adjacent to the former runway.</p> <p>In the 1972 topographic map, neither the parking area in the Site vicinity nor the road transiting across the Site are depicted. The majority of the features in the Site vicinity appear to be consistent with those depicted in the 1964 topographic map with the exception of additional development shown throughout the vicinity. The pond feature shown in the aerial photograph is depicted in the topographic map.</p> <p>In the 1977 aerial photograph the Site appears to remain used as a parking lot. Two roughly square areas in the southern portion of the Site appear to be used to collect surface run-off from the Site and of the Race Course to the north, and berms appear to be placed around these features. The approximately square features are located at the southern terminus of the two concrete drainage swales located at the Site. The Site vicinity is largely consistent with the 1970 aerial photograph.</p>	<ul style="list-style-type: none"> <li>- 1970 EDR Aerial Photograph</li> <li>- 1972 USGS Los Alamitos Topographic Map</li> <li>- 1977 EDR Aerial Photograph</li> </ul>
1980-1989	<p>The 1981 topographic map is largely consistent with the 1972 topographic map. The naval facility to the southwest of the Site is now labeled "Los Alamitos Armed Forces Reserve Center". Development is indicated approximately 700 feet southwest of the Site.</p> <p>The 1981 aerial photograph is generally consistent with the 1977 aerial photograph, with the exception of development to the southwest of the Site that appears to be commercial in nature. The majority of the Site appears to be used as a parking lot. The 1989 aerial photograph is largely consistent with the 1981 aerial photograph.</p> <p>According to Mr. Douglas Hawkins and Mr. Frank Sherren, the parking lot situated on the Site has been in place for at least 30 years and has not been significantly modified or altered since then.</p>	<ul style="list-style-type: none"> <li>- 1981 USGS Los Alamitos Topographic Map</li> <li>- 1981 EDR Aerial Photograph</li> <li>- 1989 EDR Aerial Photograph</li> <li>- Telephone interviews with Mr. Douglas Hawkins and Mr. Frank Sherren, May 14, 2019</li> </ul>

Summary of Historical Sources		
Date Range	Site Description	Historical Sources
1990-1999	<p>The 1990 aerial photograph is largely consistent with the 1989 aerial photograph. A portion of the Site appears to be occupied by parked automobiles.</p> <p>In the 1994 aerial photograph, the two approximately square drainage features situated at the south of the Site appear to have been paved, and it appears that the berm currently situated at the south edge of the Site was constructed or under construction. A structure was developed on the parcel adjacent to the Site to the west in the location of the current Seventh-Day Adventist Church.</p>	<ul style="list-style-type: none"> <li>- 1990 EDR Aerial Photograph</li> <li>- 1994 EDR Aerial Photograph</li> </ul>
2000-2009	<p>A portion of the Site appears to have been repaved in the 2005 aerial photograph; the Site appears to continue to be used as a parking lot. In the northeastern portion of the Site, the surface pavement appears to have been damaged and/or removed. In the southwest portion of the Site there appear to be staged equipment or vehicles. According to Mr. Sherren, construction equipment was being temporarily staged at the Site, which damaged the surface the surface asphalt.</p> <p>An apparently commercial structure was developed by 2005 immediately adjacent to the east of the Site, and various apparently commercial buildings appear in the vicinity to the east of the Site. Multiple apparently commercial structures were also developed on the parcel adjacent to the west of the Site. The Southern Pacific Railroad is no longer visible to the north of the Site.</p> <p>The 2009 aerial photograph is largely consistent with the 2005 aerial photograph. Semi-trailer trucks appear to be parked in the northeastern portion of the Site. An additional commercial structure was developed on the parcel adjacent to the eastern border of the Site.</p>	<ul style="list-style-type: none"> <li>- 2005 EDR Aerial Photograph</li> <li>- 2009 EDR Aerial Photograph</li> <li>- Telephone interview with Mr. Frank Sherren, May 14, 2019</li> </ul>
2010-Present	<p>The Southern Pacific railroad is no longer depicted to the north of the Site in the 2012 topographic map. The armed forced facility to the south of the Site is now labeled "Los Alamitos Army Airfield". The tank farm depicted in the 1981 topographic map appears to be developed.</p> <p>The 2012 aerial photograph is largely consistent with the 2009 aerial photograph. The 2016 aerial photograph is largely consistent with the 2012 photograph, with the exception of the development of a structure approximately 250 feet northwest of the Site that appears to be commercial in nature.</p>	<ul style="list-style-type: none"> <li>- 2012 USGS Los Alamitos Topographic Map</li> <li>- 2012 EDR Aerial Photograph</li> <li>- 2016 EDR Aerial Photograph</li> </ul>

According to the aerial photographs, topographic maps, and city directory obtained for the Site and vicinity from EDR, the Site was undeveloped from at least 1896 through 1925. The Site appeared to be utilized for agricultural purposes in 1928 and the Site was vacant from at least 1938 through 1952. By 1963, the Site

appears to have been paved and used for parking purposes, and the Site has remained paved and used for parking since that time. According to Mr. Douglas Hawkins, City Planner for the City of Cypress, the Site was purchased in 2006 by the Cypress Redevelopment Agency from the owners of the Los Alamitos Race Track. In 2011, the Site was sold by the Cypress Redevelopment Agency to the City of Cypress, the current owner of the Site.

According to historical sources, the Site may have been used for agricultural purposes as early as 1928. Although there is a potential that agricultural chemicals, such as pesticides, herbicides and fertilizers, were used on-Site, based on the limited apparent duration of agricultural activities at the Site historical agricultural usage is not considered a REC.

According to historical sources, an oil tank farm was present within one mile of the Site from at least 1935 through 1981. The tank farm is not associated with any release cases identified in any records searches performed during the preparation of this report and is therefore not considered a concern to the Site.

## 4.2 Database Search

Roux Associates used a computerized environmental database and radius map report prepared by Environmental Data Resources Inc. (EDR) to conduct a government records database search of properties of potential environmental concern within a 1-mile radius of the Site. Appendix D contains a complete copy of the EDR Radius Map Report.

Roux Associates reviewed the results of the state and federal environmental database searches performed by EDR. The Site target property was not listed in any of the databases queried by EDR.

A summary of the properties within the applicable search radius is provided the table below. The remainder of the discussion of environmental databases has been restricted to adjacent facilities and nearby facilities of concern with listings potentially indicative of a release (e.g. NPL; LUST).

Nearby Properties of Potential Environmental Concern from EDR Radius Map Report		
Address	Property Listings	Database
5122 Katella Avenue	Nelson Pai DDS & Susan Ishioka DDS MS Inc.; Barker Robert H.	RCRA NONGEN/NLR; EDR HIST AUTO
5100 Katella Avenue	Kincher Gary; Union Oil Service Station 5511; Innabi Union 76 #1; Tosco #5680; Service Station 5511; unnamed facility	EDR HIST AUTO; LUST, HIST UST; HAZNET, SWEEPS UST, CA FID UST; HIST CORTESE; UST; HIST UST; RCRA-LQG
5074 Katella Avenue	Racer Cleaners; Alamitos Cleaners and Laundry; Alamitos Cleaners; Alamitos Laundry & Dry Cleaners	DRYCLEANERS; EDR HIST CLEANER; DRYCLEANERS; DRYCLEANERS
5074-78 Katella Avenue	Alamitos Cleaners	DRYCLEANERS

4961 Katella Avenue	Los Alamitos Race Track; Los Alamitos Race Course	FINDS, LUST, RCRA-SQG, HAZNET, SWEEPS UST, CA FID UST, HIST CORTESE, ORANGE CO. INDUSTRIAL SITE, ECHO, CIWQS; AST, LUST, ENF, HIST CORTESE, NPDES, CIWQS
4959 Katella Avenue	Island Cleaners	EDR HIST CLEANER
4921 Katella Avenue	Cypress Golf Club	LUST, NPDES
5401 Katella Avenue	Replanet LLC	SWRCY, CHMIRS
5001 Cerritos	Robert Kahn Property/Former HRAKO Service Center	LUST
4991 Cerritos	Orange County Fire Station #17	LUST, SWEEPS UST, CA FID UST, HIST CORTESE
5730 Katella Avenue	R&D Building Parcel 7	HAZNET; ENVIROSTOR; CIWQS
4411 Katella Avenue	Vesper Corporation; Arrowhead Products	HAZNET, EMI, ENVIROSTOR, CIWQS; ENVIROSTOR
4250 Constitution Avenue	Joint Forces Training Base, Los Alamitos – BLDG 34	LUST, ENVIROSTOR, RESPONSE
10800 Valley View Street	The Boeing Company	HAZNET, EMI, ENVIROSTOR, ORANGE CO. INDUSTRIAL SITE
None provided	Los Alamitos Rad Bomb/Score Site	ENVIROSTOR
None provided	NAS Los Alamitos	ENVIROSTOR
None provided	Los Alamitos Armed Forces Reserve Center	DOD

The EDR Search Report identified several listings for off-Site adjacent or nearby properties on databases potentially indicative of a contamination concern. Roux Associates notes that surface topography in the Site vicinity generally slopes to the south-southwest according to historical topographic maps and the EDR Radius Map Report (Appendix D).

The listings of potential concern are herein discussed by facility or address.

- Nelson Pai DDS & Susan Ishioka DDS MS Inc., located at 5122 Katella Avenue approximately 160 feet southwest of the Site, is listed in the RCRA NONGEN/NLR database. No violations or spills are noted, and inclusion in this database is consistent with general regulatory compliance; therefore, this listing is not considered to represent an environmental concern to the Site.
- Barker Robert H., located at 5122 Katella Avenue approximately 160 feet southwest of the Site, is listed in the EDR HIST AUTO database from 1969 to 1983. No evidence of spills or violations is reported for this facility; therefore, this listing is not considered to represent an environmental concern to the Site.

- 5100 Katella Avenue, which is situated approximately 225 feet southwest of the Site, is associated with multiple gasoline station and automotive listings including Kincher Gary, Union Oil Service Station 5511, Innabi Union 76 #1, Tosco #5680, Service Station 5511, and one unnamed facility whose mailing address is associated with Circle K. The facilities at 5100 Katella Avenue are listed in the EDR HIST AUTO, LUST, HIST UST, HAZNET, SWEEPS UST, CA FID UST, HIST CORTESE, UST, and RCRA-LQG databases. Of these listings, only the LUST listing associated with the Tosco #5680 facility is indicative of a release.

According to the GeoTracker listing for the Tosco #5680 facility, a gasoline leak from a UST was discovered on May 19, 1987. Remediation of the gasoline leak involved excavation, operation of a groundwater pump and treat system, soil vapor extraction, and ozone injection. The facility received a No Further Action letter on September 23, 2015. Based on the downgradient location of the Tosco #5680 facility and the issuance of regulatory closure for the gasoline leak, this listing is not considered to represent an environmental concern to the Site.

- 5074 Katella Avenue, located approximately 410 feet west-southwest and hydraulically downgradient of the Site, is associated with multiple dry cleaner facilities including Racer Cleaners, Alamitos Cleaners and Laundry, Alamitos Cleaners, and Alamitos Laundry & Dry Cleaners. These facilities are listed in the DRYCLEANERS and EDR HIST CLEANER listings. The listings for Racer Cleaners, Alamitos Cleaners, and Alamitos Laundry & Dry Cleaners are associated with perchloroethylene; however, there are no listings indicative of environmental releases and therefore these listings are not considered to represent an environmental concern to the Site.
- Los Alamitos Race Track and Los Alamitos Race Course are listed at 4961 Katella Avenue in the FINDS, LUST, RCRA-SQG, HAZNET, SWEEPS UST, CA FID UST, HIST CORTESE, ORANGE CO. INDUSTRIAL SITE, ECHO, CIWQS, AST, ENF, NPDES, and CIWQS databases. According to the EDR Radius Map Report the facility is listed as being located approximately 550 feet west-southwest of the Site; however, it is situated adjacent to the Site to the north. With the exception of the listings described below, the inclusion of this facility in these databases is indicative of general regulatory compliance.

The LUST cases identified for this facility are for leaks that are reported to have been discovered on August 9, 1988 and June 23, 1997. The leak discovered August 9, 1988 received regulatory closure on June 26, 1996 according to the LUST database listing. The Orange County Environmental Health Division Remedial Action Case Closure Summary associated with this leak indicates that four diesel USTs containing gasoline and diesel were removed from the property. Soil sampling following UST removal indicated that the tank pit area was heavily contaminated, and free product was observed floating on groundwater in the tank pit. Vapor extraction, groundwater extraction and implementation, and bioremediation were implemented. Carbon tetrachloride and 1,2-DCA are reported to have been detected in several monitoring wells at the facility; the origins of these contaminants was allegedly unknown. Prior to closure, only one monitoring well was reported to show impacts related to the former USTs in the form of elevated benzene. However, the LUST case subsequently received closure.

The leak discovered June 23, 1997 received closure on July 29, 1997 according to the LUST database listing. Files available on GeoTracker corresponding to this leak indicate that soil testing following the removal of three USTs indicated low levels of gasoline, diesel, and MTBE

contamination. Approximately 5 tons of contaminated soil was moved to an open area at the race track, and fertilizer and water were added to the spoils. The spoils were spread across the track area and were left in place for the contamination to naturally attenuate. Based on the closure status of both LUST cases, these listings are not considered to represent an environmental concern to the Site.

The FINDS listing associated with the Los Alamitos Race Course facility indicates that the facility was in violation of the Clean Water Act in 2018 and 2019 for best management practice deficiencies, discharge without a permit, failure to monitor, and for not submitting an annual report. Based on the lack of documented environmental release, this listing is not considered to represent an environmental concern to the Site.

- Island Cleaners, located at 4659 Katella Avenue, is listed in the EDR HIST CLEANER database and was also observed to be present at that location during the Site reconnaissance. Island Cleaners is approximately 550 feet west-southwest of the Site. There are no releases or violations associated with this facility, and this listing is not considered to represent an environmental concern to the Site.
- Cypress Golf Club, located at 4921 Katella Avenue, is listed in the LUST and NPDES databases. The Cypress Golf Club was situated approximately 550 feet west-northwest of the Site. According to the GeoTracker listing associated with this facility, a UST formerly used to store gasoline and diesel was removed in March 2004. A grab water sample from the saturated zone showed elevated levels of MTBE, and three groundwater monitoring wells were subsequently installed. Groundwater samples showed low levels of MTBE and other contaminants below risk levels, and the case received closure from the Orange County Environmental Health Division on January 16, 2007. Based on the low concentrations of MTBE and other contaminants associated with the LUST case and the regulatory closure issued, this listing is not considered to represent an environmental concern to the Site.
- Replanet LLC at 5401 Katella Avenue, approximately 585 feet east-southeast of the Site, is listed in the CHMIRS database for a Freon gas leak indicated by an alarm panel on June 9, 2006. The CHMIRS listing reports that 0.000000 gallons of Freon gas were spilled, and this listing is not considered to represent an environmental concern to the Site.
- The Los Alamitos Armed Forces Reserve Center is listed in the DOD database, and is listed as being approximately 1,220 feet south of the Site. The Los Alamitos Armed Forces Reserve Center listing is not associated with an address, and the DOD database listing does not have any information regarding environmental releases. Therefore, this listing is not considered to represent an environmental concern to the Site.
- The Robert Kahn Property/Former HRAKO Service Center located at 5001 Cerritos Avenue is approximately 0.4 miles north-northwest of the Site and is associated with a LUST case. According to information available on GeoTracker pertaining to the Robert Kahn Property/Former HRAKO Service Center facility, a gasoline leak discovered on August 27, 1991 impacted groundwater. Cleanup involved excavation which was completed on January 26, 1998. The facility received closure on June 11, 2002. Based on the distance from this facility to the Site and the regulatory closure achieved, this listing is not considered to represent an environmental concern to the Site.



- Orange County Fire Station #17 located approximately 0.4 miles north-northwest of the Site is listed in the LUST, SWEEPS UST, CA FID UST, and HIST CORTESE databases. Only the LUST listing is indicative of an environmental release. According to documents available on GeoTracker pertaining to this facility, a UST leak was discovered on July 30, 1997. One 1,000-gallon diesel UST and one 550-gallon gasoline UST were removed from the facility on April 1, 1998. Soils in the immediate vicinity of the tanks and former dispenser area were noted to be contaminated by TPH, toluene, ethylbenzene, and xylenes but the lateral extent of the contamination was noted to be limited. Groundwater samples showed limited MTBE impacts; all other contaminants were below detection limits or respective MCLs. A dual-phase extraction pilot test was conducted, but was deemed not feasible based on limited hydrocarbon recovery. The MTBE concentration in groundwater showed a decreasing trend following tank excavation. Based on these factors, no further action was recommended and the facility received regulatory closure on December 20, 2004. Given the distance from the Site to this facility and the regulatory closure obtained for the LUST case, the Orange County Fire Station #17 listing is not considered to represent an environmental concern to the Site.
- R&D Bldg Parcel 7 is listed in the HAZNET, ENVIROSTOR, and CIWQS databases; of these listings, only the ENVIROSTOR database is indicative of potential environmental releases at the facility. R&D Bldg Parcel 7 is located at 5730 Katella Avenue, approximately 0.4 miles east-southeast of the Site. According to the EnviroStor listing for this address associated with Rolls-Royce High Temperature Composite, Inc., the facility has an active tiered permit. A tiered permit checklist submitted July 18, 2018 by the facility indicates that a Phase I ESA conducted in April 2015 did not identify any RECs in conjunction with the facility. No releases are indicated on the EnviroStor listing for the facility. Based on the absence of known releases, this listing is not considered to represent an environmental concern to the Site.
- Vesper Corporation and Arrowhead Products are listed at 4411 Katella Avenue, approximately 0.7 miles west of the Site, and are listed in the HAZNET, EMI, ENVIROSTOR, and CIWQS databases. This facility is approximately 3,600 feet west of the Site. According to the EnviroStor listing associated with Arrowhead Products, the company moved to its Los Alamitos location in 1962 and was sold to Vesper Corporation in 1983. The facility continues to operate as Arrowhead Products and manufactures metallic and non-metallic bellows and ducting systems, reinforced plastic structures, composite laminates, and thermal protective products for the aerospace and defense industries. According to the EnviroStor listing for the facility, contaminants found at the facility include arsenic in soil and VOCs in soil, soil gas, and indoor air. VOCs identified at the facility include TCE and PCE. According to the Preliminary Endangerment Assessment (PEA) Report prepared for the facility, groundwater is encountered between 8 and 12 feet below ground surface. Based on the relatively shallow groundwater depth, the PEA Report recommended that groundwater samples be collected to evaluate for the presence of VOCs. Although the presence of VOC contamination in groundwater at the Arrowhead Products facility has not been evaluated, based on the distance to the Site this listing is not considered to represent an environmental concern to the Site.
- The Joint Forces Training Base, Los Alamitos – BLDG 34 facility located at 4250 Constitution Avenue is listed in the LUST, ENVIROSTOR, and RESPONSE databases. The facility associated with this listing is situated on the Los Alamitos Joint Forces Training Base approximately 3,630 feet west-southwest of the Site.



According to the GeoTracker listing for this facility, the cleanup status is Open – Remediation as of June 15, 2007. Six USTs were historically associated with BLDG 34, and were removed from March to May 1994 along with 225 cubic yards of petroleum-impacted soil. A soil vapor and groundwater treatment system was operated from September 2006 through March 2007, and oxygen release compound was applied in May 2007 in 44 locations. Following these remedial activities, long-term groundwater monitoring was implemented. As of 2016, additional assessment is needed to determine the vertical and lateral extent of petroleum impacts.

The RESPONSE listing for the BLDG 34 facility lists the status as No Further Action as of February 3, 2010. The potential contaminants are listed as munitions debris. According to the EnviroStor listing for the Joint Forces Training Base that BLDG 34 is a part of, potential contaminants of concern include explosives, metals, and munitions debris. The cleanup status is listed as No Further Action as of February 3, 2010.

Based on the distance to the Site and the remediation that has occurred associated with the LUST case, these listings are not considered to represent an environmental concern to the Site.

- The Boeing Company located at 10800 Valley View Street is listed in the HAZNET, EMI, ENVIROSTOR, and ORANGE CO. INDUSTRIAL SITE databases. The Boeing Company facility is situated approximately 4,020 feet east of the Site. Of the database listing for the Boeing Company facility, only the ENVIROSTOR and ORANGE CO. INDUSTRIAL SITE listings are indicative of environmental releases.

The ENVIROSTOR listing for the facility lists the status as Refer: 1248 Local Agency as of September 2, 2004. There are no potential contaminants or affected media noted in the EnviroStor listing for the facility. According to the ORANGE CO. INDUSTRIAL SITE listing for the facility, closure certification was issued on January 27, 2005 for a release of oil and water. Based on the regulatory closure issued for the oil and water release and the distance from the Site, these listings are not considered to represent an environmental concern to the Site.

- Los Alamitos Rad Bomb/Score and NAS Los Alamitos are not associated with an address. Both facilities are listed as being situated 5,050 feet southwest of the Site, and both facilities are associated with an ENVIROSTOR listing. According to the EnviroStor page for NAS Los Alamitos, there are no specified contaminants of concern and the status is Inactive – Needs Evaluation as of July 1, 2005. According to the EnviroStor page for Los Alamitos Rad Bomb/Score Site, potential contaminants of concern include explosives. The status for this facility is Inactive – Needs Evaluation as of August 14, 2018. Based on the distance from the Site to these facilities and the lack of documented environmental releases, these listings are not considered to represent an environmental concern to the Site.

One listing was identified as an orphan site and is described in the table below.

Orphan Site Listings from EDR Radius Map Report		
Address	Property Listing	Database
Northeast Corner Los Alamitos and Katella	Benjamin B & Maria L Barajas DBA	DRYCLEANERS

The orphan listing is discussed below.

- Benjamin B & Maria L Barajas DBA is located on the northeast corner of Los Alamitos Boulevard and Katella Avenue in Los Alamitos, approximately two miles west of the Site. The facility is listed as a dry cleaning facility. This listing is not expected to represent a significant environmental concern to the Site based on the distance from the Site.

### 4.3 Information from Government Agencies

Roux Associates contacted selected federal, state, and local regulatory agencies to determine whether they have potentially relevant environmental records pertaining to the Site, including records relating to USTs, aboveground storage tanks (ASTs), environmental permits, enforcement orders, reports and correspondence related to Site assessment, soil sampling, monitoring, clean-up and/or remediation, removal actions, closures, or any records related to conditions in air, soil, surface water, groundwater, or other environmental media. The agencies contacted and Roux Associates' interactions with them are documented below. Roux Associates contacted or reviewed information from the following agencies:

- Federal;
  - United States Environmental Protection Agency (EPA),
  - National Pipeline Mapping System (NPMS),
- State;
  - State Water Resources Control Board (SWRCB): GeoTracker,
  - SWRCB: Storm Water Multiple Application and Report Tracking System (SMARTS),
  - Department of Toxic Substances Control (DTSC),
  - DTSC: EnviroStor,
  - DTSC: Hazardous Waste Tracking System (HWTS),
  - California Air Resources Board (CARB),
  - California Office of Environmental Health Hazard Assessment (OEHHA),
  - CalEPA: CalRecycle,
  - CalRecycle: Solid Waste Information System (SWIS),
  - State of California Department of Conservation: Division of Oil, Gas and Geothermal Resources (DOGGR),
- County/Regional;
  - Santa Ana Regional Water Quality Control Board (SA-RWQCB),
  - South Coast Air Quality Management District (SC-AQMD),
  - Orange County Sanitation Department (OCSD),
  - Orange County Public Works (OCPW),
  - Orange County Environmental Health,
  - Orange County Waste and Recycling, and
- City/Local;
  - City of Cypress – City Clerk.

It is noted that the Site does not have a physical street address and therefore the requests were made using the general location of the Site (northwest corner of Katella and Winners Circle), as well as APNs (241-091-22, 23, 24, 25, and 26). Some agencies require physical street addresses and therefore were unable to respond, as explained below. The following sections summarize Roux Associates' review of those records. Copies of the records are provided in Appendix I – Regulatory Records Documentation.

#### **4.3.1 Federal Agencies**

##### ***US EPA***

Roux Associates submitted an online Public Records Request on FOIA online on May 8, 2019. A response dated May 89 [sic] 2019 stated that any available records are available on the EPA MyProperty database, and the request was subsequently closed.

##### ***NPMS***

Roux Associates queried the online NPMS Public View database on May 8, 2019. There are no gas transmission or hazardous liquid pipelines within the Site. The nearest pipe is a hazardous liquid pipeline, approximately 0.5 miles north of the Site.

#### **4.3.2 State Agencies**

##### ***SWRCB: GeoTracker***

Roux Associates queried the online SWRCB GeoTracker database on May 8, 2019. No listings associated with the Site were identified on GeoTracker. One facility, listed below, was identified in the immediate vicinity of the Site and is discussed in greater detail in Section 4.2.

- Tosco – 76 # 5511 at 5100 Katella is a closed LUST case.

##### ***SWQCB SMARTS***

Roux Associates queried the online stormwater public database on May 8, 2019. No listings associated with the Site were identified.

##### ***DTSC***

Roux Associates submitted a Public Records Request form to DTSC via email on May 8, 2019. On May 13, 2019, a response was received via email stating that there were no records associated with the Site.

##### ***DTSC: EnviroStor***

Roux Associates queried the online EnviroStor database on May 8, 2019. No listings associated with the Site or in the immediate Site vicinity were identified.

##### ***DTSC: HWTS***

Roux Associates queried the online tracking database on May 8, 2019. No listings associated with the Site were identified.

##### ***CARB***

Roux Associates submitted a Public Records Request to CARB via email on May 8, 2019. On May 22, 2019 an email response was received stating that no records associated with the Site were identified.

### ***California OEHHA***

Roux Associates submitted a Public Records Request to OEHHA via email on May 8, 2019. At the time of this report, no response has been received.

### ***CalEPA: CalRecycle***

Roux Associates submitted a Public Records Request to CalRecycle via email on May 8, 2019. On May 20, 2019 an email response was received stating that no records associated with the Site were identified.

### ***CalRecycle: SWIS***

Roux Associates queried the online SWIS Facility and Site database on May 8, 2019. No listings associated with the Site were identified.

### ***State of California Department of Conservation: DOGGR***

Roux Associates queried the online DOGGR database on May 8, 2019. No listings associated with the Site or within the vicinity of the Site were identified.

## **4.3.3 County/Regional Agencies**

### ***SA-RWQCB***

Roux Associates submitted a Public Records Request to SA-RWQCB via email on May 8, 2019. At the time of this report, no response has been received.

### ***SC-AQMD***

Roux Associates submitted a Public Records Request to SC-AQMD via email on May 8, 2019. A response dated May 9, 2019 stated that the request could not be fulfilled because SC-AQMD can only search by address.

Roux Associates also queried the online SC-AQMD database on May 8, 2019. No listings associated with the Site were identified.

### ***OCSD***

Roux Associates submitted a Public Records Request to OCSD on May 8, 2019. On May 8, 2019, a response was received via email, stating that no records associated with the Site were identified.

### ***OCPW***

Roux Associates submitted a Public Records Request to the Orange County web portal on May 8, 2019. On May 15, 2019, a response was received via email stating that one record was available. The record provided describes the discharge of wastewater to the municipal storm water system at 5275 Orange Avenue, Cypress, California on September 13, 2003. This address is approximately 1.4 miles north of the Site; therefore, this incident is not considered an environmental concern to the Site.

### ***Orange County Environmental Health***

Roux Associates submitted a Public Records Request to the Orange County web portal on May 8, 2019. A response received via email on May 8, 2019 stated that the request could not be fulfilled because Orange County Environmental Health can only search by address.

### ***Orange County Waste and Recycling***

Roux Associates submitted a Public Records Request to the Orange County web portal on May 8, 2019. A response was received via email on May 10, 2019 stating that no records associated with the Site were identified.

### **4.3.4 City/Local Agencies**

#### ***City of Cypress – City Clerk***

Roux Associates submitted a Public Records Request via email on May 8, 2019. According to a response dated May 14, 2019, the City of Cypress did not identify records associated with the Site. Roux Associates spoke with Mr. Douglas Hawkins, City Planner for the City of Cypress, by telephone on May 14, 2019 regarding the Site. Information regarding the Site obtained from the interview is described in Section 4.1.

## 5. Site Reconnaissance

Roux Associates representatives Messrs. Mauricio Escobar and Mark Edwards conducted a visit of the Site and surrounding areas on May 13, 2019. During the Site reconnaissance, it was generally partially cloudy and dry. Roux Associates was unaccompanied during the Site reconnaissance. Site access was unobstructed, and the reconnaissance was conducted on foot. Following the Site reconnaissance, Roux Associates spoke with Mr. Douglas Hawkins, City Planner for the City of Cypress, and Mr. Frank Sherren, Facilities Manager at Los Alamitos Race Course, by phone. Information obtained from these interviews is detailed in Section 4.1 of this report.

Roux Associates observed an active geotechnical investigation at the southwestern portion of the Site and evidence of historical boring location (presumably former geotechnical investigations) at various locations throughout the Site.

### 5.1 Methodology and Limiting Conditions

Roux Associates' Site reconnaissance methods included a site visit to physically observe the Site to identify RECs in connection with the Site. Mr. Escobar and Mr. Edwards traversed the Site on foot to observe conditions. Photographs taken to document conditions encountered at the time of the site reconnaissance are included in Appendix J – Photographic Log. Roux Associates also visually and/or physically observed adjoining properties from reasonably accessible locations on the Site and public thoroughfares.

The Site was observed to be flat, undeveloped land used for parking and temporary storage of truck trailers. On-Site improvements consisted of asphalt pavement, which is in disrepair throughout much of the Site, light poles, and surface swales leading to two individual drains that connect to the storm sewer along Katella Avenue. Landscaping including trees and grass were observed along the southwestern border of the Site. Standing water and muddy conditions were observed at the southwestern corner of the Site, which appeared to be from overwatering of the landscaping. A surface berm, which was a landscaping feature, was observed running along the entire length of the southern Site boundary adjacent to Katella Avenue.

On-Site topography slopes gently to the south but there appear to be artificial low spots on the southern portion of the Site, likely associated with the surface drains. It was noted that on-Site surface elevation at the southeastern corner of the Site was several feet higher than the surrounding elevation at Winners Circle. It was also noted that the pavement is missing at the northeastern portion of the Site with numerous ruts, which were likely created by large trucks that were observed running through the Site. Gravelly material suggesting road base was observed in this area of the Site. Mr. Sherren indicated that this area of the Site was formerly used to stage construction equipment, which also damaged the former asphalt.

The Site is bounded by a fence to the south, by a paved race track entrance to the west, by a parking area for the Los Alamitos Race Course to the north, and by Winners Circle and Costco to the east. According to Mr. Hawkins and confirmed by Mr. Sherren, long-haul trucks are allowed to temporarily park empty trailers at the Site.

### 5.2 Interior and Exterior Observations

The following sections summarize Roux Associates' Site reconnaissance observations.

### **5.2.1 Drainage Swales or Culverts**

Roux Associates observed two shallow concrete drainage swales within the Site parking lot. The swales originate from the north of the Site and generally trend north-south. No hazardous substances, staining, or other indications of a release were observed in the vicinity of the swales.

### **5.2.2 Drains, Sumps, Wells, or Subsurface Piping**

Roux Associates observed two stormwater drains in the southern portion of the Site. The drainage swales located on the parking lot lead to the drains, which empty to the storm sewer that runs along Katella Avenue. No hazardous substances, staining, or other indications of a release were observed in the vicinity of the drainage features. A capped pipe labeled 'LASCO PVC 8"' was observed in the southern portion of the Site.

### **5.2.3 Equipment Suspected to Contain Polychlorinated Biphenyls**

Roux Associates observed one aboveground pad-mounted transformer in the southwest corner of the Site and two aboveground pad-mounted transformers in the southeast corner of the Site. The transformers appeared to be owned and operated by Southern California Edison. It is unknown whether the observed transformers contained oils and potentially PCBs, although this is unlikely given the labeled manufacturing dates of the transformers which ranged from 2010 to 2017. No staining or leaks were observed in the vicinity of the transformers and the pads appeared to be in good condition. Maintenance of the transformers would be the responsibility of Southern California Edison. Roux considers the potential environmental impact associated with the transformers to be low.

### **5.2.4 Pools of Liquid**

Pools of liquid (irrigation water) were observed in the southwestern corner of the Site. No visual or olfactory evidence was observed to indicate that the pools of liquid contained anything other than water from adjacent irrigation.

### **5.2.5 Solid Waste**

Roux Associates observed minor evidence of general refuse and waste throughout the Site. Small amounts of trash from consumer products were observed in various locations throughout the Site.

### **5.2.6 Stained Pavement**

Roux Associates observed minor staining in various portions of the parking lot at the Site. The staining appeared to originate from motor vehicle leaks. Based on the small apparent quantities of leaked automotive fluids, the staining is considered *de minimis* in nature.

### **5.2.7 Other Features**

The following features were not observed by Roux Associates during the May 13, 2019 Site inspection:

- Areas of stressed vegetation
- Areas which receive flood or storm water from potentially contaminated areas
- Air compressor vent discharges
- Discharge areas
- Drums

- Empty hazardous substance or petroleum product containers
- Hazardous substances and petroleum products
- Incinerators
- Landfills or landfarms
- Loading and unloading areas
- Non-contact cooling water discharge
- Open areas away from production areas
- Stockpiled soil
- Unidentified substances containers assumed to contain or once contain automobile-related chemicals
- Unusual odors
- USTs or other storage tanks
- Wastewater, wells, septic systems
- Wetland areas, pits, ponds, or lagoons
- The site is currently vacant with no structures; therefore, ACM and LBP are not a concern.

### **5.2.8 Vapor Intrusion**

Roux considered likely sources of on-site vapor intrusion and off-Site vapor migration during the preparation of this Phase I ESA. None of the features identified at the Site are considered to be a likely source of soil vapor impacts. None of the adjoining or nearby properties were identified as likely source for vapor encroachment onto the Site.



## 6. Findings

### 6.1 Data Gaps

During conduct of this ESA, the following data gaps were identified:

- The following agency FOIA requests are pending as of this report date:
  - a. California Office of Environmental Health Hazard Assessment (OEHHA)
  - b. Santa Ana Regional Water Quality Control Board (SA-RWQCB)

Based on the quality of information obtained from other sources including aerial photographs, topographic maps, and interviews, these data gaps are not considered significant and are not expected to alter Roux Associates' findings.

Roux Associates has performed this Phase I ESA in general compliance with the scope and limitations of ASTM E1527-13. Roux Associates separated the findings of this assessment into the following four categories: RECs, CRECs, HRECs, and *de minimis* conditions.

### 6.2 Recognized Environmental Conditions

Roux Associates identified the following REC in connection with the current and historical operations at the Site or nearby properties:

- **REC-1: Disturbed/Imported Soils.** Areas of historically disturbed and/or imported soils were identified along the southern and eastern boundaries of the Site. Aerial photographs from 1977 to 1990 suggest that two roughly square areas surrounded by earthen berms were being used to collect surface run-off from the Site and a portion of the Race Course to the north. Also, during the Site reconnaissance an approximately 5-foot high berm was observed along the length of the southern boundary, immediately adjacent to Katella Avenue; it is apparent from aerial photographs this was a feature that was emplaced in the mid-1990s. Additionally, near the southeastern corner of the Site, on-Site topography is several feet higher than the surroundings. Finally, aerial photographs show a construction staging area at the northeastern portion of the Site in the mid-2000s, which was confirmed by Mr. Frank Sherren who works for the Race Course and is knowledgeable of historical Site activities. During the Site reconnaissance it was noted that this northeastern area of the Site is missing surface pavement and coarse gravels resembling road base appeared to have been brought to the Site. Evidence of disturbed and possibly imported materials is considered a REC for the Site.

Based on the identification of this REC, Roux Associates performed a limited subsurface investigation at the Site. The methods, results, and conclusions of this investigation are presented in Section 7 of this report.

### 6.3 Controlled Recognized Environmental Conditions

Roux Associates did not identify evidence of CRECs in connection with the current and historical operations at the Site or nearby properties.

### 6.4 Historical Recognized Environmental Conditions

Roux Associates did not identify evidence of HRECs in connection with the current and historical operations at the Site or nearby properties.

## 7. Phase II Limited Soil Investigation

On June 7, 2019, Roux Associates performed a Phase II Limited Soil Investigation at the Site to address disturbed and possibly imported materials along the southern and eastern portions of the Site (REC-1). This section details the activities performed during the limited soil investigation, describes the analytical results obtained for shallow soil samples from the Site, and presents conclusions based on the data obtained.

### 7.1 Methods of Investigation

#### 7.1.1 Pre-Field Activities

Roux Associates prepared a Site-specific Health and Safety Plan (HASP) to identify potential significant risks and hazards that could have been encountered during implementation of the scope of work. Prior to the start of fieldwork, field workers acknowledged their familiarity with all safety procedures and indicated their intent to follow the HASP by signing the HASP following a tailgate safety meeting.

Roux Associates notified Underground Service Alert (USA) of intended subsurface work at the Site at least 48 hours prior to fieldwork by updating DigAlert ticket number A191280457.

#### 7.1.2 Soil Sampling Methodology and Sample Collection

Soil sampling locations were selected along the southern and eastern portions of the Site to address fill materials suspected at the Site (Figure 3). Specifically,

- Two borings (SS-1 and SS-2) were placed at the northeastern corner of the Site in an area characterized by damaged or missing pavement;
- Two borings (SS-3 and SS-4) were placed at the southeastern corner of the Site in an area with higher elevation than the adjacent Winners Circle,
- Three borings (SS-5 through SS-7) were placed within the soil berm that runs along the southern edge of the Site; and,
- One boring (SS-8) was placed near the central portion of the Site.

On June 7, 2019, Roux Associates personnel collected soil samples from all eight borings using hand tools. Discreet samples were collected from all borings at depths of 0.5 and 1.5 feet bgs. At boring locations covered with paving, asphalt was removed prior to collecting samples with a mechanical hand auger; asphalt thicknesses ranged from approximately 2 to 4 inches. Once the asphalt was removed, the hand auger was advanced and soil samples were collected directly into laboratory-supplied glass jars. The samples were then labeled and placed on ice. At boring locations situated in landscaped areas, grass was removed from the boring location prior to advancing the hand auger. Following sample collection, all borings were backfilled using native soil material, and in paved areas the boring was patched using asphalt cold patch to match the existing grade.

Soils encountered generally consisted of silts and sands. Visual cues did not suggest evidence of contamination for any of the shallow or deeper samples collected. Between all boring locations, the hand auger bucket was decontaminated using Alconox detergent and deionized water and paper towels. A “dry-wipe” decontamination method was employed during the entire Phase II Limited Soil Investigation, and no investigation-derived waste was generated.

### 7.1.3 Laboratory Analyses

A total of 16 soil samples were collected during this investigation, including eight “shallow” samples from 0.5-foot bgs, and eight “deeper” samples from 2-foot bgs. All 16 samples were transported under chain-of-custody protocol to Enthalpy Analytical, Inc. (Enthalpy) of Orange, California, a California state-certified fixed laboratory, and submitted for potential laboratory analysis on the day of collection. All shallow soil samples were analyzed for Title 22 Metals using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A. Additionally, one randomly selected shallow sample (SS-2-0.5) also was analyzed for Total Petroleum Hydrocarbons (TPH) using USEPA method 8015M and Volatile Organic Compounds (VOCs) using USEPA Method 8260B. All deeper samples were held by the laboratory pending laboratory results of the shallow soil samples. The analytical results are attached as Appendix K and are presented in Table 1.

## 7.2 Results

Reported soil metals, TPH, and VOC concentrations were compared to applicable and available published screening levels, including USEPA Regional Screening Levels (RSLs) for residential soil, the Department of Toxic Substances Control (DTSC) Human Health Risk Assessment (HHRA) Human and Ecological Risk Office (HERO) Note Number 3 - Soil Screening Levels (SLs) for Residential Soil, and/or San Francisco Regional Water Quality Control Board (SF-RWQCB) Environmental Screening Levels (ESLs). Metals concentrations were also compared with background concentrations identified in California soils.

A summary of the soil laboratory results are presented in Table 1 and presented below:

- **Metals:** California Title 22 Metals were analyzed for the eight shallow samples (SS-1-0.5 through SS-8-0.5) collected at the Site. Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, vanadium, and zinc were reported in one or more samples above laboratory method reporting limits (MRLs). With the exception of arsenic, concentrations of all Title 22 Metals were below applicable screening levels.
  - **Arsenic:** Concentrations of arsenic in shallow soils analyzed from the Site ranged from 2.99 milligrams per kilogram (mg/kg) to a maximum of 11.7 mg/kg. These concentrations exceed the USEPA RSL of 0.68 mg/kg, the DTSC HERO Note 3 residential soil SL of 0.11 mg/kg, and the SF-RWQCB ESL of 0.26 mg/kg. However, the measured concentrations of arsenic in Site soils are below the upper-bound background concentration of arsenic in California (DTSC). Therefore, arsenic concentrations are not considered a concern for Site soils.

Based on the reported concentrations of metals at the Site which, with the exception of arsenic as discussed above, fall below applicable screening levels, metals are not considered a concern for Site soils.

- **TPH:** One randomly selected soil sample, SS-2-0.5, was analyzed for TPH by USEPA Method 8015M. TPH fractions C6-C12 and C13-C22 concentrations were below their respective laboratory MRLs. TPH fraction C23-C44 was reported at a concentration of 73 mg/kg, which is below the applicable SF-RWQCB screening level for motor oil of 12,000 mg/kg. Based on this result, TPH is not considered a concern for Site soils.
- **VOCs:** One randomly selected soil sample, SS-2-0.5, was analyzed for VOCs by USEPA Method 8260B. No VOC constituents were reported above their respective laboratory MRLs in this sample. Based on this result, VOCs are not considered a concern for Site soils.

Soil samples were generally free from staining or odor and no visual indications of subsurface impacts were identified during this investigation.

### **7.3 Conclusions and Recommendations**

Shallow soil samples were collected from eight locations across the Site and were analyzed for California Title 22 metals, TPH (one sample only), and VOCs (one sample only). Laboratory reports showed that Title 22 metals concentrations for all samples analyzed were within acceptable background ranges. Additional analyses showed TPH concentrations below actionable levels and VOC concentrations below laboratory method reported limits (MRLs) for all constituents in the one sample analyzed. Based on the results of the Phase II Limited Soil Investigation, REC-1 has been addressed and Roux Associates does not recommend any additional investigation at the Site.

## 8. Deviations

Roux Associates performed this assessment in accordance with the generally accepted practices for environmental assessments at the time of implementation, except for the limitations described in Section 1.5. Roux Associates made a reasonable effort to ensure that the information presented in this report is materially complete and accurate.

## 9. References

American Society for Testing Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13)

Arcadis, *Confirmation Soil Borings Report, 76 Service Station 5511, 5100 Katella Avenue Los Alamitos, California*

California Department of Water Resources, *Bulletin 118 – Update 2003*, October 1, 2003

DCI Environmental Services, *Phase I Environmental Site Assessment for Commercial Property APN's #241-091-22, 23, 24, 25 & 26, Cypress, CA. 90630*, August 10, 2006

DTSC, *Determination of a Southern California Regional Background Arsenic Concentration in Soil*. Undated.

EDR, *The EDR Radius Map™ Report with GeoCheck®*, May 8, 2019

EDR, *The EDR Aerial Photo Decade Package*, May 9, 2019

EDR, *EDR Certified Sanborn® Map Report*, May 8, 2019

EDR, *EDR Historical Topographic Map Report*, May 8, 2019

EDR, *The EDR-City Directory Image Report*, May 13, 2019

Kearney Foundation of Soil Science Division of Agriculture and Natural Resources, University of California, *Background Concentrations of Trace and Major Elements in California Soils*, March 1996.

## 10. Signature of Environmental Professional

Roux Associates completed a Phase I ESA and Phase II Limited Soil Investigation for the approximately 13.29-acre property located at the northwest corner of Katella Avenue and Winners Circle in the City of Cypress, California. The Phase I ESA was performed in general compliance with the scope and limitations of ASTM E1527-13 of the Site, "We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312" and,

"We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

Roux Associates performed this Phase I ESA and Phase II Limited Soil Investigation by, or under direct supervision of, the undersigned environmental professionals. Resumes are included in Appendix L - Personnel Qualifications.

Respectfully Submitted,



Mark A. Edwards, GIT  
Staff Geologist



Mauricio H. Escobar, PG  
Principal Geologist



**FIGURES**

1. Site Location Map
2. Site Plan
3. Soil Boring Locations





LOCATION  
OF DETAIL

0.25 0 0.25 0.5  
Miles

Title:

## SITE LOCATION MAP

NORTHWEST CORNER, KATELLA AVENUE AND WINNERS CIRCLE  
CYPRESS CALIFORNIA

Prepared For:

SHEA PROPERTIES

**ROUX**

Compiled by: ME	Date: 5/15/2019	FIGURE <b>1</b>
Prepared by: ME	Scale: 1:31,680	
Project Mgr: MHE	Office: LA	
File No: F(AP)	Project: 2217.0014L000	

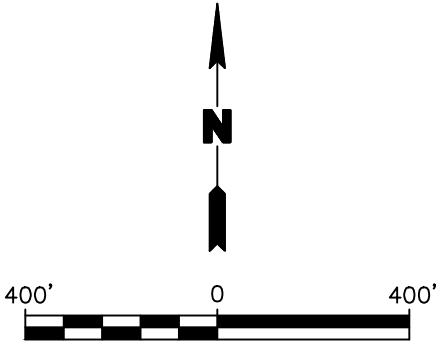


S:\LOS ANGELES\CLIENTS\SHEA PROPERTIES\CYPRESS\PHASE 1\05 - WORKABLES\02 - FIGURES\CAD\2217.0014\000\_SITE VICINITY.DWG



LEGEND

--- PROPERTY BOUNDARY



Title:			
SITE MAP			
NW CORNER KATELLA AVENUE AND WINNERS CIRCLE CYPRESS, CA 90720			
Prepared for:			
SHEA PROPERTIES			
ROUX	Compiled by: A.T.	Date: 10MAY2019	FIGURE <b>2</b>
	Prepared by: A.T.	Scale: AS SHOWN	
	Project Mgr: M.E.	Project: 2217.0014L000	
	File: 2217.0014L000_SITE VICINITY.DWG		



\\SRV\ACAPP\1\A\_SHARED\CLIENTS\SHEA PROPERTIES\CYPRESS\PHASE 1\05 - WORKABLES\02 - FIGURES\CAD\2217.0014\000\_SITE VICINITY.DWG



LEGEND

- - - PROPERTY BOUNDARY
- APPROXIMATE SOIL BORING LOCATION

Title:

SITE MAP WITH SOIL BORING LOCATIONS

NW CORNER KATELLA AVENUE AND WINNERS CIRCLE  
CYPRESS, CA 90720

Prepared for:

SHEA PROPERTIES

<div>ROUX</div>	Compiled by: M.E.	Date: 17JUN2019	FIGURE <div>3</div>
	Prepared by: A.T.	Scale: AS SHOWN	
	Project Mgr: M.E.	Project: 2217.0014L000	
	File: 2217.0014L000_SITE VICINITY.DWG		



1. Soil Analytical Results

**Table 1. Soil Analytical Results**  
Northwest Corner, Katella Ave and Winners Circle  
Cypress, California

Sample ID	Sample Date	Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Vanadium	Zinc	TPH (C23-C44)
<b>Analytical Method</b>		USEPA Method 6010B												USEPA Method 8015M
<b>Units</b>		mg/kg												
<b>Typical Range for California Soil<sup>1</sup></b>		0.15-1.95 mean = 0.60	12 <sup>a</sup>	133-1,400 mean = 509	0.05-1.7 mean = 0.36	23-1,579 mean = 122	2.7-46.9 mean = 14.9	9.1-96.4 mean = 28.7	12.4-97.1 mean = 23.9	0.1-9.6 mean = 1.3	9-509 mean = 57	39-288 mean = 112	88-236 mean = 149	--
<b>USEPA RSL - Residential Soil</b>		31	0.68	15,000	71	NS	23	3,100	400	390	NS	390	23,000	NS
<b>DTSC HERO Note 3 SL - Residential Soil</b>		NS	0.11	NS	71	NS	NS	NS	80	NS	820	NS	NS	NS
<b>SF-RWQCB ESL - Residential Soil</b>		11	0.26	15,000	78	NS	23	3,100	80	390	820	390	23,000	12,000
SS-1-0.5	6/7/2019	<b>3.83</b>	<b>3.56</b>	<b>77.6</b>	<b>0.76</b>	<b>20.5</b>	<b>10.8</b>	<b>14.4</b>	<b>11.0</b>	<b>6.11</b>	<b>13.6</b>	<b>45.0</b>	<b>57.2</b>	NA
SS-2-0.5	6/7/2019	<3	<b>4.34</b>	<b>68.0</b>	<b>0.73</b>	<b>18.7</b>	<b>9.84</b>	<b>12.6</b>	<b>11.8</b>	<b>2.16</b>	<b>13.2</b>	<b>39.6</b>	<b>55.2</b>	<b>73</b>
SS-3-0.5	6/7/2019	<3	<b>7.06</b>	<b>64.8</b>	<b>0.50</b>	<b>11.0</b>	<b>5.77</b>	<b>12.7</b>	<b>13.4</b>	<1	<b>13.3</b>	<b>30.2</b>	<b>53.6</b>	NA
SS-4-0.5	6/7/2019	<3	<b>7.55</b>	<b>77.8</b>	<b>0.68</b>	<b>19.5</b>	<b>9.45</b>	<b>14.4</b>	<b>17.2</b>	<1	<b>13.7</b>	<b>39.7</b>	<b>56.0</b>	NA
SS-5-0.5	6/7/2019	<3	<b>11.7</b>	<b>75.3</b>	<b>0.65</b>	<b>17.4</b>	<b>9.2</b>	<b>15.1</b>	<b>15.2</b>	<1	<b>13.2</b>	<b>39.6</b>	<b>64.5</b>	NA
SS-6-0.5	6/7/2019	<3	<b>7.30</b>	<b>88.5</b>	<b>0.82</b>	<b>20.8</b>	<b>10.8</b>	<b>16.6</b>	<b>16.3</b>	<1	<b>14.4</b>	<b>42.1</b>	<b>72.8</b>	NA
SS-7-0.5	6/7/2019	<3	<b>7.26</b>	<b>105</b>	<b>0.83</b>	<b>22.3</b>	<b>11.8</b>	<b>17.9</b>	<b>16.3</b>	<1	<b>15.3</b>	<b>48.0</b>	<b>67.7</b>	NA
SS-8-0.5	6/7/2019	<b>3.43</b>	<b>2.99</b>	<b>87.1</b>	<b>0.73</b>	<b>21.4</b>	<b>11.4</b>	<b>14.8</b>	<b>9.6</b>	<1	<b>13.4</b>	<b>46.9</b>	<b>58.5</b>	NA

**Notes:**

USEPA = United States Environmental Protection Agency  
mg/kg = milligrams per kilogram

<sup>1</sup>Bradford, G.R., Chang, A.C., Page, A.L., Bakhtar, D., Frampton, J.A., and Wright, H., 1996, Background Concentrations of Trace and Major Elements in California Soils, Kearney Foundation of Soil Sciences Special Report, Division of Agriculture and Natural Resources, University of California.

<sup>a</sup>Upper-bound background concentration from Chernoff, G., Bosan, W., and Outiz, D.. DTSC. Determination of a Southern California Regional Background Arsenic Concentration in Soil.

RSL = USEPA Regional Screening Level for residential soil, updated May 2018.

DTSC HERO Note 3 SL = Residential soil screening level (SL) published by the California Department Of Toxic Substances Control (DTSC) Human And Ecological Risk Office (HERO) in Note Number 3, updated April 2019. The most conservative values were chosen from the cancer and noncancer endpoint screening levels (i.e., the lowest screening level is shown here).

SF-RWQCB ESL = San Francisco Bay Regional Water Quality Control Board (SWBRWQCB) Environmental Screening level Direct Exposure Human Health Risk Level for Residential Shallow Soil Exposure. The most conservative values were chosen from the cancer and noncancer endpoint screening levels (i.e., the lowest screening level is shown here).

NS = No standard currently established.

NA = Not analyzed.

-- = Not applicable.

<X = Analyte not detected at or above the laboratory Reporting Detection Limit.

**Bold** indicates a concentration greater than the laboratory Reporting Detection Limit.

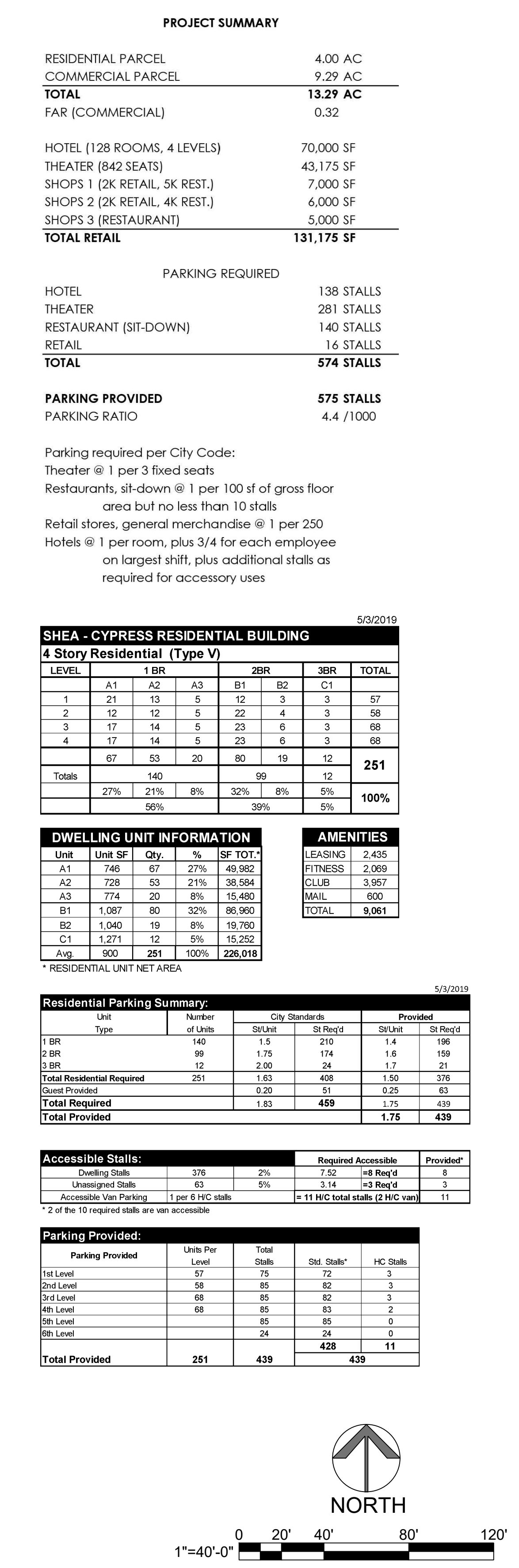
Shaded indicates a concentration greater than the USEPA, DTSC HERO Note 3, and/or SF-RWQCB screening levels.

Only analytes with detections are presented here. For full list of analytes, see laboratory reports.

## **APPENDICES**

- A. User-Provided Information
- B. Glossary of Terms
- C. Historical Topographic Maps
- D. EDR Radius Map Report with Geotcheck®
- E. Previous Phase I ESA
- F. Historical Aerial Photographs
- G. City Directories
- H. Sanborn Fire Maps
- I. Regulatory Records Documentation
- J. Photographic Log
- K. Laboratory Report
- L. Personnel Qualifications

## User-Provided Information



A1.0



ARCHITECTS  
ORANGE



## ASTM E 1527-13 User Questionnaire

In order to qualify for the protection offered under the EPA All Appropriate Inquiry (AAI) Standard, the **User** (entities seeking to use the ASTM E1527-13 Practice to complete an environmental site assessment of the property; i.e. Lenders and/or Borrowers) must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that AAI is not complete. This information should be the collective knowledge of the entities relying on the Phase I. **Please note that you are not being asked to evaluate the property, but rather to provide your knowledge of information on the property.**

Site Name/Address: Northwest corner of Katella Ave. and Winners Circle

Person Interviewed/Title: Elizabeth Cobb - VP of Development Date: 5/8/19

If known, when was the property initially developed? Unknown

If different, when were the current building(s) on the property constructed? No building on-site

1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Did a search of *recorded land title records* (or judicial records where appropriate, see note 1 below) identify any environmental liens filed or recorded against the *property* under federal, tribal, state or local law?

Yes ☐ No ☒ If you answer yes, please include an explanation in the space provided below:

---

---

---

2. Activity and land use limitations that are in place on the *property* or that have been filed or recorded in a registry (40 CFR 312.26).

Did a search of *recorded land title records* (or judicial records where appropriate, see note 1 below) identify AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the *property* and/or have been filed against the *property* under federal, tribal, state, or local law?

*Engineering Controls* are defined as physical modifications to a site or facility to reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or ground water on the property). *Institutional Controls* are defined as a legal or administrative restriction on the use of, or access to, a site or facility to 1) reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or ground water on the property, or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment.

Yes ☐ No ☒ If you answer yes, please include an explanation in the space provided below:

---

---

---

Note 1 - In certain jurisdictions, federal, tribal, state, or local statutes, or regulations specify that environmental liens and AULs be filed in judicial records rather than land title records. In such cases judicial records must be searched for environmental liens and AULs.

3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

Do you have any specialized knowledge or experience related to the *property* or nearby properties?

For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Yes ☐ No ☒ If you answer yes, please include an explanation in the space provided below:

---

---

---

4. Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).

a) Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*?

Yes ☒ No ☐ If you answer no, please include an explanation in the space provided below, including whether the lower purchase price is because contamination is known or believed to be present at the *property*?

---

---

---

5. Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).

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? For example, as *User*:

a. Do you know the past uses of the *property*?

Yes ☐ No ☒

b. Do you know of specific chemicals that are present or once were present at the *property*?

Yes ☐ No ☒

c. Do you know of spills or other chemical releases that have taken place at the *property*?

Yes ☐ No ☒

d. Do you know of any environmental cleanups that have taken place at the *property*?

Yes ☐ No ☒

If you answered yes to any of the questions above, please include an explanation in the space provided below:

---

---

---

6. The degree of obviousness of the presence of likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

Based on your knowledge and experience related to the *property*, are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

Yes ☐ No ☒ If you answer yes, please include an explanation in the space provided below:

---

---

---

---

Please provide the following property contact information:

Property Owner: City of Cypress

Phone Number: (714) 229-6700

Key Site Personnel: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Past Owner: Dr. Allred

Phone Number: Unknown

## Glossary of Terms

## GLOSSARY OF KEY TERMS

This appendix provides definitions, description of terms, and a list of acronyms for many of the words used in ASTM E 1527-13. These terms are an integral part of ASTM E 1527-13 and are critical to understanding ASTM E 1527-13 and its use.

### DEFINITIONS:

**Abandoned Property** – *property* that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current *owner* to surrender rights to the *property*.

**Activity and Use Limitations** – Legal or physical restrictions or limitations on the use of, or access to, a site or facility: (1) to reduce or eliminate potential exposure to *hazardous substances* or *petroleum products* in the soil, soil vapor, groundwater, and/or surface water on the *property*, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or *engineering controls*, are intended to prevent adverse impacts to individuals or populations that may be exposed to *hazardous substances* and *petroleum products* in the soil, soil vapor, groundwater, and/or surface water on the *property*.

**Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)** – The list of sites compiled by EPA that EPA has investigated, or is currently investigating, for potential hazardous substance contamination for possible inclusion on the National Priorities List.

**Construction debris** – Concrete, brick, asphalt, and other such building materials discarded in the construction of a building or other improvement to property.

**Contaminated public wells** – Public wells used for drinking water that have been designated by a government entity as contaminated by toxic substances (for example, chlorinated solvents), or as having water unsafe to drink without treatment.

**Contiguous Property Owner Liability Protection** – a person may qualify for the *contiguous property owner liability protection* if, among other requirements, such person owns real *property* that is contiguous to, and that is or may be contaminated by *hazardous substances* from other real *property* that is not owned by that person. Furthermore, such person conducted *all appropriate inquiries* at the time of acquisition of the *property* and did not know or have reason to know that the *property* was or could be contaminated by a *release* or threatened *release* from the contiguous *property*. The *all appropriate inquiries* must not result in knowledge of contamination. If it does, then such person did “know” or “had reason to know” of contamination and would not be eligible for the *contiguous property owner liability protection*.

**Controlled Recognized Environmental Condition** – a *recognized environmental condition* 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), 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*).

**CORRACTS list** – a list maintained by EPA of *hazardous waste* treatment, storage, or disposal facilities and other RCRA-regulated facilities (due to past interim status or storage of *hazardous waste* beyond 90 days)

that have been notified by the U.S. Environmental Protection Agency to undertake corrective action under RCRA. The *CORRACTS list* is a subset of the EPA database that manages RCRA data.

**Demolition debris** – Concrete, brick, asphalt, and other such building materials discarded in the demolition of a building or other improvement to property.

**Drum** – A container (typically, but not necessarily, holding 55 gal (208 L) of liquid) that may be used to store *hazardous substances* or *petroleum products*.

**Dry wells** – Underground areas where soil have been removed and replaced with pea gravel, coarse sand, or large rocks. Dry wells are used for drainage, to control storm runoff, for the collection of spilled liquids (intentional and non-intentional), and wastewater disposal (often illegal).

**Dwelling** – Structure of portion thereof used for residential habitation.

**Engineering controls** – Physical modifications to a site or facility (for example, capping, slurry walls, or point of use water treatment) to reduce or eliminate the potential for exposure to contaminants in the soil or groundwater on the property.

**Environmental lien** – A charge, security, or encumbrance upon title to a *property* to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of *hazardous substances* or *petroleum products* upon a *property*, including (but not limited to) liens imposed pursuant to CERCLA 42 USC § 9607(1) and similar state or local laws.

**ERNS list** – EPA's emergency response notification system list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR parts 302 and 355.

**Federal Register (FR)** – Publication of the United States government published daily (except for federal holidays and weekends) containing all proposed and final regulations and some other activities of the federal government. When regulations become final, they are included in the Code of Federal Regulations (CFR), as well as published in the Federal Register.

**Fire insurance maps** – Maps produced for private fire insurance map companies that indicate uses of properties at specified dates and that encompass the property. These maps are often available in local libraries, historical societies, private resellers, or from the map companies who produced them. See Question 23 of the transaction screen process in Practice E 1528 and 7.3.4.2 of this practice.

**Hazardous substance** – A substance defined as hazardous pursuant to CERCLA 42 USC § 9601(14), as interpreted by EPA regulations and the courts: “(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Soil Waste Disposal Act (42 USC § 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC § 6901 *et seq.*) has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of Title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act (42 USC § 7412), and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator (of EPA) has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A)

through (F) of this paragraph; the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

**Hazardous waste** – Any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC § 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC § 6901 *et seq.*) has been suspended by Act of Congress). The Solid Waste Disposal Act of 1980 amended RCRA. RCRA defines hazardous waste, in 42 USC § 6903, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may – (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

**Institutional control** – A legal or administrative restriction (e.g., deed restriction, restrictive zoning) on the use of, or access to, a site or facility to reduce or eliminate potential exposure to contaminants in the soil or groundwater on the property.

**Landfill** – A place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term *solid waste disposal site* and is also known as a garbage dump, trash dump, or similar term.

**Local street directories** – Directories published by private (or sometimes government) sources that show ownership, occupancy, and/or use of sites by reference to street addresses. Often, local street directories are available at libraries of local governments, colleges or universities, or historical societies.

**Material safety data sheet (MSDS)** – Written or printed material concerning a hazardous substance which is prepared by chemical manufacturers, importers, and employers for hazardous chemicals pursuant to OSHA's Hazard Communication Standard, 29, CFR 1910.1200.

**National Contingency Plan (NCP)** – The National Oil and Hazardous Substances Pollution Contingency Plan, found at 40 CFR § 300, that is the EPA's blueprint on how hazardous substances are to be cleaned up pursuant to CERCLA.

**National Priorities List (NPL)** – List compiled by the EPA, pursuant to CERCLA 42 USC § 9605(a)(8)(B), of properties with the highest priority for cleanup pursuant to EPA's Hazard Ranking System. See 40 CFR Part 300.

**Occupants** – Those tenants, subtenants, or other persons or entities using the *property* or a portion of the *property*.

**Owner** – Generally the fee owner of record for the *property*.

**Petroleum exclusion** – The exclusion from CERCLA liability provided in 42 USC § 9601(14), as interpreted by the courts and EPA: "The term (hazardous substance) does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

**Petroleum products** – Those substances included within the meaning of the *petroleum exclusion* to CERCLA, 42 USC § 9601(14), as interpreted by the courts and EPA, that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 USC § 9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (The word fraction refers to certain distillates of crude oil, including gasoline, kerosene, diesel oil, jet fuels, and fuel oil, pursuant to *Standard Definitions of Petroleum Statistics*<sup>1</sup>.)

**Phase I Environmental Site Assessment** – The process described in this practice.

**Pits, ponds, or lagoons** – Man-made or natural depressions in the ground surface that are likely to hold liquids or sludge containing *hazardous substances* or *petroleum products*. The likelihood of such liquids or sludge being present is determined by evidence of factors associated with the pit, pond, or lagoon, including, but not limited to, discolored water, distressed vegetation, or the presence of an obvious wastewater discharge.

**Property** – The real property that is the subject of the *environmental site assessment* described in this practice. Real property includes buildings and other fixtures and improvement located on the property and affixed to the land.

**Property tax files** – The files kept for property tax purposes by the local jurisdiction where the property is located and includes records of past ownership, appraisals, maps, sketches, photos, or other information that is reasonable ascertainable and pertaining to the property.

**RCRA generators** – Those persons or entities that generate hazardous waste, as defined and regulated by RCRA.

**RCRA generators list** – List kept by the EPA of those persons or entities that generate hazardous wastes as defined and regulated by RCRA.

**RCRA TSD facilities** – Those facilities at which treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA.

**RCRA TSD facilities list** – List kept by the EPA of those facilities at which treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA.

**Recorded land title records** – Records of fee ownership, leases, land contracts, easements, liens, and other encumbrances on or of the property recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the *property* is located. (Often such records are kept by a municipal or county recorder or clerk.) Such records may be obtained from title companies or directly from the local government agency. Information about the title to the property that is recorded in a U.S. district court or any place other than where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located, are not considered part of recorded land title records.

**Records of emergency release notifications (SARA § 304)** – Section 304 of EPCRA or Title III of SARA requires operators of facilities to notify their local emergency planning committee (as defined in EPCRA) and the state emergency response commission (as defined in EPCRA) of any release beyond the facility's boundary of any reportable quantity of any extremely hazardous substance. Often the local fire department is the local emergency planning committee. Records of such notifications are "Records of Emergency Release Notifications" (SARA§ 304).



**Report** – The written record of a transaction screen process as required by Practice E 1528 or the written report prepared by the environmental professional and constituting part of a “Phase I Environmental Site Assessment,” as required by this practice.

**Solid waste disposal site** – A place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term *landfill* and is also known as a garbage dump, trash dump, or similar term.

**Solvent** – A chemical compound that is capable of dissolving another substance and may itself be a *hazardous substance*, used in a number of manufacturing/industrial processes including, but not limited to, the manufacture of paints and coatings for industrial and household purposes, equipment clean-up, and surface degreasing in metal fabricating industries.

**State registered USTs** – State lists of underground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA.

**Sump** – A pit, cistern, cesspool, or similar receptacle where liquids drain, collect, or are stored.

**TSD facility** – Treatment, storage, or disposal facility (*see RCRA TSD facilities*).

**Underground storage tank (UST)** - Any tank, including underground piping connected to the tank, that is or has been used to contain *hazardous substances* or *petroleum products* and the volume of which is 10% or more beneath the surface of the ground.

**USGS 7.5 Minute Topographic Map** – The map (if any) available from or produced by the United States Geological Survey, entitled “USGS 7.5 Minute Topographic Map,” and showing the property.

**Wastewater** – Water that (1) is or has been used in an industrial or manufacturing process, (2) conveys or has conveyed sewage, or (3) is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. Wastewater does not include water originating on or passing through or adjacent to a site, such as storm water flows, that has not been used in industrial or manufacturing processes, has not been combined with sewage, or is not directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

**Zoning/land use records** – Those records of the local government in which the *property* is located, indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps and/or written records. They are often located in the planning department of a municipality or county.

#### **DEFINITIONS SPECIFIC TO ASTM E 1527-13:**

**Actual knowledge** – The knowledge actually possessed by an individual who is a real person, rather than an entity. Actual knowledge is to be distinguished from constructive knowledge that is knowledge imputed to an individual or entity.

**Adjoining properties** – Any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them.

**Aerial photographs** – Photographs taken from an airplane or helicopter (from a low enough altitude to allow identification of development and activities) of areas encompassing the property. Aerial photographs are often available from government agencies or private collections unique to a local area.

**Appropriate inquiry** – That inquiry constituting “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” as defined in CERCLA, 42 USC § 9601(35)(B), that will give a party to a *commercial real estate* transaction the *innocent landowner defense* to the CERCLA liability (42 USC § 9601(A) and (B) and § 9607(b)(3)), assuming compliance with other elements of the defense. See Appendix X1.

**Approximate minimum search distance** – The area for which records must be obtained and reviewed pursuant to Section 7 subject to the limitations provided in that section. This may include areas outside the *property* and shall be measured from the nearest *property* boundary. This term is used in lieu of radius to include irregularly-shaped properties.

**Building department records** – 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. Often, building department records are located in the building department of a municipality or county.

**Business environmental risk** – A risk which can have a material environmental or environmentally-driven financial impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of *business environmental risk* issues may necessitate that an *environmental professional* address one or more non-scope considerations, some of which are identified in Section 12.

**Commercial real estate** – Any real property except a dwelling or property with no more than four dwelling units exclusively for residential use (except that a dwelling or property with no more than four dwelling units exclusively for residential use is included in this term when it has a commercial function, as in the building of such dwellings for profit). This term includes, but is not limited to, undeveloped real property and real property used for industrial, retail, office, agricultural, other commercial, medical, or educational purposes; property used for residential purposes that has more than four residential dwelling units; and any property with no more than four dwelling units for residential use when it has a commercial function, as in the building of such dwellings for profit.

**Commercial real estate transaction** – A transfer of title to or possession of real property or receipt of a security interest in real property, except that it does not include transfer of title to or possession of real property or the receipt of a security interest in real property with respect to an individual dwelling or building containing fewer than five dwelling units, nor does it include the purchase of a lot or lots to construct a dwelling for occupancy by a purchaser, but a commercial real estate transaction does include real property purchased or leased by persons or entities in the business of building or developing dwelling units.

**Controlled Recognized Environmental Condition** – a *recognized environmental condition* 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), 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*).

**Due diligence** – The process of inquiring into the environmental characteristics of a parcel of *commercial real estate* or other conditions, usually in connection with a commercial real estate transaction. The degree and kind of due diligence vary for different properties and differing purposes.

**Environmental audit** – The investigative process to determine if the operations of an existing facility are in compliance with applicable environmental laws and regulations. This term should not be used to describe Practice E 1528 or this practice, although an environmental audit may include an *environmental site assessment* or, if prior audits are available, may be part of an environmental site assessment.

**Environmental professional** – A person possessing sufficient training and experience necessary to conduct a *site reconnaissance*, *interviews*, and other activities in accordance with this practice, and from the information generated by such activities, having the ability to develop opinions and conclusions regarding *recognized environmental conditions* in connection with the *property* in question. An individual's status as an environmental professional may be limited to the type of assessment to be performed or to specific segments of the assessment for which the professional is responsible. The person may be an independent contractor or an employee of the *user*.

**Environmental site assessment (ESA)** – The process by which a person or entity seeks to determine if a particular parcel of real *property* (including improvements) is subject to *recognized environmental conditions*. At the option of the *user*, an environmental site assessment may include more inquiry than that constituting *appropriate inquiry* or, if the user is not concerned about qualifying for the *innocent landowner defense*, less inquiry than that constituting *appropriate inquiry*. An environmental site assessment is both different from and less rigorous than an *environmental audit*.

**Fill dirt** – Dirt, soil, sand, or other earth, obtained off-site, that is used to fill holes or depressions, create mounds, or otherwise artificially change the grade or elevation of real property. It does not include material that is used in limited quantities for normal landscaping activities.

**Hazardous waste/contaminated sites** – Sites on which a release has occurred, or is suspected to have occurred, of any *hazardous substance*, *hazardous waste*, or *petroleum products*, and that release or suspected release has been reported to a government entity.

**Historical Recognized Environmental Condition** – a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the *property* and has been addressed to the satisfaction of the applicable regulatory authority or meeting 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 *historical recognized environmental condition*, the *environmental professional* must determine whether the past *release* is a *recognized environmental condition* at the time the *Phase I Environmental Site Assessment* is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past *release* to be a *recognized environmental condition* at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a *recognized environmental condition*.

**Innocent landowner defense** – That defense to CERCLA liability provided in 42 USC § 9601(35) and § 9607(b)(3). One of the requirements to qualify for this defense is that the party make “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice.” There are additional requirements to qualify for this defense.

**Interviews** – Those portions of this practice that are contained in Section 9 and 10 thereof and address questions to be asked of *owners* and *occupants* of the *property* and questions to be asked of local government officials.

**Key site manager** – The person identified by the *owner* of a *property* as having good knowledge of the uses and physical characteristics of the property.

**Local government agencies** – Those agencies of municipal or county government having jurisdiction over the *property*. Municipal and county government agencies include, but are not limited to, cities, parishes, townships, and similar entities.

**LUST sites** – State lists of leaking underground storage tank sites. Section 9003 (h) of Subtitle I of RCRA gives EPA and states, under cooperative agreements with EPA, authority to clean up releases from UST systems or require owners and operators to do so.

**Major occupants** – Those tenants, subtenants, or other persons or entities each of which uses at least 40% of the leasable area of the *property* or any anchor tenant when the *property* is a shopping center.

**Material threat** – A physically observable or obvious threat which is reasonable likely to lead to a release that, in the opinion of the *environmental professional*, is threatening and might result in impact to human health and the environment. An example might include an aboveground storage tank that contains a hazardous substance and which shows evidence of damage. The damage would represent a material threat if it is deemed serious enough that it may cause or contribute to tank integrity failure with a release of contents to the environment.

**Obvious** – That which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable observer while *visually* or *physically observing the property*.

**Other historical sources** – Any source or sources other than those designated in 7.3.4.1-7.3.4.8 that are credible to a reasonable person and that identify past uses of the property. The term includes, but is not limited to, miscellaneous maps, newspaper archives, and records in the files and/or personal knowledge of the *property owner* and/or *occupants*.

**Physical setting sources** – sources that provide information about the geologic, hydrogeologic, hydrologic, or topographic characteristics of a *property*.

**Practically reviewable** – Information that is practically reviewable means that the information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the *property* without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the *property* or a geographic area in which the *property* is located are not generally *practically reviewable*. Most databases of public records are *practically reviewable* if they can be obtained from the source agency by the county, city, zip code, or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized, or maintained by the source agency only chronologically are not generally practically reviewable. Listings in publicly available records which do not have adequate address information to be located geographically are not generally considered practically reviewable. For large databases with numerous facility records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not *practically reviewable* unless they can be obtained from the source agency in the smaller geographic area of zip codes. Even when information is provided by zip code for some large databases, it is common for an unmanageable number of sites to be

identified within a given zip code. In these cases, it is not necessary to review the impact of all of the sites that are likely to be listed in any given zip code because that information would not be *practically reviewable*. In other words, then so much data is generated that it cannot be feasibly reviewed for its impact on the *property*, it is not *practically reviewable*.

**Preparer** – The person preparing the *transaction screen questionnaire* pursuant to Practice E 1528, who may be either the user or the person to whom the user has delegated the preparation of the *transaction screen questionnaire*.

**Publicly available** – Information that is publicly available means that the source of the information allows access to the information by anyone upon request.

**Reasonably ascertainable** – For purposes of both this practice and Practice E 1528, information that is (1) *publicly available*, (2) obtainable from its source within reasonable time and cost constraints, and (3) *practically reviewable*.

**Recognized Environmental Conditions** – the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property*: (1) due to 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*. *De minimis conditions* are not *recognized environmental conditions*.

**Records review** – That part that is contained in Section 7 of this practice addresses which records shall or may be reviewed.

**Site reconnaissance** – That part that is contained in Section 8 of this practice and addresses what should be done in connection with the *site visit*. The site reconnaissance includes, but is not limited to, the *site visit* done in connection with such a Phase I Environmental Site Assessment.

**Site visit** – The visit to the property during which observations are made constituting the *site reconnaissance* section of this practice and the *site visit* requirement of Practice E 1528.

**Standard environmental record sources** – Those records specified in 7.2.1.1.

**Standard historical sources** – Those sources of information about the history of uses of the property specified in 7.3.4.

**Standard physical setting source** – A current USGS 7.5-minute topographic map (if any) showing the area on which the property is located.

**Standard practice(s)** – The activities set forth in either and both this practice and Practice E 1528.

**Standard sources** – Sources of environmental, physical setting, or historical records specified in Section 7 of this practice.

**Transaction screen process** – The process described in Practice E 1528.

**Transaction screen questionnaire** – The questionnaire provided in Section 6 of Practice E 1528.

**User** – The party seeking to use Practice E 1528 to perform an *environmental site assessment* of the *property*. A user may include, without limitation, a purchaser of *property*, a potential tenant of *property*, an owner of *property*, a lender, or a property manager.

**Visually and/or physically observed** – During a *site visit* pursuant to Practice E 1528, or pursuant to this practice, this term means observations made by vision while walking through a *property* and the structures located on it and observations made by the sense of smell, particularly observations of noxious or foul odors. The term “walking through” is not meant to imply that disabled persons who cannot physically walk may not conduct a *site visit*; they may do so by the means at their disposal for moving through the *property* and the structures located on it.

**ACRONYMS:**

**CERCLA** – Comprehensive Environmental Response, Compensation and Liability Act of 1980 (as amended, 42 USC § 9601 *et seq.*)

**CERCLIS** – Comprehensive Environmental Response, Compensation and Liability Information System (maintained by EPA)

**CFR** – Code of Federal Regulations

**CORRACTS** – Facilities subject to corrective action under RCRA

**EPA** – United States Environmental Protection Agency

**EPCRA** – Emergency Planning and Community Right to Know Act (also known as SARA Title III), 42 USC § 11001 *et seq.*)

**ERNS** – Emergency response notification system

**ESA** – Environmental site assessment (different than an *environmental audit*)

**FOIA** – U.S. Freedom of Information Act (5 USC 552 *et seq.*)

**FR** – Federal Register

**LUST** – Leaking underground storage tank

**MSDS** – Material safety data sheet

**NCP** – National Contingency Plan

## Historical Topographic Maps



Not Reported

Not Reported

Los Alamitos, CA 90720

Inquiry Number: 5646263.4

May 08, 2019

# EDR Historical Topo Map Report

## with QuadMatch™



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# EDR Historical Topo Map Report

05/08/19

**Site Name:**

Not Reported  
Not Reported  
Los Alamitos, CA 90720  
EDR Inquiry # 5646263.4

**Client Name:**

Roux Associates  
402 Heron Drive  
Logan Township, NJ 08085-0000  
Contact: Angela Truong



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Roux Associates 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. EDR's 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:**

<b>P.O.#</b>	2217.0014L000	<b>Latitude:</b>	33.804178 33° 48' 15" North
<b>Project:</b>	Cypress	<b>Longitude:</b>	-118.042085 -118° 2' 32" West
		<b>UTM Zone:</b>	Zone 11 North
		<b>UTM X Meters:</b>	403543.40
		<b>UTM Y Meters:</b>	3740932.02
		<b>Elevation:</b>	32.00' above sea level

**Maps Provided:**

2012	1943
1981	1942
1972	1935
1964	1925
1950	1923
1949	1902
1947	1899
1945	1896

**Disclaimer - Copyright and Trademark Notice**

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 OF 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 or forecast 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.

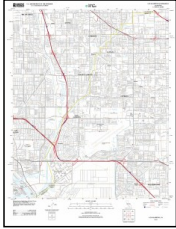
Copyright 2019 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

## ***Topo Sheet Key***

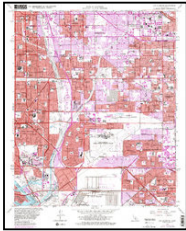
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **2012 Source Sheets**



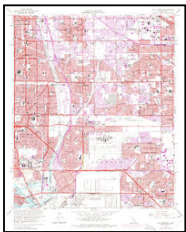
Los Alamos  
2012  
7.5-minute, 24000

### **1981 Source Sheets**



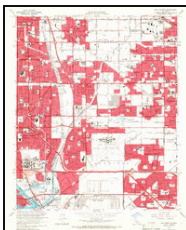
Los Alamos  
1981  
7.5-minute, 24000  
Aerial Photo Revised 1978

### **1972 Source Sheets**



Los Alamos  
1972  
7.5-minute, 24000  
Aerial Photo Revised 1972

### **1964 Source Sheets**



Los Alamos  
1964  
7.5-minute, 24000  
Aerial Photo Revised 1963

## ***Topo Sheet Key***

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1950 Source Sheets**



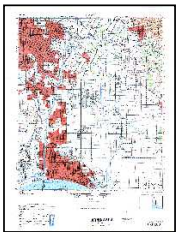
Los Alamos  
1950  
7.5-minute, 24000  
Aerial Photo Revised 1947

### **1949 Source Sheets**



Los Alamos  
1949  
7.5-minute, 24000  
Aerial Photo Revised 1947

### **1947 Source Sheets**



DOWNEY  
1947  
15-minute, 50000

### **1945 Source Sheets**

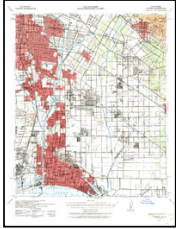


Artesia  
1945  
7.5-minute, 24000

## ***Topo Sheet Key***

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1943 Source Sheets**



Downey  
1943  
15-minute, 62500  
Aerial Photo Revised 1939

### **1942 Source Sheets**



Downey  
1942  
15-minute, 62500

### **1935 Source Sheets**



Los Alamitos  
1935  
7.5-minute, 31680

### **1925 Source Sheets**



Artesia  
1925  
7.5-minute, 24000

## ***Topo Sheet Key***

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1923 Source Sheets**



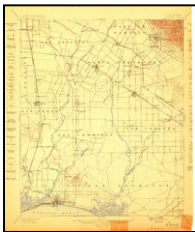
Artesia  
1923  
7.5-minute, 24000

### **1902 Source Sheets**



Downey  
1902  
15-minute, 62500

### **1899 Source Sheets**



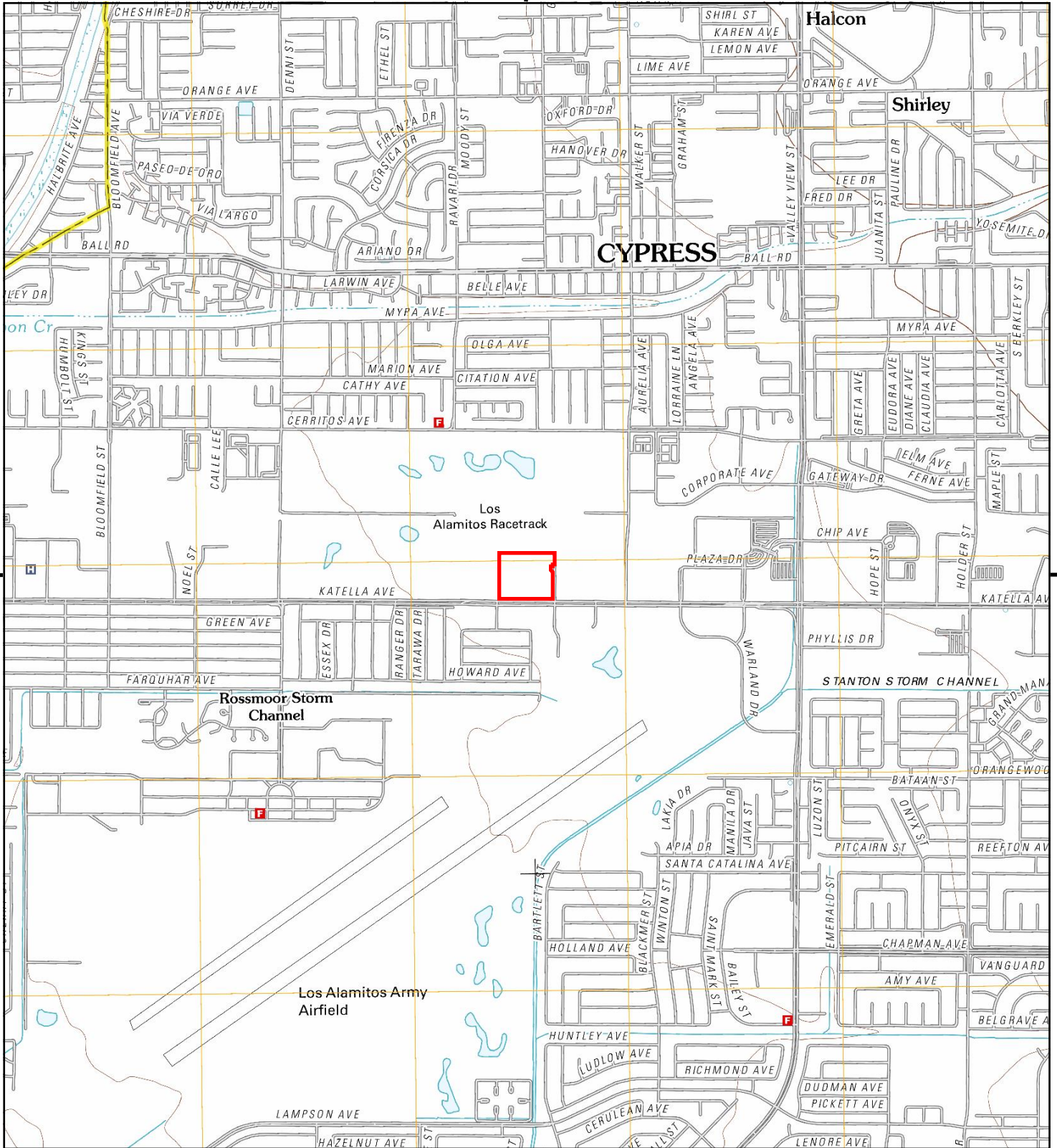
Downey  
1899  
15-minute, 62500

### **1896 Source Sheets**



Downey  
1896  
15-minute, 62500





This report includes information from the following map sheet(s).

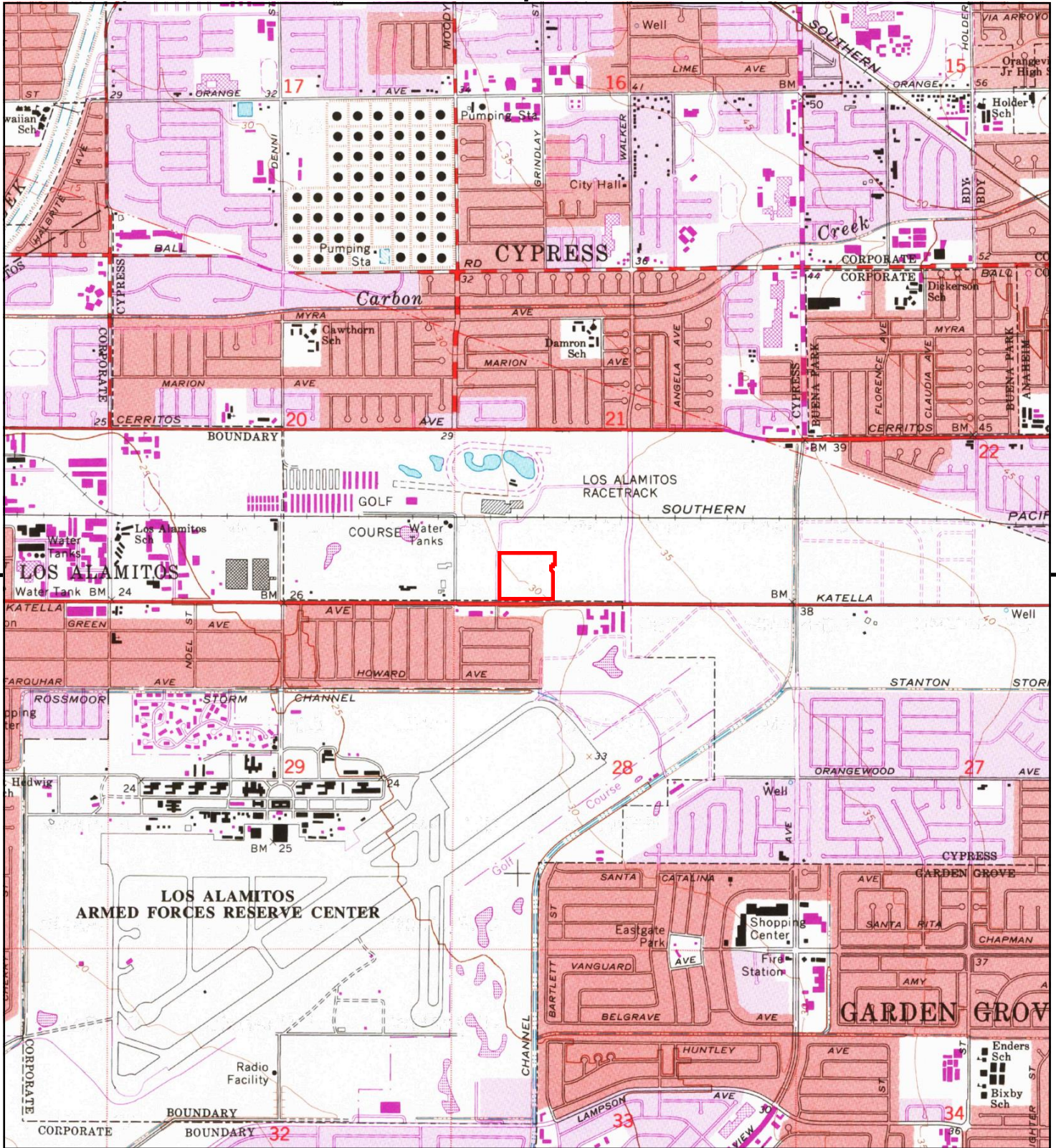


TP, Los Alamitos, 2012, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







This report includes information from the following map sheet(s).

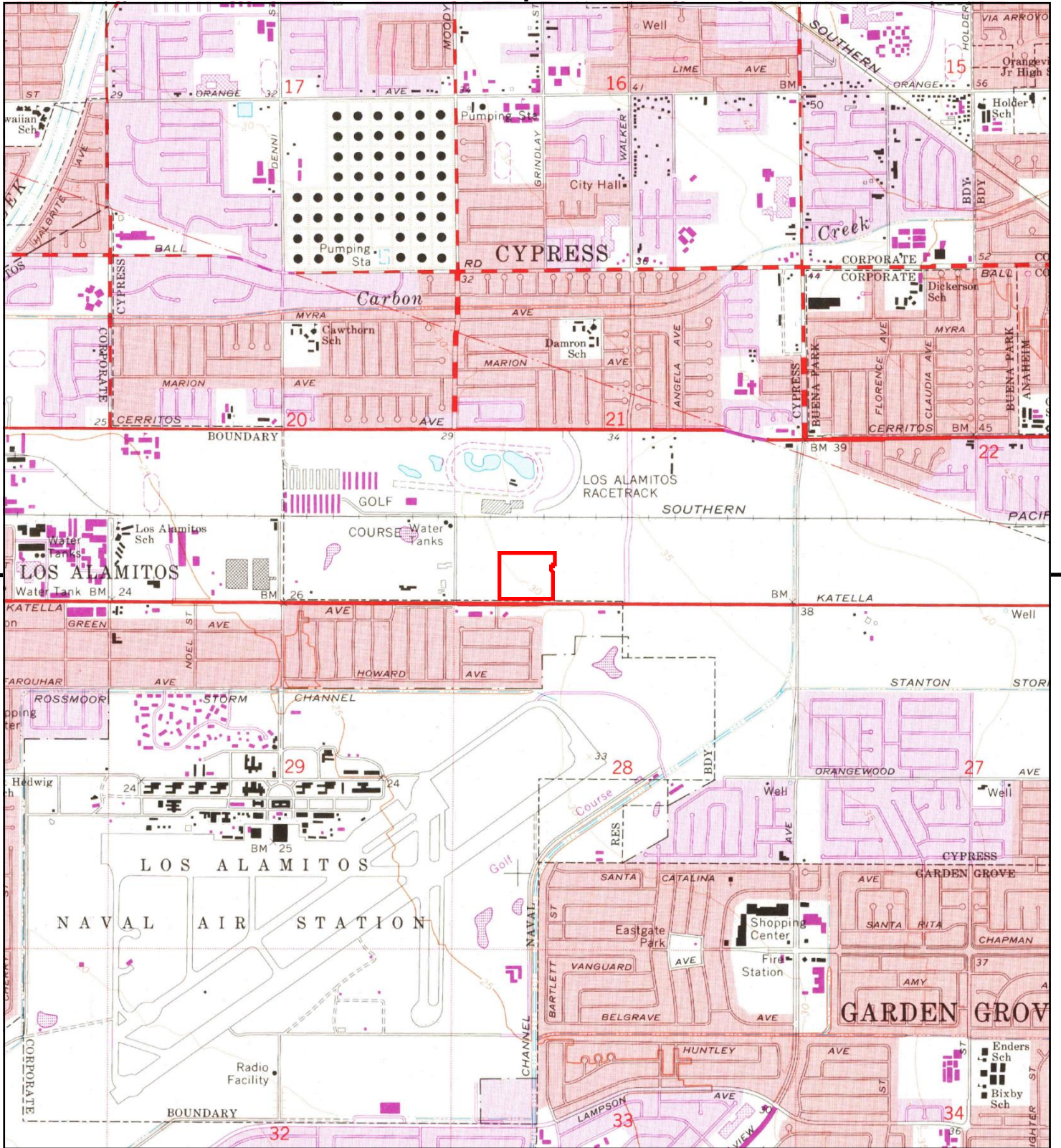


TP, Los Alamitos, 1981, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







This report includes information from the following map sheet(s).

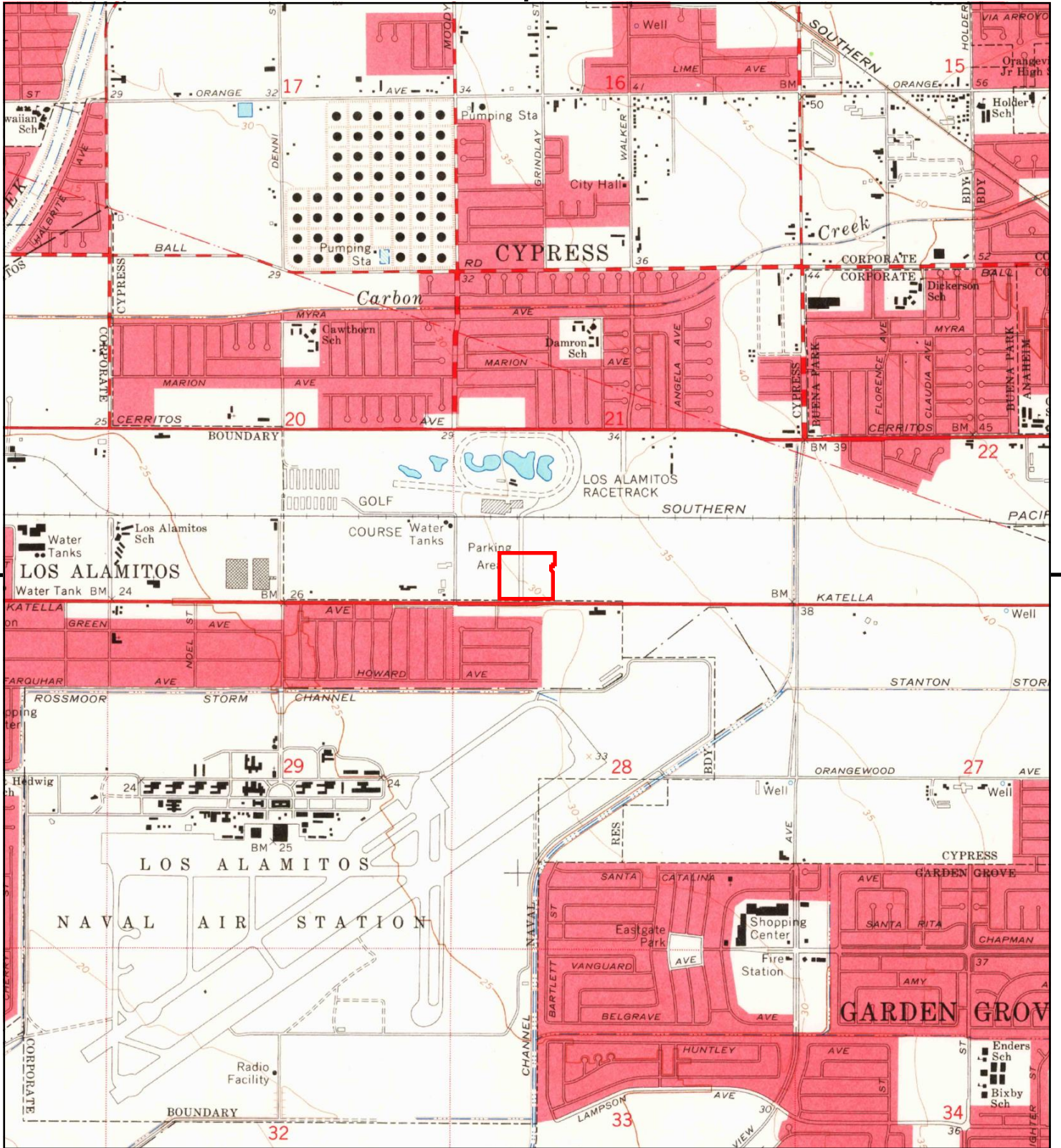


TP, Los Alamitos, 1972, 7.5-minute

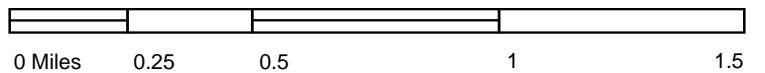
SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







This report includes information from the following map sheet(s).

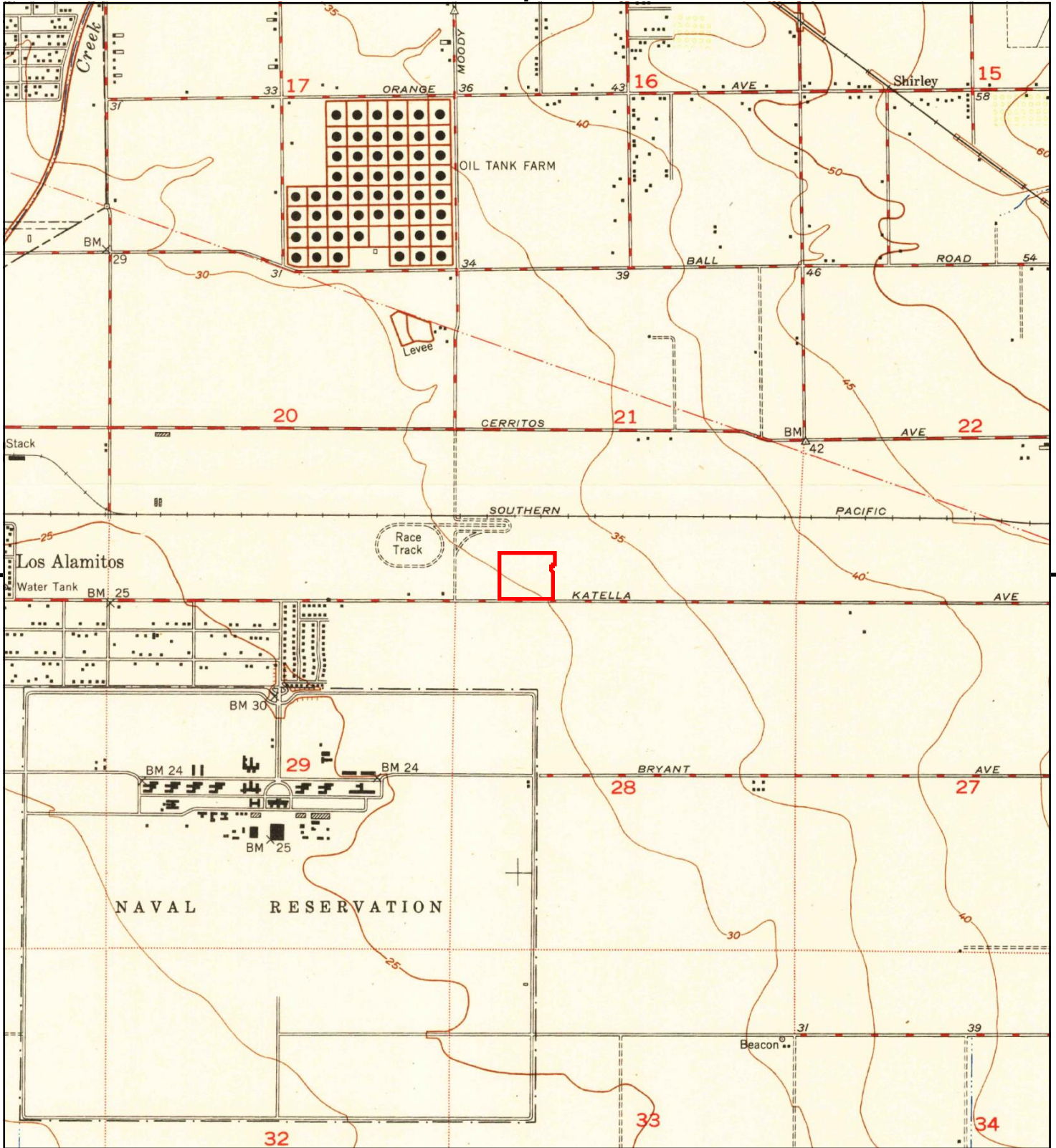


TP, Los Alamitos, 1964, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







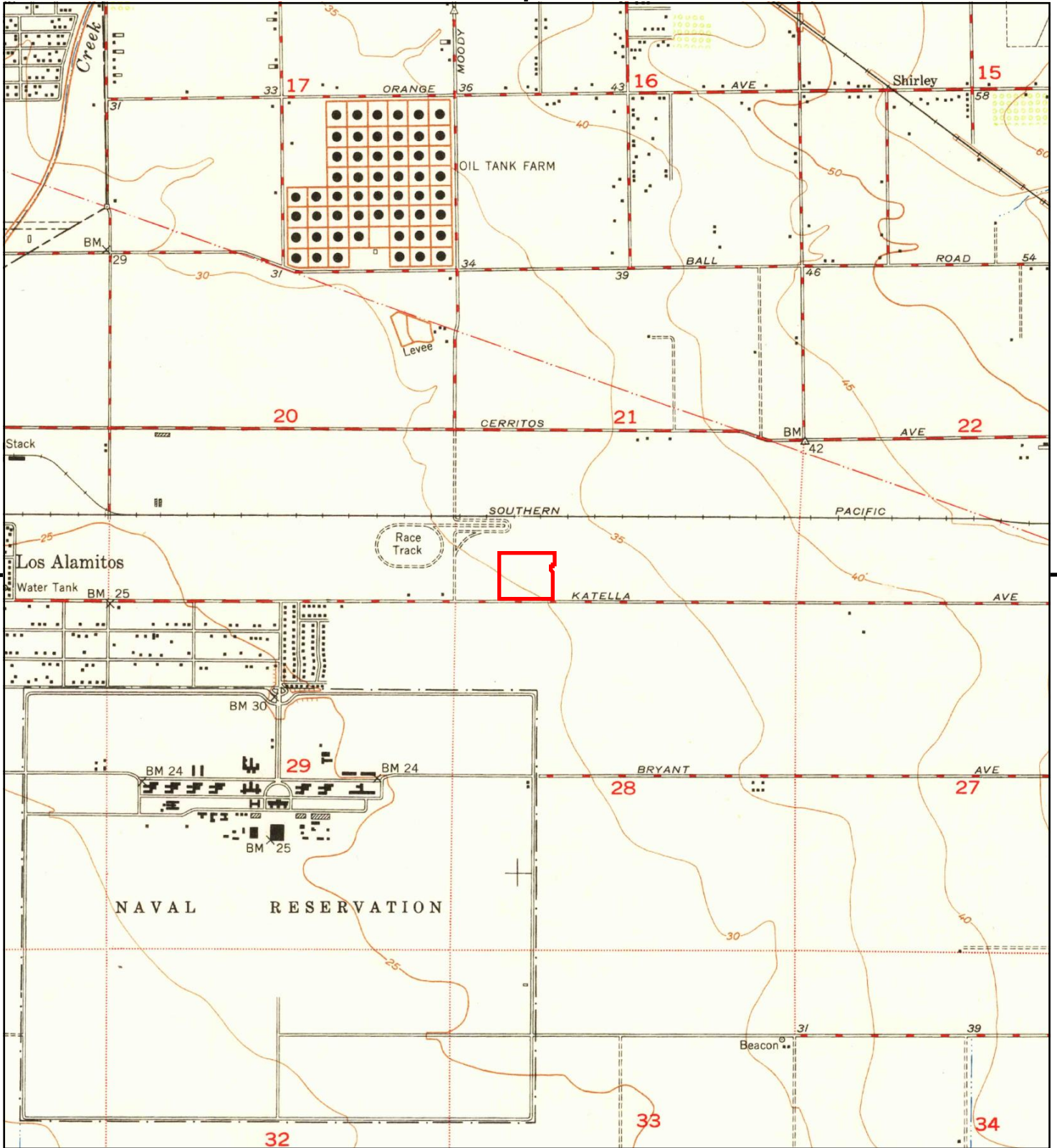
This report includes information from the following map sheet(s).



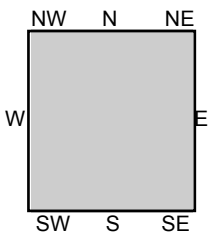
TP, Los Alamitos, 1950, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





This report includes information from the following map sheet(s).

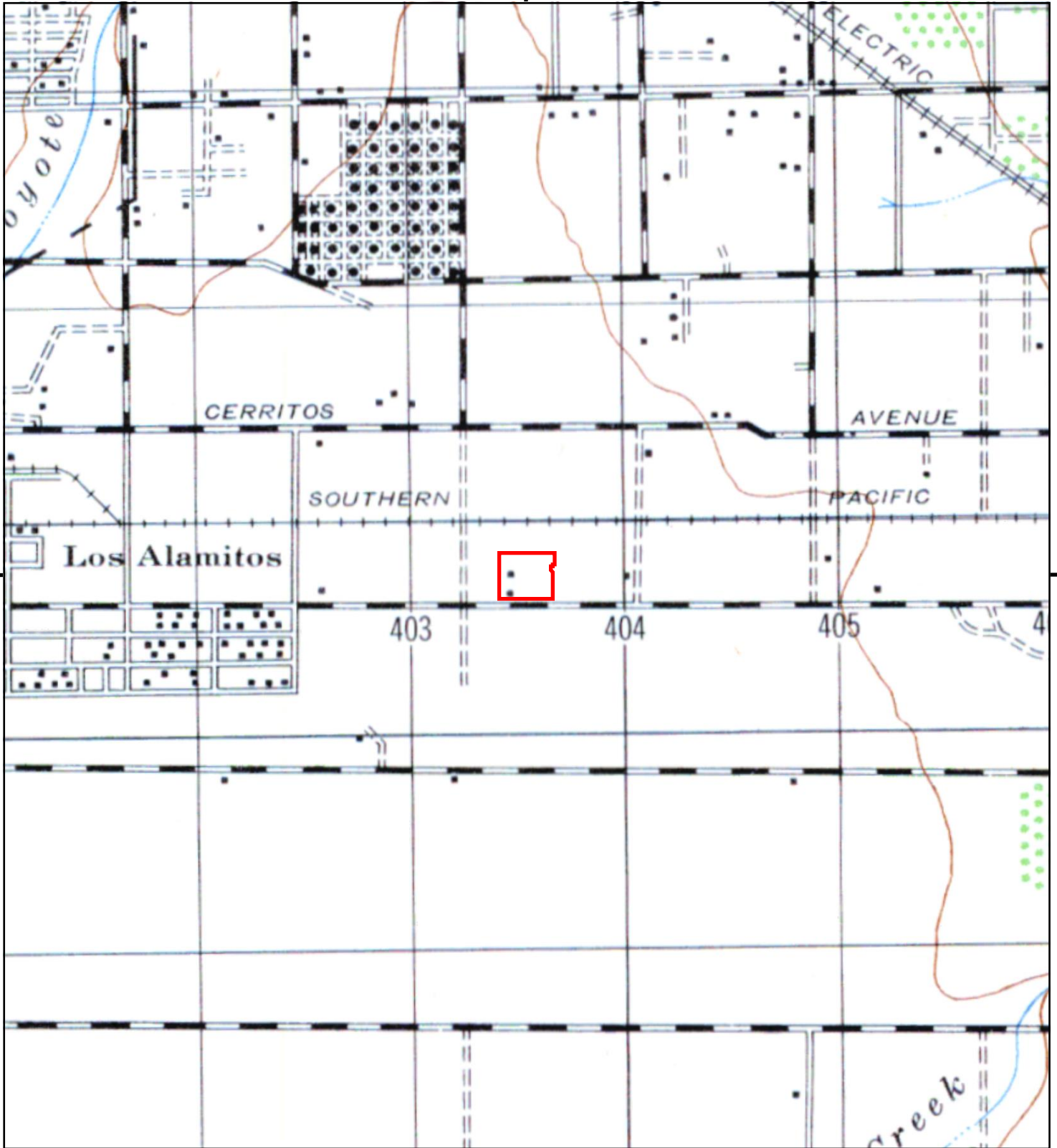


TP, Los Alamitos, 1949, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







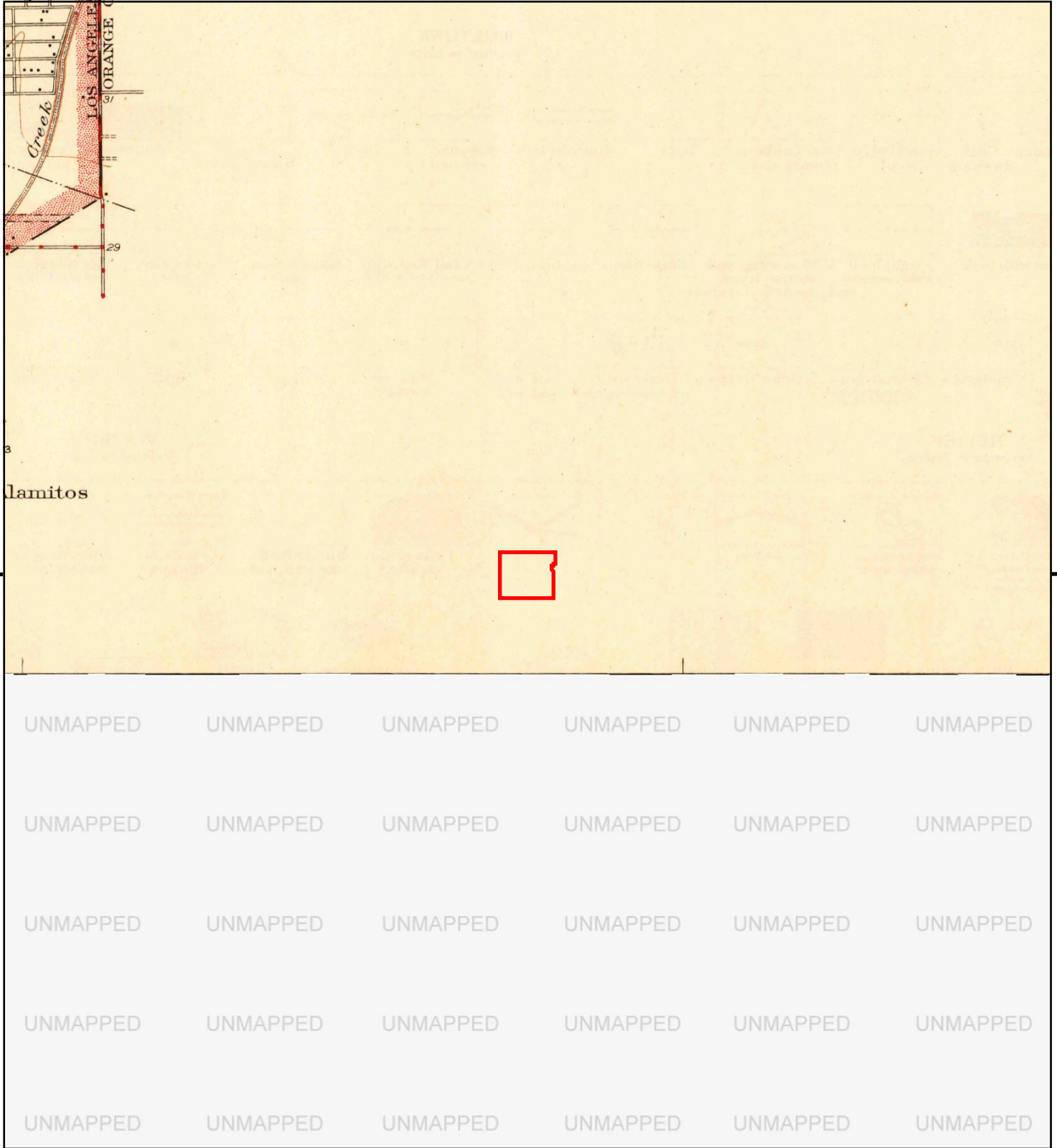
This report includes information from the following map sheet(s).



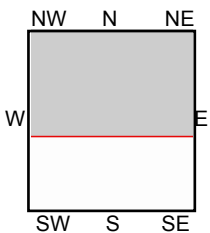
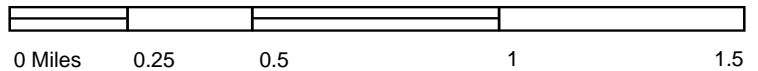
TP, DOWNEY, 1947, 15-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





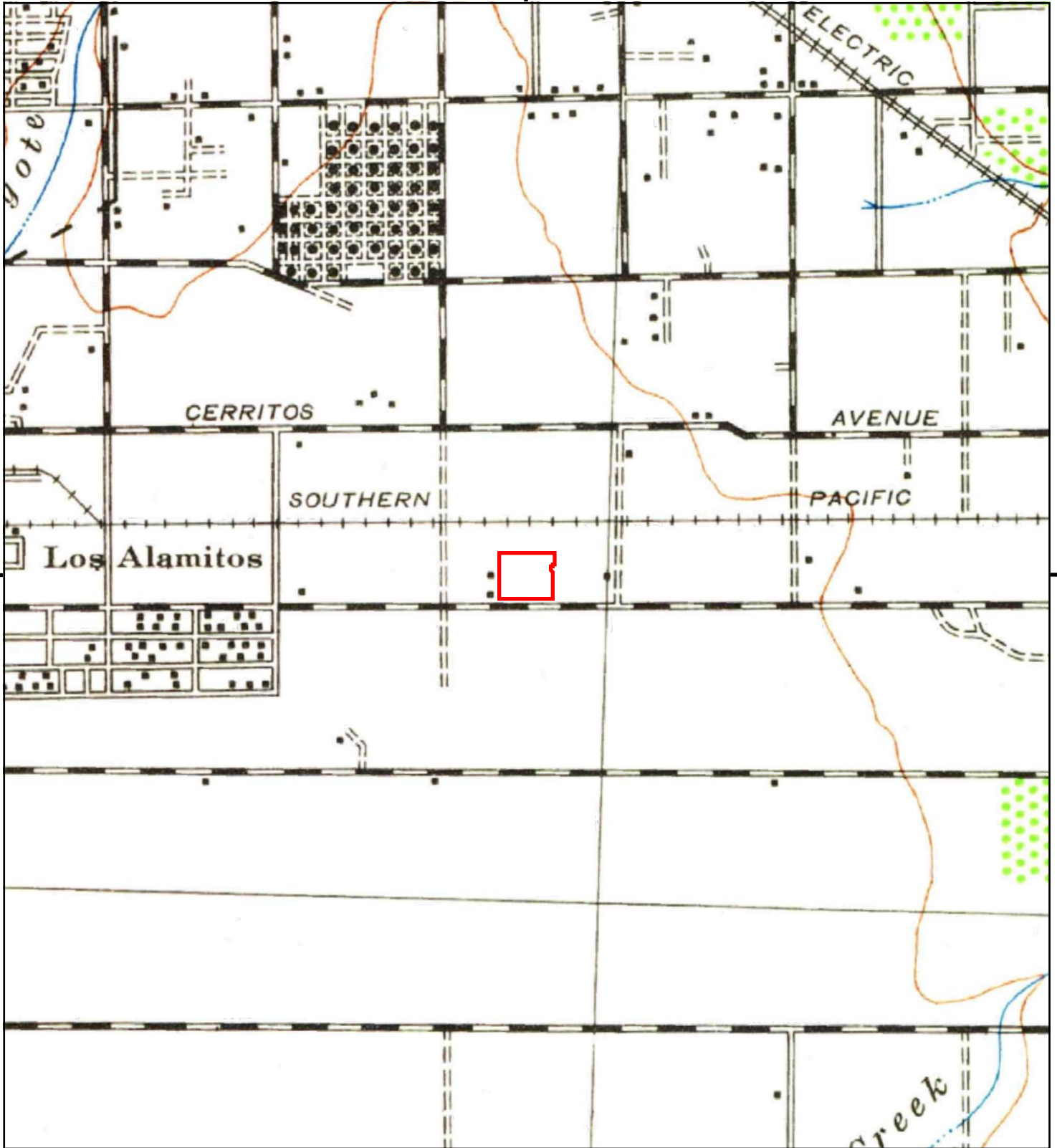
This report includes information from the following map sheet(s).



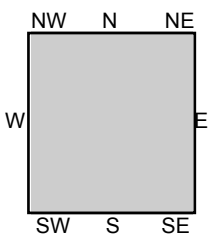
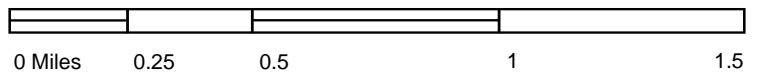
TP, Artesia, 1945, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





This report includes information from the following map sheet(s).

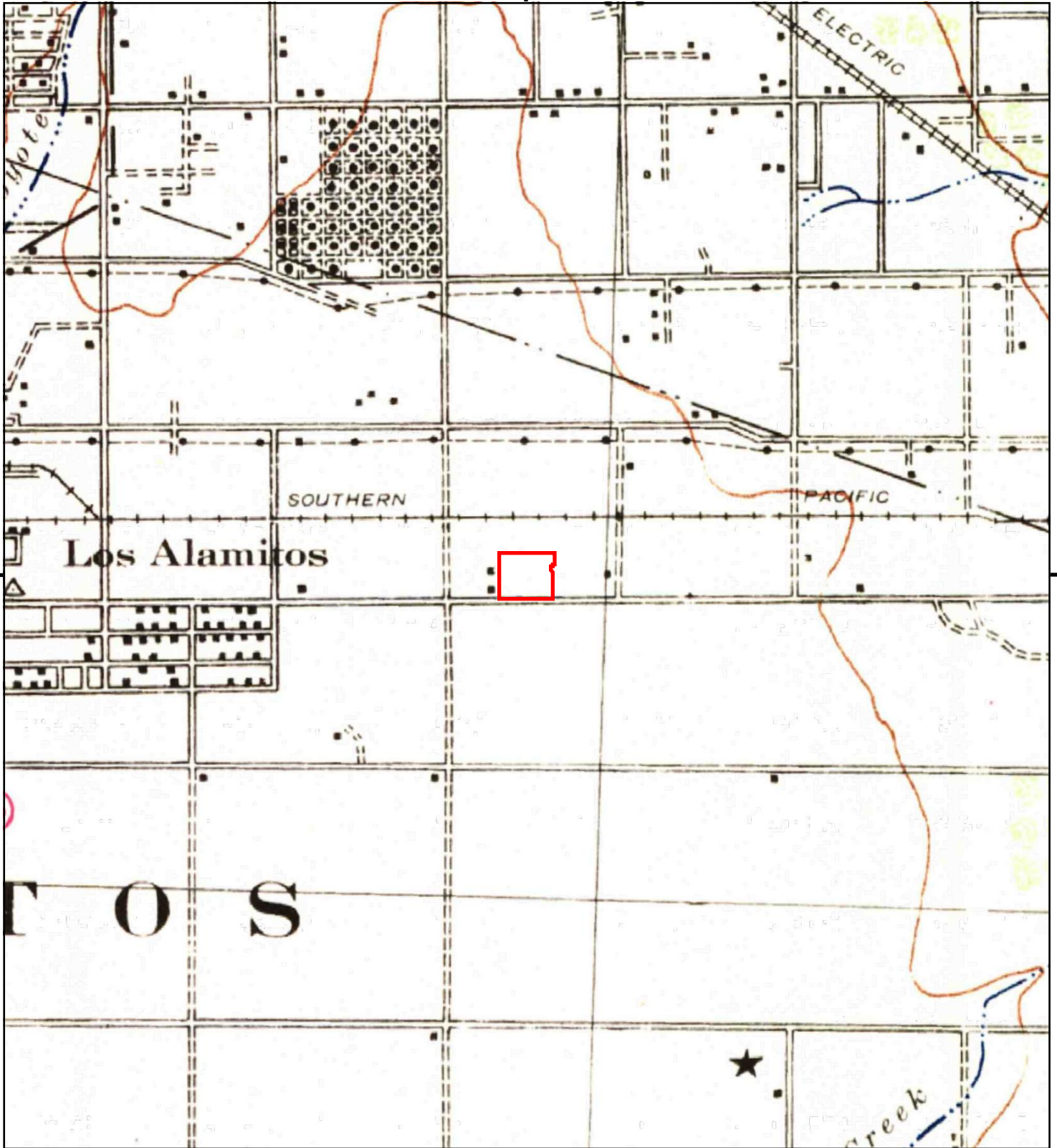


TP, Downey, 1943, 15-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates







This report includes information from the following map sheet(s).



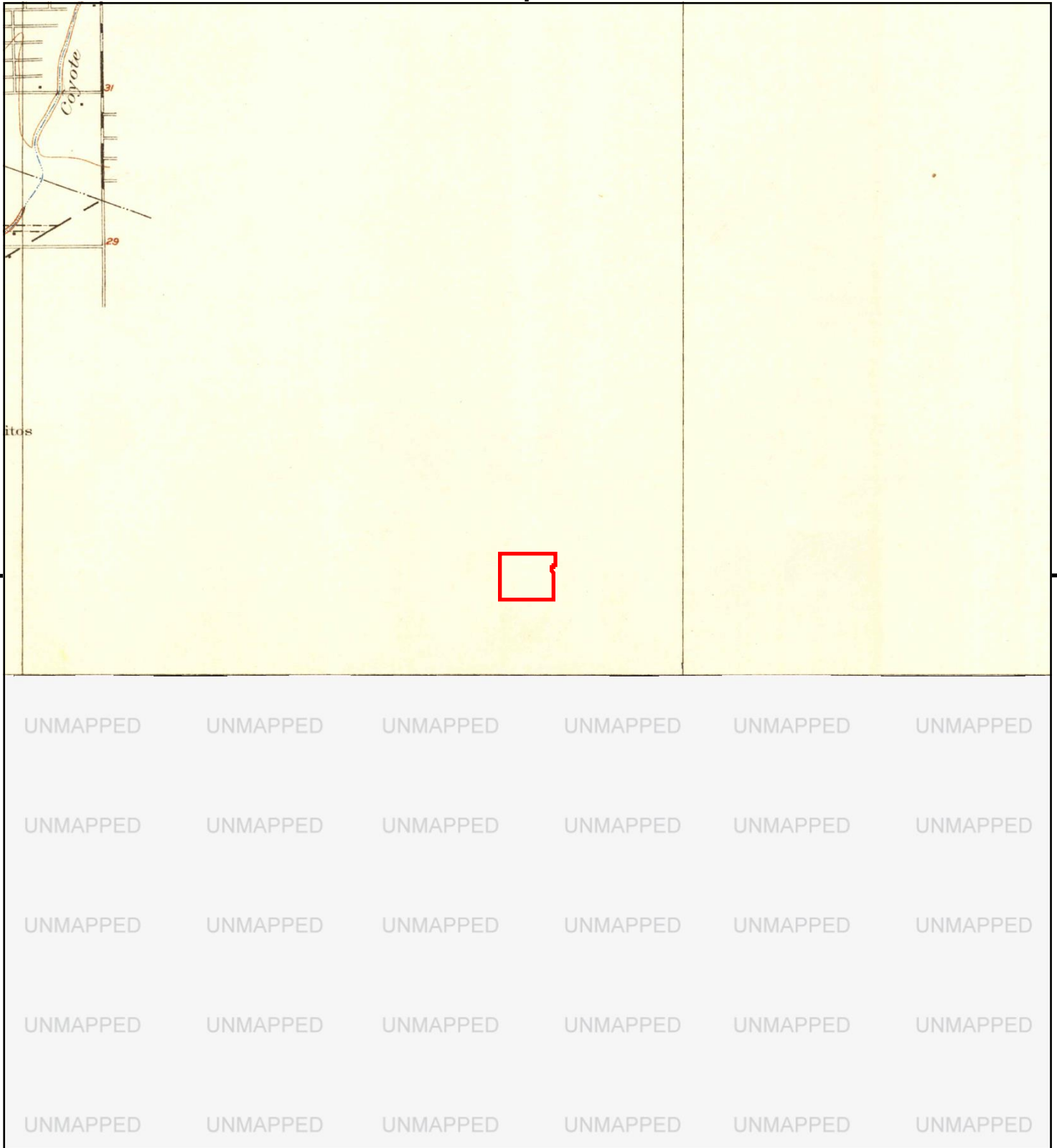
TP, Downey, 1942, 15-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates

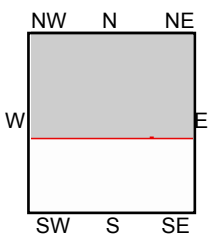
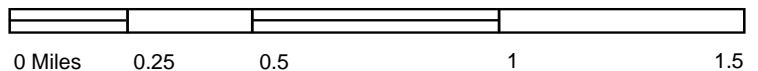








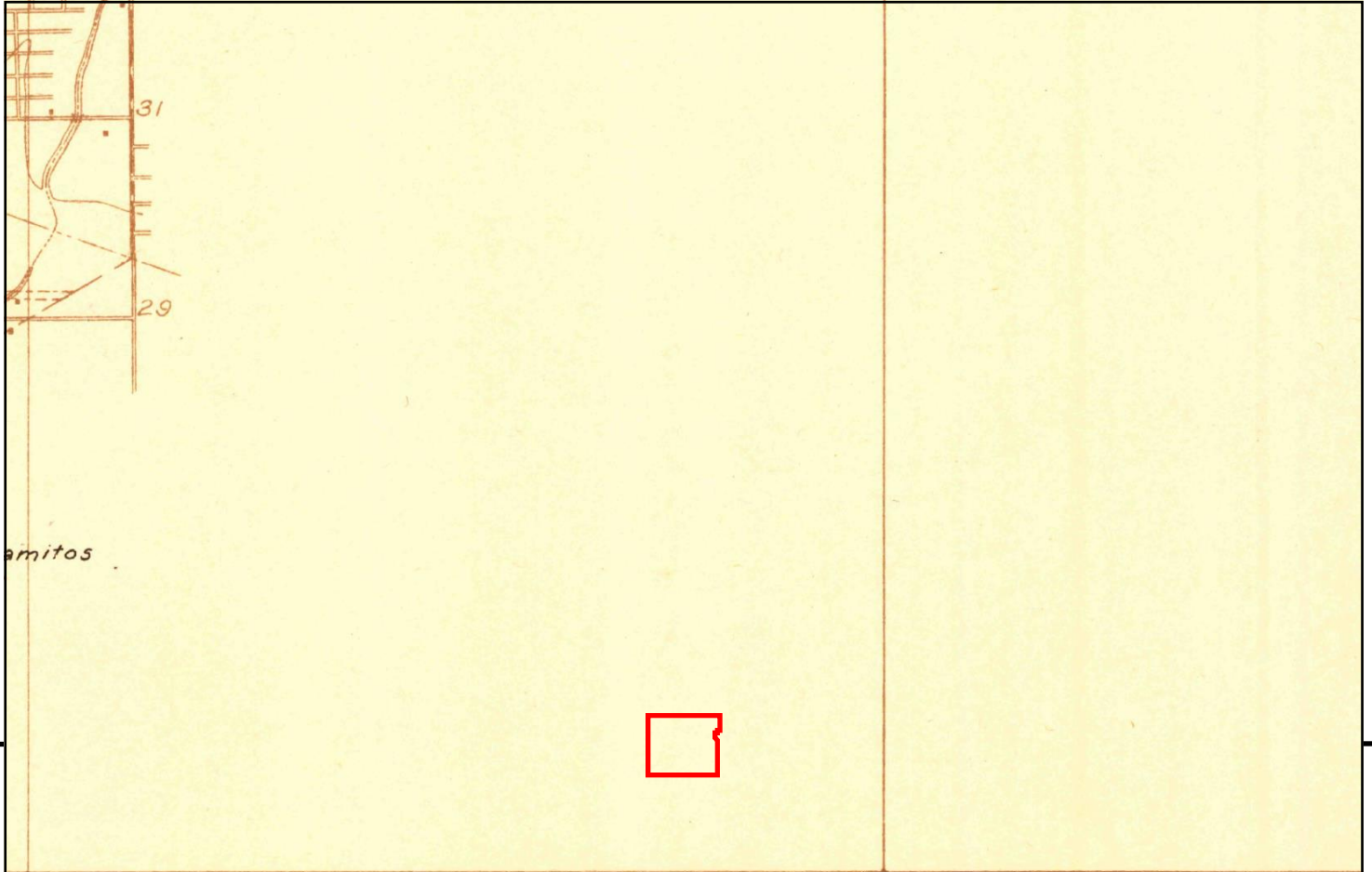
This report includes information from the following map sheet(s).



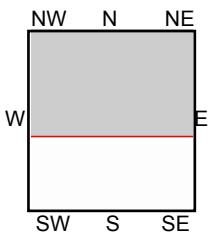
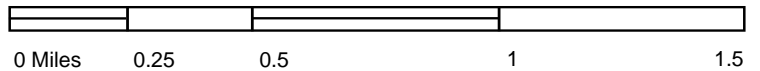
TP, Artesia, 1925, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





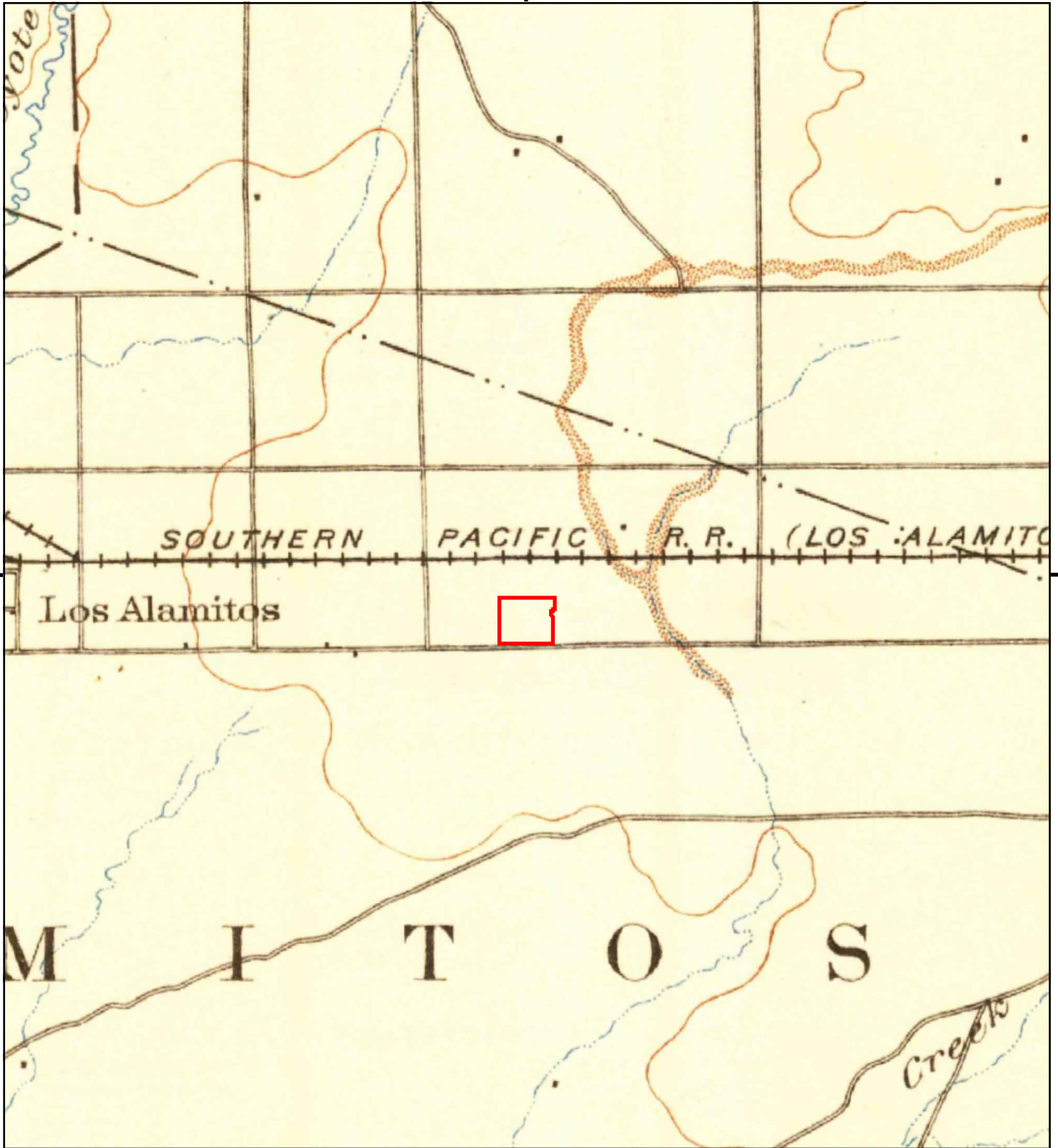
This report includes information from the following map sheet(s).



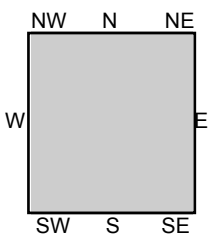
TP, Artesia, 1923, 7.5-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





This report includes information from the following map sheet(s).

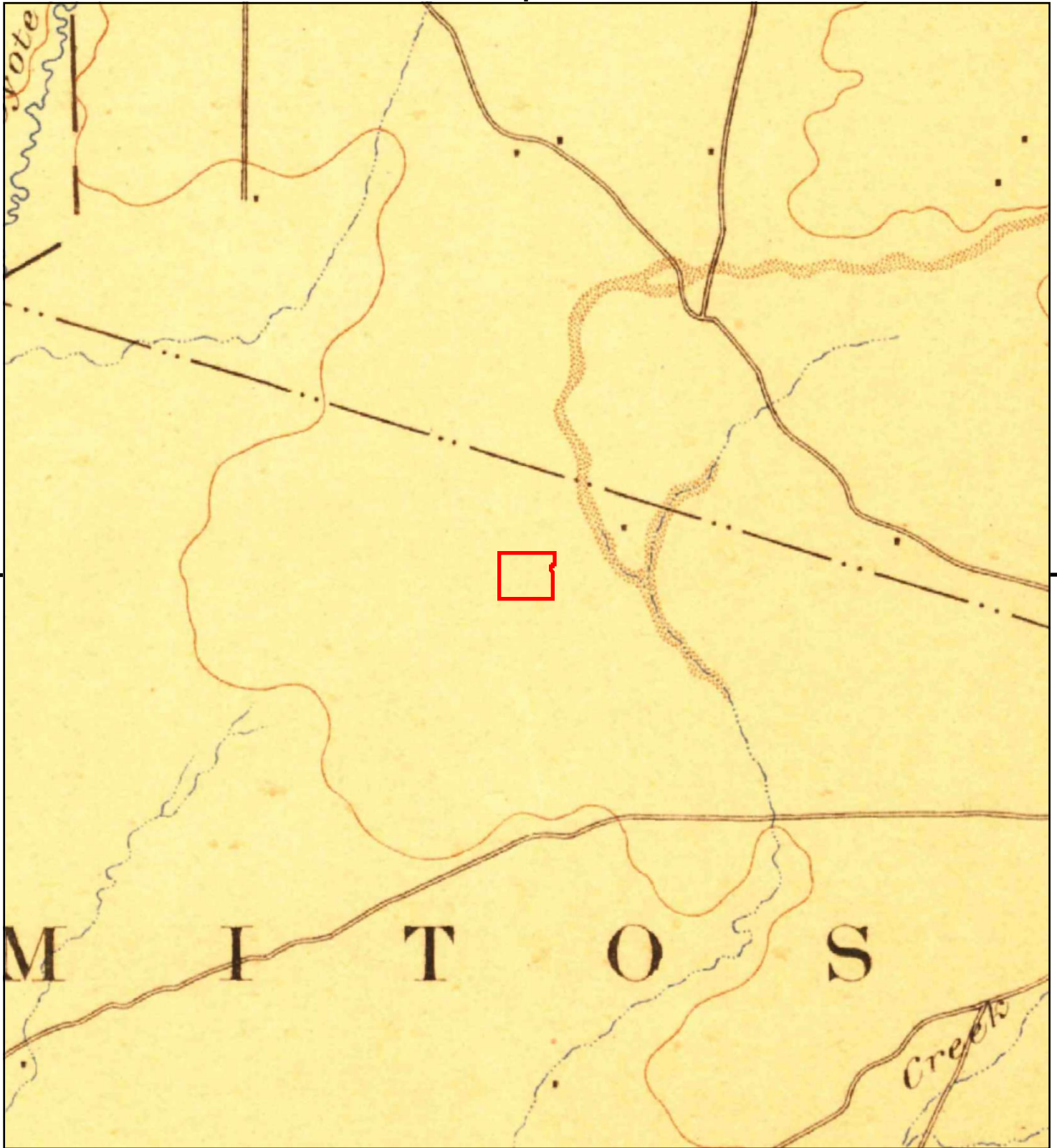


TP, Downey, 1902, 15-minute

SITE NAME: Not Reported  
ADDRESS: Not Reported  
Los Alamitos, CA 90720  
CLIENT: Roux Associates







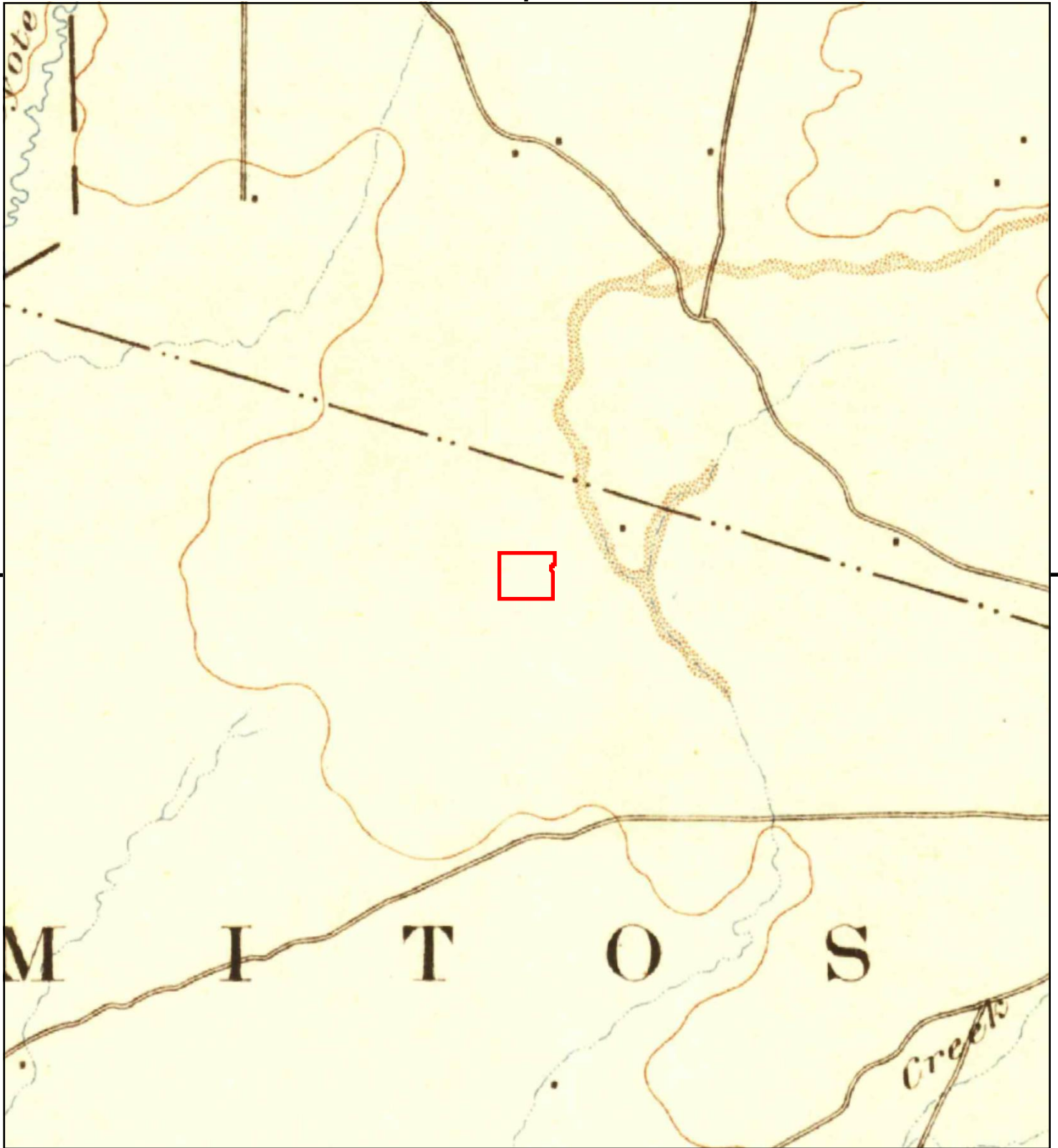
This report includes information from the following map sheet(s).



TP, Downey, 1899, 15-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos, CA 90720  
 CLIENT: Roux Associates





This report includes information from the following map sheet(s).



TP, Downey, 1896, 15-minute

SITE NAME: Not Reported  
 ADDRESS: Not Reported  
 Los Alamos, CA 90720  
 CLIENT: Roux Associates



EDR Radius Map Report with GeoCheck®

**Not Reported**

Not Reported

Los Alamitos, CA 90720

Inquiry Number: 5646263.2s

May 08, 2019

## The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# TABLE OF CONTENTS

<b>SECTION</b>	<b>PAGE</b>
<b>Executive Summary</b> .....	<b>ES1</b>
<b>Overview Map</b> .....	<b>2</b>
<b>Detail Map</b> .....	<b>3</b>
<b>Map Findings Summary</b> .....	<b>4</b>
<b>Map Findings</b> .....	<b>8</b>
<b>Orphan Summary</b> .....	<b>116</b>
<b>Government Records Searched/Data Currency Tracking</b> .....	<b>GR-1</b>

## **GEOCHECK ADDENDUM**

<b>Physical Setting Source Addendum</b> .....	<b>A-1</b>
<b>Physical Setting Source Summary</b> .....	<b>A-2</b>
<b>Physical Setting SSURGO Soil Map</b> .....	<b>A-6</b>
<b>Physical Setting Source Map</b> .....	<b>A-11</b>
<b>Physical Setting Source Map Findings</b> .....	<b>A-13</b>
<b>Physical Setting Source Records Searched</b> .....	<b>PSGR-1</b>

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

### **Disclaimer - Copyright and Trademark Notice**

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 OF 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 or forecast 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.

Copyright 2019 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.



## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### **TARGET PROPERTY INFORMATION**

#### **ADDRESS**

NOT REPORTED  
LOS ALAMITOS, CA 90720

#### **COORDINATES**

Latitude (North):	33.8041780 - 33° 48' 15.04"
Longitude (West):	118.0420850 - 118° 2' 31.50"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	403541.2
UTM Y (Meters):	3740738.2
Elevation:	32 ft. above sea level

### **USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY**

Target Property Map:	5633745 LOS ALAMITOS, CA
Version Date:	2012

### **AERIAL PHOTOGRAPHY IN THIS REPORT**

Portions of Photo from:	20140513
Source:	USDA

# MAPPED SITES SUMMARY

Target Property Address:  
NOT REPORTED  
LOS ALAMITOS, CA 90720

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
<a href="#">Reg</a>	LOS ALAMITOS ARMED F		DOD	Same	1220, 0.231, South
<a href="#">A1</a>	NELSON PAIDDS & SUSA	5122 KATELLA	RCRA NonGen / NLR	Higher	159, 0.030, SW
<a href="#">A2</a>	BARKER ROBERT H	5122 KATELLA AVE	EDR Hist Auto	Higher	159, 0.030, SW
<a href="#">A3</a>	KINCHER GARY	5100 KATELLA	EDR Hist Auto	Higher	226, 0.043, SW
<a href="#">A4</a>	UNION OIL SERVICE ST	5100 KATELLA	LUST, HIST UST	Higher	226, 0.043, SW
<a href="#">A5</a>	INNABI UNION 76 #1	5100 KATELLA AVE	SWEEPS UST, CA FID UST, HAZNET, HIST CORTESE	Higher	226, 0.043, SW
<a href="#">A6</a>	TOSCO #5680	5100 KATELLA AVE	UST	Higher	226, 0.043, SW
<a href="#">A7</a>	SERVICE STATION 5511	5100 KATELLA	HIST UST	Higher	226, 0.043, SW
<a href="#">A8</a>		5100 KATELLA	RCRA-LQG	Higher	226, 0.043, SW
<a href="#">9</a>	TILOS EUROPEAN AUTOH	5300 KATELLA AVE	RCRA NonGen / NLR, FINDS, ECHO, HAZNET	Higher	266, 0.050, SE
<a href="#">B10</a>	RACER CLEANERS	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
<a href="#">B11</a>	ALAMITOS CLEANERS AN	5074 KATELLA AV	EDR Hist Cleaner	Lower	407, 0.077, WSW
<a href="#">B12</a>	ALAMITOS CLEANERS	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
<a href="#">B13</a>	ALAMITOS LAUNDRY & D	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
<a href="#">B14</a>	ALAMITOS CLEANERS	5074-78 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
<a href="#">A15</a>	DUTCH BOY DRY CLEANE	5131 ANTIETAM AVE	EDR Hist Cleaner	Higher	409, 0.077, SSW
<a href="#">C16</a>	K & A IMPORT SERVICE	11061 WINNERS CIRCLE	RCRA-SQG, FINDS, ECHO	Lower	496, 0.094, SSE
<a href="#">C17</a>	K&A IMPORTS	11061 WINNER CIRCLE	RCRA-SQG, HAZNET	Lower	496, 0.094, SSE
<a href="#">B18</a>	LOS ALAMITOS RACE TR	4961 E KATELLA	RCRA-SQG, LUST, SWEEPS UST, CA FID UST, Orange Co....	Lower	549, 0.104, WSW
<a href="#">B19</a>		4961 KATELLA AVE	AST	Lower	549, 0.104, WSW
<a href="#">B20</a>	LOS ALAMITOS RACE CO	4961 KATELLA	LUST, ENF, HIST CORTESE, NPDES, CIWQS	Lower	549, 0.104, WSW
<a href="#">B21</a>	ISLAND CLEANERS	4959 KATELLA AVE	EDR Hist Cleaner	Lower	552, 0.105, WSW
<a href="#">B22</a>	OFFICE DEPOT 2281	4955 KATELLA AVE	RCRA NonGen / NLR	Lower	555, 0.105, WSW
<a href="#">23</a>	CYPRESS GOLF CLUB	4921 KATELLA	LUST, NPDES	Lower	566, 0.107, WNW
<a href="#">D24</a>	REPLANET LLC	5401 KATELLA AVE	SWRCY, CHMIRS	Higher	586, 0.111, ESE
<a href="#">D25</a>	COSTCO WHOLESALE #74	5401 KATELLA AVE	UST	Higher	586, 0.111, ESE
<a href="#">C26</a>	ENVIROCON INC	11082 WINNERS CIRCLE	RCRA NonGen / NLR, FINDS, ECHO	Lower	647, 0.123, SSE
<a href="#">27</a>	GEORGE TOWNSHEND SFR	11132 MINDORA STREET	RCRA NonGen / NLR	Lower	766, 0.145, South
<a href="#">E28</a>	COSTCO WHOLESALE #74	10901 WALKER ST	UST	Higher	896, 0.170, ENE
<a href="#">E29</a>	COSTCO WHOLESALE NO	5401 KATELLA AVE	RCRA-LQG, HAZNET	Higher	896, 0.170, ENE
<a href="#">F30</a>	COOLANT MANAGEMENT S	11052 VIA EL MERCADO	RCRA NonGen / NLR	Higher	913, 0.173, SE
<a href="#">F31</a>	COOLANT MANAGEMENT S	11052 VIA EL MERCADO	AST	Higher	913, 0.173, SE
<a href="#">F32</a>		11052 VIA EL MERCADO	AST	Higher	913, 0.173, SE
<a href="#">33</a>	LTP MODERN MACHINE I	10900 WALKER ST	RCRA NonGen / NLR	Higher	1183, 0.224, ENE
<a href="#">G34</a>	ROBERT KAHN PROPERTY	5001 CERRITOS	LUST	Higher	2073, 0.393, NNW
<a href="#">G35</a>	UNOCAL #5330	5001 BALL RD	SWEEPS UST, CA FID UST, HIST CORTESE	Higher	2073, 0.393, NNW
<a href="#">36</a>	ORANGE COUNTY FIRE S	4991 CERRITOS	LUST, SWEEPS UST, CA FID UST, HIST CORTESE	Higher	2182, 0.413, NNW
<a href="#">37</a>	R & D BLDG PARCEL 7	5730 KATELLA AVE	ENVIROSTOR, HAZNET, CIWQS	Higher	2241, 0.424, ESE
<a href="#">H38</a>	VESPER CORP	4411 KATELLA AV	ENVIROSTOR, EMI, HAZNET, CIWQS	Lower	3609, 0.684, West

MAPPED SITES SUMMARY

Target Property Address:  
NOT REPORTED  
LOS ALAMITOS, CA 90720

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
<a href="#">H39</a>	ARROWHEAD PRODUCTS	4411 KATELLA AVENUE	ENVIROSTOR	Lower	3609, 0.684, West
<a href="#">40</a>	JOINT FORCES TRAININ	4250 CONSTITUTION AV	RESPONSE, ENVIROSTOR, LUST	Lower	3628, 0.687, WSW
<a href="#">41</a>	THE BOEING COMPANY	10800 VALLEY VIEW ST	ENVIROSTOR, Orange Co. Industrial Site, EMI,...	Higher	4017, 0.761, East
<a href="#">I42</a>	LOS ALAMITOS RAD BOM		ENVIROSTOR	Lower	5050, 0.956, SW
<a href="#">I43</a>	NAS LOS ALAMITOS		ENVIROSTOR	Lower	5050, 0.956, SW

## EXECUTIVE SUMMARY

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### 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

#### ***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-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

## EXECUTIVE SUMMARY

### ***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

CPS-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***

VCP..... Voluntary Cleanup Program Properties

INDIAN VCP..... Voluntary Cleanup Priority Listing

### ***State and tribal Brownfields sites***

BROWNFIELDS..... Considered Brownfields Sites Listing

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

### ***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT..... Waste Management Unit Database

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

CERS HAZ WASTE..... CERS HAZ WASTE

Toxic Pits..... Toxic Pits Cleanup Act Sites

US CDL..... National Clandestine Laboratory Register

PFAS..... PFAS Contamination Site Location Listing

### ***Local Lists of Registered Storage Tanks***

CERS TANKS..... California Environmental Reporting System (CERS) Tanks

### ***Local Land Records***

LIENS..... Environmental Liens Listing

## EXECUTIVE SUMMARY

LIENS 2..... CERCLA Lien Information  
 DEED..... Deed Restriction Listing

### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System  
 CHMIRS..... California Hazardous Material Incident Report System  
 LDS..... Land Disposal Sites Listing  
 MCS..... Military Cleanup Sites Listing  
 Orange Co. Industrial Site..... List of Industrial Site Cleanups  
 SPILLS 90..... SPILLS 90 data from FirstSearch

### ***Other Ascertainable Records***

FUDS..... Formerly Used Defense Sites  
 SCR 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  
 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  
 FINDS..... Facility Index System/Facility Registry System  
 DOCKET HWC..... Hazardous Waste Compliance Docket Listing  
 ECHO..... Enforcement & Compliance History Information  
 UXO..... Unexploded Ordnance Sites  
 FUELS PROGRAM..... EPA Fuels Program Registered Listing  
 CA BOND EXP. PLAN..... Bond Expenditure Plan  
 Cortese..... "Cortese" Hazardous Waste & Substances Sites List  
 CUPA Listings..... CUPA Resources List  
 EMI..... Emissions Inventory Data  
 ENF..... Enforcement Action Listing

## EXECUTIVE SUMMARY

Financial Assurance.....	Financial Assurance Information Listing
HAZNET.....	Facility and Manifest Data
ICE.....	ICE
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing
NPDES.....	NPDES Permits Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
Notify 65.....	Proposition 65 Records
UIC.....	UIC Listing
UIC GEO.....	UIC GEO (GEOTRACKER)
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
MILITARY PRIV SITES.....	MILITARY PRIV SITES (GEOTRACKER)
PROJECT.....	PROJECT (GEOTRACKER)
WDR.....	Waste Discharge Requirements Listing
CIWQS.....	California Integrated Water Quality System
CERS.....	CERS
WIP.....	Well Investigation Program Case List
NON-CASE INFO.....	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS.....	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS.....	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT.....	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ.....	Well Stimulation Project (GEOTRACKER)

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP..... EDR Proprietary Manufactured Gas Plants

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF..... Recovered Government Archive Solid Waste Facilities List  
 RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

## EXECUTIVE SUMMARY

### STANDARD ENVIRONMENTAL RECORDS

#### *Federal RCRA generators list*

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/25/2019 has revealed that there are 2 RCRA-LQG sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported EPA ID:: CAL000169176	5100 KATELLA	SW 0 - 1/8 (0.043 mi.)	A8	20
<b>COSTCO WHOLESALE NO</b> EPA ID:: CAR000160200	<b>5401 KATELLA AVE</b>	<b>ENE 1/8 - 1/4 (0.170 mi.)</b>	<b>E29</b>	<b>66</b>

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/25/2019 has revealed that there are 3 RCRA-SQG sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>K &amp; A IMPORT SERVICE</b> EPA ID:: CAD981445026	<b>11061 WINNERS CIRCLE</b>	<b>SSE 0 - 1/8 (0.094 mi.)</b>	<b>C16</b>	<b>27</b>
<b>K&amp;A IMPORTS</b> EPA ID:: CAD981443161	<b>11061 WINNER CIRCLE</b>	<b>SSE 0 - 1/8 (0.094 mi.)</b>	<b>C17</b>	<b>28</b>
<b>LOS ALAMITOS RACE TR</b> EPA ID:: CAD981684483	<b>4961 E KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B18</b>	<b>30</b>

#### *State- and tribal - equivalent NPL*

RESPONSE: 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.

A review of the RESPONSE list, as provided by EDR, has revealed that there is 1 RESPONSE site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>JOINT FORCES TRAININ</b> Database: RESPONSE, Date of Government Version: 01/28/2019	<b>4250 CONSTITUTION AV</b>	<b>WSW 1/2 - 1 (0.687 mi.)</b>	<b>40</b>	<b>105</b>



## EXECUTIVE SUMMARY

Status: No Further Action  
Facility Id: 30490037

### 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 identifies 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 01/28/2019 has revealed that there are 7 ENVIROSTOR sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>R &amp; D BLDG PARCEL 7</b> Facility Id: 60002729 Status: Active	<b>5730 KATELLA AVE</b>	<b>ESE 1/4 - 1/2 (0.424 mi.)</b>	<b>37</b>	<b>90</b>
<b>THE BOEING COMPANY</b> Facility Id: 30990005 Status: Refer: 1248 Local Agency	<b>10800 VALLEY VIEW ST</b>	<b>E 1/2 - 1 (0.761 mi.)</b>	<b>41</b>	<b>110</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>VESPER CORP</b> Facility Id: 30370008 Status: Refer: Local Agency	<b>4411 KATELLA AV</b>	<b>W 1/2 - 1 (0.684 mi.)</b>	<b>H38</b>	<b>93</b>
<b>ARROWHEAD PRODUCTS</b> Facility Id: 60002104 Status: Active	<b>4411 KATELLA AVENUE</b>	<b>W 1/2 - 1 (0.684 mi.)</b>	<b>H39</b>	<b>104</b>
<b>JOINT FORCES TRAININ</b> Facility Id: 30490037 Status: No Further Action	<b>4250 CONSTITUTION AV</b>	<b>WSW 1/2 - 1 (0.687 mi.)</b>	<b>40</b>	<b>105</b>
<b>LOS ALAMITOS RAD BOM</b> Facility Id: 80000425 Status: Inactive - Needs Evaluation		<b>SW 1/2 - 1 (0.956 mi.)</b>	<b>I42</b>	<b>113</b>
<b>NAS LOS ALAMITOS</b> Facility Id: 80000646 Status: Inactive - Needs Evaluation		<b>SW 1/2 - 1 (0.956 mi.)</b>	<b>I43</b>	<b>115</b>

## EXECUTIVE SUMMARY

### State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 6 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>UNION OIL SERVICE ST</b> Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: ORANGE CO. LUST, Date of Government Version: 01/02/2019 Database: LUST, Date of Government Version: 12/10/2018 Status: Completed - Case Closed Facility Id: 87UT114 Facility Status: Remedial action (cleanup) Underway Global Id: T0605900471 Global ID: T0605900471	<b>5100 KATELLA</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A4</b>	<b>10</b>
<b>ROBERT KAHN PROPERTY</b> Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: ORANGE CO. LUST, Date of Government Version: 01/02/2019 Database: LUST, Date of Government Version: 12/10/2018 Status: Completed - Case Closed Facility Id: 91UT095 Facility Status: Case Closed Global Id: T0605901416 Global ID: T0605901416	<b>5001 CERRITOS</b>	<b>NNW 1/4 - 1/2 (0.393 mi.)</b>	<b>G34</b>	<b>81</b>
<b>ORANGE COUNTY FIRE S</b> Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: ORANGE CO. LUST, Date of Government Version: 01/02/2019 Database: LUST, Date of Government Version: 12/10/2018 Status: Completed - Case Closed Facility Id: 97UT031 Facility Status: Case Closed Global Id: T0605902092 Global ID: T0605902092	<b>4991 CERRITOS</b>	<b>NNW 1/4 - 1/2 (0.413 mi.)</b>	<b>36</b>	<b>86</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>LOS ALAMITOS RACE TR</b> Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0605900836 Global ID: T0605902069	<b>4961 E KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B18</b>	<b>30</b>
<b>LOS ALAMITOS RACE CO</b> Database: ORANGE CO. LUST, Date of Government Version: 01/02/2019 Database: LUST, Date of Government Version: 12/10/2018 Status: Completed - Case Closed Facility Id: 88UT153 Facility Id: 97UT016 Global Id: T0605902069 Global ID: T0605900836	<b>4961 KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B20</b>	<b>39</b>
<b>CYPRESS GOLF CLUB</b> Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: ORANGE CO. LUST, Date of Government Version: 01/02/2019 Database: LUST, Date of Government Version: 12/10/2018	<b>4921 KATELLA</b>	<b>WNW 0 - 1/8 (0.107 mi.)</b>	<b>23</b>	<b>50</b>

## EXECUTIVE SUMMARY

Status: Completed - Case Closed  
 Facility Id: 04UT011  
 Facility Status: Preliminary site assessment underway  
 Global Id: T0605997341  
 Global ID: T0605997341

### 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.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
TOSCO #5680 Database: ORANGE CO. UST, Date of Government Version: 01/02/2019 Database: UST, Date of Government Version: 12/10/2018 Facility Id: FA0051673 Facility Id: 18767	5100 KATELLA AVE	SW 0 - 1/8 (0.043 mi.)	A6	19
COSTCO WHOLESALE #74 Database: UST, Date of Government Version: 12/10/2018 Facility Id: FA0064582	5401 KATELLA AVE	ESE 0 - 1/8 (0.111 mi.)	D25	61
COSTCO WHOLESALE #74 Database: ORANGE CO. UST, Date of Government Version: 01/02/2019 Database: UST, Date of Government Version: 12/10/2018 Facility Id: FA0045719 Facility Id: FA0045719	10901 WALKER ST	ENE 1/8 - 1/4 (0.170 mi.)	E28	66

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there are 3 AST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
COOLANT MANAGEMENT S Database: AST, Date of Government Version: 07/06/2016	11052 VIA EL MERCADO	SE 1/8 - 1/4 (0.173 mi.)	F31	78
Not reported Database: AST, Date of Government Version: 07/06/2016	11052 VIA EL MERCADO	SE 1/8 - 1/4 (0.173 mi.)	F32	79
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported Database: AST, Date of Government Version: 07/06/2016	4961 KATELLA AVE	WSW 0 - 1/8 (0.104 mi.)	B19	38

## EXECUTIVE SUMMARY

### ADDITIONAL ENVIRONMENTAL RECORDS

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 03/11/2019 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>REPLANET LLC</b> Cert Id: RC218172.001	<b>5401 KATELLA AVE</b>	<b>ESE 0 - 1/8 (0.111 mi.)</b>	<b>D24</b>	<b>60</b>

#### ***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.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>INNABI UNION 76 #1</b> Status: A Tank Status: A Comp Number: 136	<b>5100 KATELLA AVE</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A5</b>	<b>16</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>LOS ALAMITOS RACE TR</b> Status: A Tank Status: A Comp Number: 5314	<b>4961 E KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B18</b>	<b>30</b>

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 2 HIST UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>UNION OIL SERVICE ST</b> Facility Id: 00000056204	<b>5100 KATELLA</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A4</b>	<b>10</b>
<b>SERVICE STATION 5511</b> Facility Id: 00000008023	<b>5100 KATELLA</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A7</b>	<b>19</b>

## EXECUTIVE SUMMARY

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>INNABI UNION 76 #1</b> Facility Id: 30000665 Status: A	<b>5100 KATELLA AVE</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A5</b>	<b>16</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>LOS ALAMITOS RACE TR</b> Facility Id: 30000858 Status: A	<b>4961 E KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B18</b>	<b>30</b>

### Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there are 7 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
NELSON PAIDDS & SUSA EPA ID:: CAL000259066	5122 KATELLA	SW 0 - 1/8 (0.030 mi.)	A1	8
<b>TILOS EUROPEAN AUTOH</b> EPA ID:: CAR000078394	<b>5300 KATELLA AVE</b>	<b>SE 0 - 1/8 (0.050 mi.)</b>	<b>9</b>	<b>21</b>
COOLANT MANAGEMENT S EPA ID:: CAL000229936	11052 VIA EL MERCADO	SE 1/8 - 1/4 (0.173 mi.)	F30	77
LTP MODERN MACHINE I EPA ID:: CAL000420984	10900 WALKER ST	ENE 1/8 - 1/4 (0.224 mi.)	33	80
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
OFFICE DEPOT 2281 EPA ID:: CAL000420839	4955 KATELLA AVE	WSW 0 - 1/8 (0.105 mi.)	B22	49
<b>ENVIROCON INC</b> EPA ID:: CAD983586744	<b>11082 WINNERS CIRCLE</b>	<b>SSE 0 - 1/8 (0.123 mi.)</b>	<b>C26</b>	<b>62</b>
GEORGE TOWNSHEND SFR EPA ID:: CAC002982790	11132 MINDORA STREET	S 1/8 - 1/4 (0.145 mi.)	27	65

## EXECUTIVE SUMMARY

**DOD:** 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.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LOS ALAMITOS ARMED F		S 1/8 - 1/4 (0.231 mi.)	0	8

**DRYCLEANERS:** 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 cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the DRYCLEANERS list, as provided by EDR, has revealed that there are 4 DRYCLEANERS sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
RACER CLEANERS Database: DRYCLEANERS, Date of Government Version: 12/13/2018 Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019 EPA Id: CAL000268799 EPA Id: CAL000345982	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B10	23
ALAMITOS CLEANERS Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B12	25
ALAMITOS LAUNDRY & D Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B13	26
ALAMITOS CLEANERS Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019	5074-78 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B14	26

**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 5 HIST CORTESE sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>INNABI UNION 76 #1</b> Reg Id: 083000585T	<b>5100 KATELLA AVE</b>	<b>SW 0 - 1/8 (0.043 mi.)</b>	<b>A5</b>	<b>16</b>
<b>UNOCAL #5330</b> Reg Id: 083002183T Reg Id: 083001897T	<b>5001 BALL RD</b>	<b>NNW 1/4 - 1/2 (0.393 mi.)</b>	<b>G35</b>	<b>83</b>
<b>ORANGE COUNTY FIRE S</b> Reg Id: 083003072T	<b>4991 CERRITOS</b>	<b>NNW 1/4 - 1/2 (0.413 mi.)</b>	<b>36</b>	<b>86</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>LOS ALAMITOS RACE TR</b>	<b>4961 E KATELLA</b>	<b>WSW 0 - 1/8 (0.104 mi.)</b>	<b>B18</b>	<b>30</b>

## EXECUTIVE SUMMARY

Reg Id: 083003034T

**LOS ALAMITOS RACE CO**

Reg Id: 083001061T

**4961 KATELLA**

**WSW 0 - 1/8 (0.104 mi.) B20**

**39**

### 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 are 2 EDR Hist Auto sites within approximately 0.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BARKER ROBERT H	5122 KATELLA AVE	SW 0 - 1/8 (0.030 mi.)	A2	9
KINCHER GARY	5100 KATELLA	SW 0 - 1/8 (0.043 mi.)	A3	10

EDR Hist Cleaner: 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.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 3 EDR Hist Cleaner sites within approximately 0.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
DUTCH BOY DRY CLEANER	5131 ANTIETAM AVE	SSW 0 - 1/8 (0.077 mi.)	A15	27
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ALAMITOS CLEANERS AN	5074 KATELLA AV	WSW 0 - 1/8 (0.077 mi.)	B11	25
ISLAND CLEANERS	4959 KATELLA AVE	WSW 0 - 1/8 (0.105 mi.)	B21	48

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name

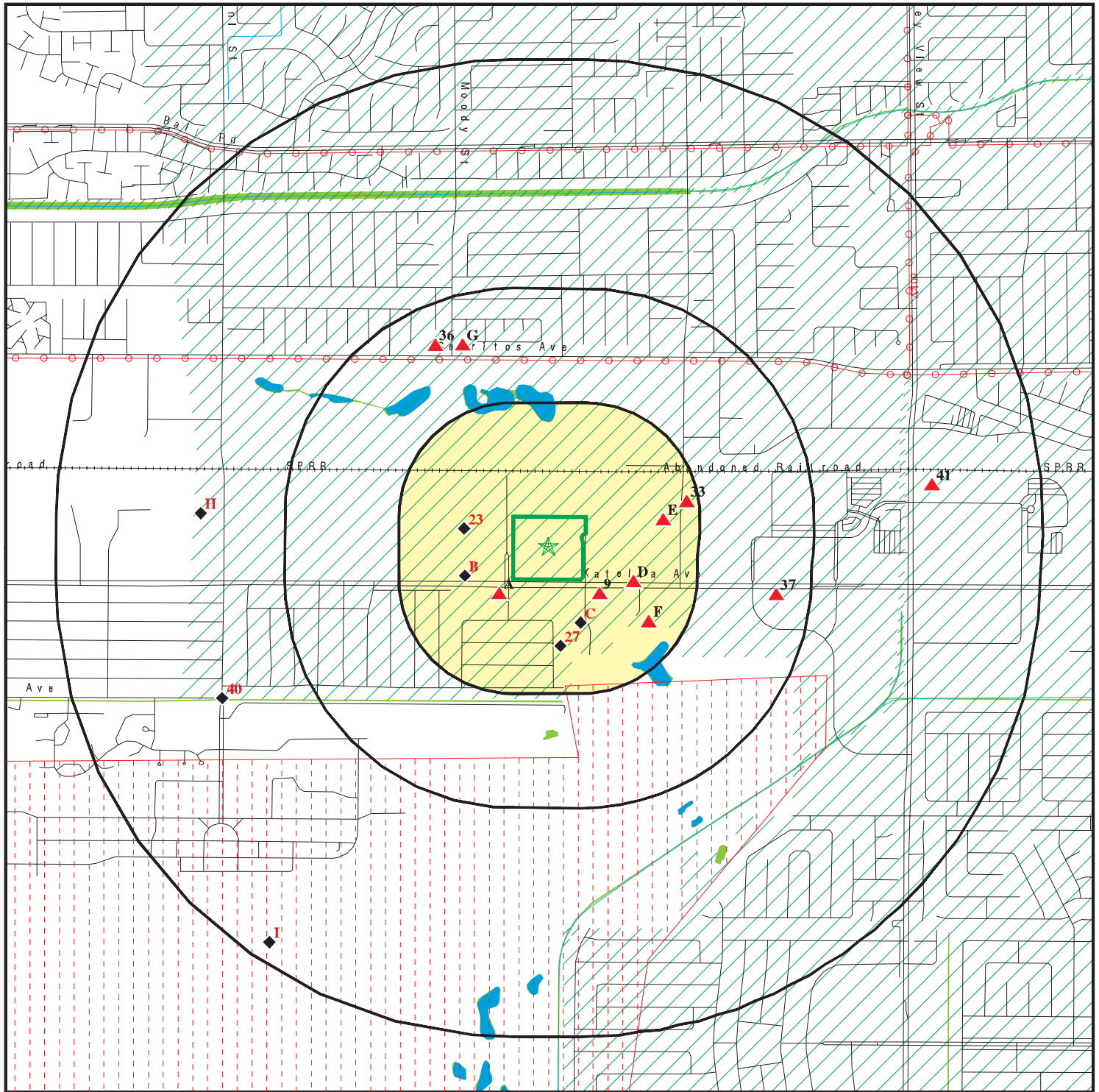
BENJAMIN B & MARIA L BARAJAS DBA

Database(s)

DRYCLEANERS



# OVERVIEW MAP - 5646263.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

0 1/4 1/2 1 Miles

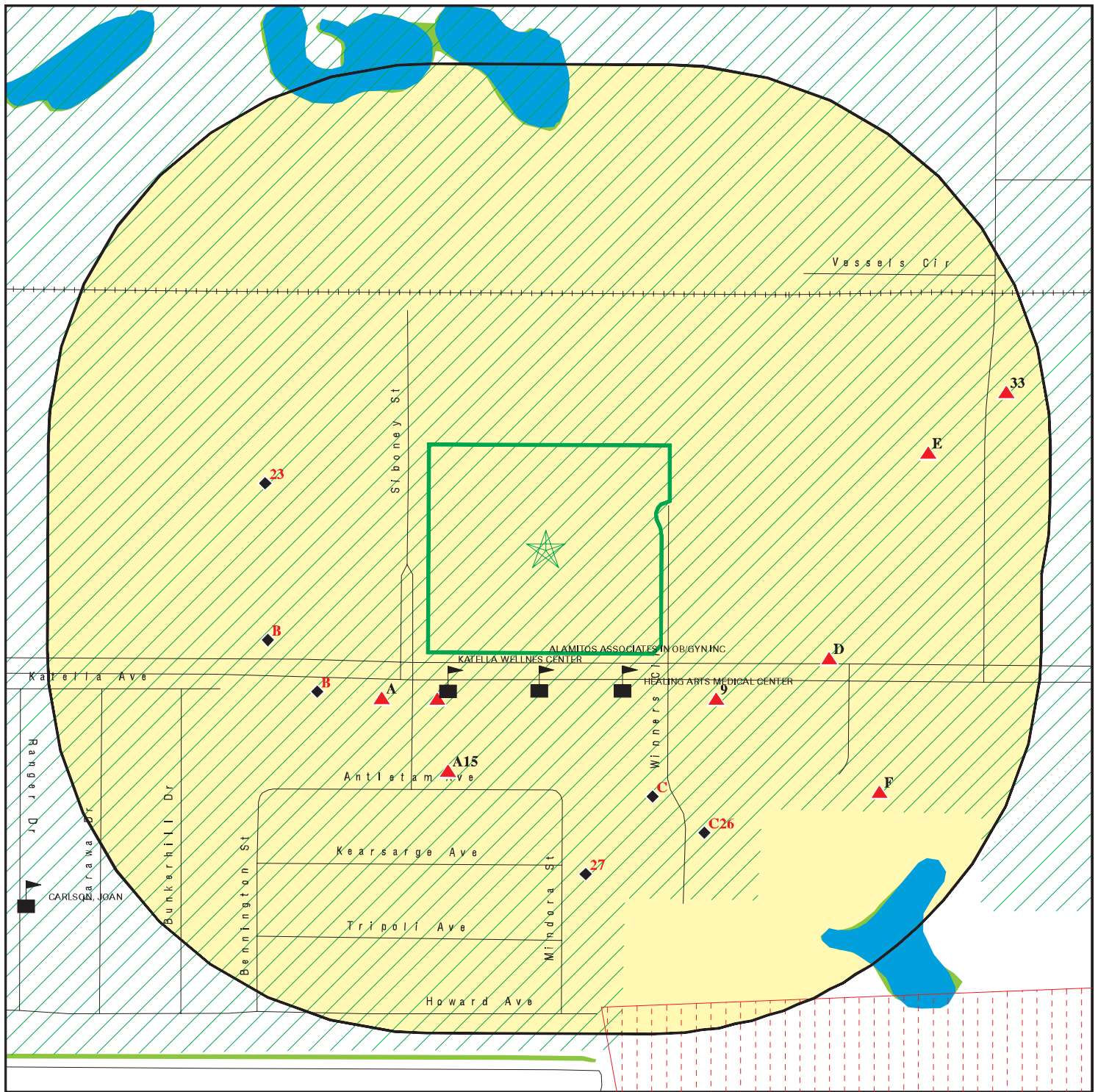


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Not Reported  
ADDRESS: Not Reported  
Los Alamitos CA 90720  
LAT/LONG: 33.804178 / 118.042085

CLIENT: Roux Associates  
CONTACT: Angela Truong  
INQUIRY #: 5646263.2s  
DATE: May 08, 2019 4:35 pm

# DETAIL MAP - 5646263.2S



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

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

0 1/16 1/8 1/4 Miles



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: Not Reported  
ADDRESS: Not Reported  
Los Alamitos CA 90720  
LAT/LONG: 33.804178 / 118.042085

CLIENT: Roux Associates  
CONTACT: Angela Truong  
INQUIRY #: 5646263.2s  
DATE: May 08, 2019 4:37 pm

## 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
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		1	1	NR	NR	NR	2
RCRA-SQG	0.250		3	0	NR	NR	NR	3
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
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
<b><i>Federal ERNS list</i></b>								
ERNS	0.001		0	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent NPL</i></b>								
RESPONSE	1.000		0	0	0	1	NR	1
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
ENVIROSTOR	1.000		0	0	1	6	NR	7
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		4	0	2	NR	NR	6

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
<b>State and tribal registered storage tank lists</b>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		2	1	NR	NR	NR	3
AST	0.250		1	2	NR	NR	NR	3
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		1	0	0	NR	NR	1
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.001		0	NR	NR	NR	NR	0
<b>Local Lists of Registered Storage Tanks</b>								
SWEEPS UST	0.250		2	0	NR	NR	NR	2
HIST UST	0.250		2	0	NR	NR	NR	2
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		2	0	NR	NR	NR	2
<b>Local Land Records</b>								
LIENS	0.001		0	NR	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
Orange Co. Industrial Site	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		4	3	NR	NR	NR	7
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	1	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0

## 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
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		4	0	NR	NR	NR	4
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		3	0	2	NR	NR	5
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		2	NR	NR	NR	NR	2
EDR Hist Cleaner	0.125		3	NR	NR	NR	NR	3

### **EDR RECOVERED GOVERNMENT ARCHIVES**

#### ***Exclusive Recovered Govt. Archives***

RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0

- Totals --		0	34	8	5	7	0	54
-------------	--	---	----	---	---	---	---	----

#### **NOTES:**

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**DOD**  
**Region**  
**South**  
**1/8-1/4**  
**1220 ft.**

**LOS ALAMITOS ARMED FORCES RESERVE CENTER**  
**LOS ALAMITOS ARMED FORCES (County), CA**

**DOD** **CUSA143754**  
**N/A**

**DOD:**

Feature 1: Army DOD  
Feature 2: Not reported  
Feature 3: Not reported  
URL: Not reported  
Name 1: Los Alamitos Armed Forces Reserve Center  
Name 2: Not reported  
Name 3: Not reported  
State: CA  
DOD Site: Yes  
Tile name: CAORANGE

**A1**  
**SW**  
**< 1/8**  
**0.030 mi.**  
**159 ft.**

**NELSON PAIDDS & SUSAN ISHIOKA DDS MS INC**  
**5122 KATELLA**  
**LOS ALAMITOS, CA 90720**  
**Site 1 of 9 in cluster A**

**RCRA NonGen / NLR** **1024804597**  
**CAL000259066**

**Relative:**  
**Higher**

**RCRA NonGen / NLR:**

**Actual:**  
**32 ft.**

Date form received by agency: 09/11/2002  
Facility name: NELSON PAIDDS & SUSAN ISHIOKA DDS MS INC  
Facility address: 5122 KATELLA  
LOS ALAMITOS, CA 90720  
EPA ID: CAL000259066  
Mailing address: 5122 KATELLA STE 112  
LOS ALAMITOS, CA 90720-2837  
Contact: DR PAI  
Contact address: 5122 KATELLA AVE STE 112  
LOS ALAMITOS, CA 90720  
Contact country: Not reported  
Contact telephone: 562-493-2807  
Contact email: NELSONPAIDDS@YAHOO.COM  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

**Owner/Operator Summary:**

Owner/operator name: NELSON PAI DDS & SUSAN ISHIKA DDS M  
Owner/operator address: 5122 KATELLA AVE STE 112  
LOS ALAMITOS, CA 90720  
Owner/operator country: Not reported  
Owner/operator telephone: 562-493-2807  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: DR PAI  
Owner/operator address: 5122 KATELLA AVE STE 112  
LOS ALAMITOS, CA 90720

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**NELSON PAIDDS & SUSAN ISHIOKA DDS MS INC (Continued)**

**1024804597**

Owner/operator country: Not reported  
Owner/operator telephone: 562-493-2807  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: Yes  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**A2  
SW  
< 1/8  
0.030 mi.  
159 ft.**

**BARKER ROBERT H  
5122 KATELLA AVE  
LOS ALAMITOS, CA 90720**

**EDR Hist Auto 1021609418  
N/A**

**Site 2 of 9 in cluster A**

**Relative:  
Higher**

EDR Hist Auto

**Actual:  
32 ft.**

Year: Name:  
1969 BARKER ROBERT H  
1970 BARKER ROBERT H  
1971 BARKER ROBERT H  
1972 BARKER ROBERT H  
1973 BARKER ROBERT H  
1974 BARKER ROBERT H  
1975 BARKER ROBERT H  
1976 BARKER ROBERT H  
1977 BARKER ROBERT H  
1978 BARKER ROBERT H  
1979 BARKER ROBERT H  
1980 BARKER ROBERT H  
1982 BARKER ROBERT H  
1983 BARKER ROBERT H

Type:  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations  
Gasoline Service Stations



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**A3**  
**SW**  
**< 1/8**  
**0.043 mi.**  
**226 ft.**  
**KINCHER GARY**  
**5100 KATELLA**  
**LOS ALAMITOS, CA 90720**  
**Site 3 of 9 in cluster A**

**EDR Hist Auto**    **1020594478**  
**N/A**

**Relative:**  
**Higher**

EDR Hist Auto

**Actual:**  
**32 ft.**

Year:	Name:	Type:
1969	KINCHER GARY	Gasoline Service Stations
1970	KINCHER GARY	Gasoline Service Stations
1971	KINCHER GARY	Gasoline Service Stations
1989	UNION 76	Gasoline Service Stations
1990	UNION 76	Gasoline Service Stations
1991	UNION 76	Gasoline Service Stations
1992	UNION 76	Gasoline Service Stations
1993	UNION 76	Gasoline Service Stations
1994	UNION 76	Gasoline Service Stations
1995	UNION 76	Gasoline Service Stations
1996	UNION 76	Gasoline Service Stations
1997	UNION 76	Gasoline Service Stations
1998	TUSCO MARKETING CO	Gasoline Service Stations
2002	KATELLA 76	Gasoline Service Stations
2003	KATELLA 76	Gasoline Service Stations
2004	KATELLA 76	Gasoline Service Stations
2005	KATELLA 76	Gasoline Service Stations
2006	KATELLA 76	Gasoline Service Stations
2007	KATELLA 76	Gasoline Service Stations
2008	KATELLA 76	Gasoline Service Stations
2009	KATELLA 76	Gasoline Service Stations
2010	KATELLA 76	Gasoline Service Stations
2011	KATELLA 76	Gasoline Service Stations
2012	KATELLA 76	Gasoline Service Stations
2012	HASSAN & SONS INC	Gasoline Service Stations
2013	HASSAN & SONS INC	Gasoline Service Stations
2013	KATELLA 76	Gasoline Service Stations
2014	HASSAN & SONS INC	Gasoline Service Stations
2014	KATELLA 76	Gasoline Service Stations

**A4**  
**SW**  
**< 1/8**  
**0.043 mi.**  
**226 ft.**  
**UNION OIL SERVICE STATION 5511**  
**5100 KATELLA**  
**LOS ALAMITOS, CA 90720**  
**Site 4 of 9 in cluster A**

**LUST**    **1000166553**  
**HIST UST**    **N/A**

**Relative:**  
**Higher**

LUST:

**Actual:**  
**32 ft.**

Lead Agency:	ORANGE COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	<a href="http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900471">http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900471</a>
Global Id:	T0605900471
Latitude:	33.8029259
Longitude:	-118.0436072
Status:	Completed - Case Closed
Status Date:	09/23/2015
Case Worker:	KL
RB Case Number:	083000585T
Local Agency:	ORANGE COUNTY LOP
File Location:	Local Agency
Local Case Number:	87UT114
Potential Media Affect:	Aquifer used for drinking water supply

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Potential Contaminants of Concern: Gasoline  
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.

**LUST:**

Global Id: T0605900471  
Contact Type: Local Agency Caseworker  
Contact Name: KEVIN LAMBERT  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 E DYER ROAD SUITE 120  
City: SANTA ANA  
Email: klambert@ochca.com  
Phone Number: 7144336261

Global Id: T0605900471  
Contact Type: Regional Board Caseworker  
Contact Name: NANCY OLSON-MARTIN  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: nolson-martin@waterboards.ca.gov  
Phone Number: Not reported

**LUST:**

Global Id: T0605900471  
Action Type: RESPONSE  
Date: 12/17/2012  
Action: Request for Closure - Regulator Responded

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 10/06/2008  
Action: Staff Letter

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 09/23/2015  
Action: Closure/No Further Action Letter

Global Id: T0605900471  
Action Type: Other  
Date: 05/19/1987  
Action: Leak Reported

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 04/28/2009  
Action: Staff Letter

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 07/14/2009  
Action: Staff Letter

Global Id: T0605900471

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Action Type:	ENFORCEMENT
Date:	09/23/2015
Action:	LOP Case Closure Summary to RB
Global Id:	T0605900471
Action Type:	REMEDIATION
Date:	05/19/1987
Action:	Excavation
Global Id:	T0605900471
Action Type:	REMEDIATION
Date:	01/01/1991
Action:	Pump & Treat (P&T) Groundwater
Global Id:	T0605900471
Action Type:	REMEDIATION
Date:	11/03/2004
Action:	In Situ Physical/Chemical Treatment (other than SVE)
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	11/09/2009
Action:	Staff Letter
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	05/10/2011
Action:	File review
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	08/09/2011
Action:	Staff Letter
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	10/18/2012
Action:	File review
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	12/19/2012
Action:	Staff Letter
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	08/13/2013
Action:	File review
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	10/29/2014
Action:	Notification - Public Notice of Case Closure
Global Id:	T0605900471
Action Type:	ENFORCEMENT
Date:	01/09/2015

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Action: Notification - Preclosure

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 10/29/2014  
Action: Notification - Public Participation Document

Global Id: T0605900471  
Action Type: REMEDIATION  
Date: 12/01/2000  
Action: Soil Vapor Extraction (SVE)

Global Id: T0605900471  
Action Type: REMEDIATION  
Date: 12/01/1990  
Action: Excavation

Global Id: T0605900471  
Action Type: REMEDIATION  
Date: 11/01/1996  
Action: Excavation

Global Id: T0605900471  
Action Type: Other  
Date: 05/19/1987  
Action: Leak Began

Global Id: T0605900471  
Action Type: Other  
Date: 05/19/1987  
Action: Leak Discovery

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 04/05/2004  
Action: Staff Letter

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 07/19/2004  
Action: Staff Letter

Global Id: T0605900471  
Action Type: ENFORCEMENT  
Date: 11/19/2003  
Action: Staff Letter

**LUST:**

Global Id: T0605900471  
Status: Completed - Case Closed  
Status Date: 09/23/2015

Global Id: T0605900471  
Status: Open - Case Begin Date  
Status Date: 05/17/1987

Global Id: T0605900471

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Status: Open - Eligible for Closure  
Status Date: 03/13/2013

Global Id: T0605900471  
Status: Open - Remediation  
Status Date: 11/01/1999

Global Id: T0605900471  
Status: Open - Remediation  
Status Date: 12/31/2000

Global Id: T0605900471  
Status: Open - Site Assessment  
Status Date: 05/17/1987

Global Id: T0605900471  
Status: Open - Site Assessment  
Status Date: 07/01/1987

Global Id: T0605900471  
Status: Open - Site Assessment  
Status Date: 03/17/1988

Global Id: T0605900471  
Status: Open - Site Assessment  
Status Date: 10/15/1990

Global Id: T0605900471  
Status: Open - Site Assessment  
Status Date: 08/09/2011

**ORANGE CO. LUST:**

Region: ORANGE  
Facility Id: 87UT114  
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded  
Date Closed: 09/23/2015  
Record ID: RO0001279

**LUST REG 8:**

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Remedial action (cleanup) Underway  
Case Number: 083000585T  
Local Case Num: 87UT114  
Case Type: Other ground water affected  
Substance: Gasoline  
Qty Leaked: 0  
Abate Method: Not reported  
Cross Street: Not reported  
Enf Type: SEL  
Funding: Not reported  
How Discovered: Tank Closure  
How Stopped: New Tank  
Leak Cause: Unknown

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Leak Source:	Tank
Global ID:	T0605900471
How Stopped Date:	9/9/9999
Enter Date:	Not reported
Date Confirmation of Leak Began:	5/17/1987
Date Preliminary Assessment Began:	3/17/1988
Discover Date:	5/19/1987
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	7/1/1987
Date Pollution Characterization Began:	10/15/1990
Date Remediation Plan Submitted:	11/1/1999
Date Remedial Action Underway:	12/31/2000
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8029259
Longitude:	-118.0436072
MTBE Date:	6/15/2004
Max MTBE GW:	86000
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	SS
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

**HIST UST:**

File Number:	0002D6E3
URL:	<a href="http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D6E3.pdf">http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D6E3.pdf</a>
Region:	STATE
Facility ID:	00000056204
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	ROBERT HENRY BARKER
Telephone:	7145964360
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010
Total Tanks:	0001
Tank Num:	001
Container Num:	1

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNION OIL SERVICE STATION 5511 (Continued)**

**1000166553**

Year Installed: Not reported  
Tank Capacity: 00000120  
Tank Used for: WASTE  
Type of Fuel: WASTE OIL  
Container Construction Thickness: Not reported  
Leak Detection: None

[Click here for Geo Tracker PDF:](#)

**A5**  
**SW**  
**< 1/8**  
**0.043 mi.**  
**226 ft.**

**INNABI UNION 76 #1**  
**5100 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**  
**Site 5 of 9 in cluster A**

**SWEEPS UST**  
**CA FID UST**  
**HAZNET**  
**HIST CORTESE**

**S101588973**  
**N/A**

**Relative:**  
**Higher**

**SWEEPS UST:**

**Actual:**  
**32 ft.**

Status: Not reported  
Comp Number: 136  
Number: Not reported  
Board Of Equalization: 44-015749  
Referral Date: Not reported  
Action Date: Not reported  
Created Date: Not reported  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-000136-000003  
Tank Status: Not reported  
Capacity: 500  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported  
Number Of Tanks: 1

Status: Active  
Comp Number: 136  
Number: 9  
Board Of Equalization: 44-015749  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-000136-000001  
Tank Status: A  
Capacity: 12000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: 2

Status: Active  
Comp Number: 136  
Number: 9  
Board Of Equalization: 44-015749  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**INNABI UNION 76 #1 (Continued)**

**S101588973**

SWRCB Tank Id: 30-000-000136-000002  
Tank Status: A  
Capacity: 12000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

**CA FID UST:**

Facility ID: 30000665  
Regulated By: UTNKA  
Regulated ID: Not reported  
Cortese Code: Not reported  
SIC Code: Not reported  
Facility Phone: 2135960153  
Mail To: Not reported  
Mailing Address: 911 WILSHIRE BLVD STE 10  
Mailing Address 2: Not reported  
Mailing City,St,Zip: LOS ALAMITOS 90720  
Contact: Not reported  
Contact Phone: Not reported  
DUNs Number: Not reported  
NPDES Number: Not reported  
EPA ID: Not reported  
Comments: Not reported  
Status: Active

**HAZNET:**

Site Name: H&S 16  
Year: 2017  
GEPAID: CAL000330484  
Contact: VICTOR HASSAN  
Telephone: 7147615426  
Mailing Name: Not reported  
Mailing Address: 2860 N SANTIAGO BLVD  
Mailing City,St,Zip: ORANGE, CA 928670000  
Gen County: Orange  
TSD EPA ID: CAD028409019  
TSD County: Los Angeles  
Waste Category: Other organic solids  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.0625  
Cat Decode: Other organic solids  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Facility County: Orange

Site Name: H&S 16  
Year: 2017  
GEPAID: CAL000330484  
Contact: VICTOR HASSAN  
Telephone: 7147615426  
Mailing Name: Not reported  
Mailing Address: 2860 N SANTIAGO BLVD



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**INNABI UNION 76 #1 (Continued)**

**S101588973**

Mailing City,St,Zip: ORANGE, CA 928670000  
Gen County: Orange  
TSD EPA ID: CAD028409019  
TSD County: Los Angeles  
Waste Category: Tank bottom waste  
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)  
Tons: 0.1668  
Cat Decode: Tank bottom waste  
Method Decode: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)  
Facility County: Orange

Site Name: H&S 16  
Year: 2016  
GEPAID: CAL000330484  
Contact: VICTOR HASSAN  
Telephone: 7147615426  
Mailing Name: Not reported  
Mailing Address: 2860 N SANTIAGO BLVD  
Mailing City,St,Zip: ORANGE, CA 928670000  
Gen County: Orange  
TSD EPA ID: CAD028409019  
TSD County: Los Angeles  
Waste Category: Other organic solids  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.0625  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

Site Name: H&S 16  
Year: 2016  
GEPAID: CAL000330484  
Contact: VICTOR HASSAN  
Telephone: 7147615426  
Mailing Name: Not reported  
Mailing Address: 2860 N SANTIAGO BLVD  
Mailing City,St,Zip: ORANGE, CA 928670000  
Gen County: Orange  
TSD EPA ID: CAD028409019  
TSD County: Los Angeles  
Waste Category: Tank bottom waste  
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)  
Tons: 0.22935  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

Site Name: H&S 16  
Year: 2015  
GEPAID: CAL000330484  
Contact: ALAEDDIN HASSAN  
Telephone: 7147615426  
Mailing Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**INNABI UNION 76 #1 (Continued)**

**S101588973**

Mailing Address: 2860 N SANTIAGO BLVD  
Mailing City,St,Zip: ORANGE, CA 928670000  
Gen County: Orange  
TSD EPA ID: AZR000501510  
TSD County: 99  
Waste Category: Other organic solids  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Tons: 0.1  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

[Click this hyperlink](#) while viewing on your computer to access  
2 additional CA\_HAZNET: record(s) in the EDR Site Report.

**HIST CORTESE:**

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083000585T

**A6  
SW  
< 1/8  
0.043 mi.  
226 ft.**

**TOSCO #5680  
5100 KATELLA AVE  
LOS ALAMITOS, CA 90720  
Site 6 of 9 in cluster A**

**UST U003942130  
N/A**

**Relative:  
Higher**

**UST:**

Facility ID: Not reported  
Permitting Agency: Orange County Environmental Health  
Latitude: 33.80264  
Longitude: -118.04396

**Actual:  
32 ft.**

Facility ID: 18767  
Permitting Agency: ORANGE COUNTY  
Latitude: 33.8039889  
Longitude: -118.042611

**ORANGE CO. UST:**

Facility ID: FA0051673

**A7  
SW  
< 1/8  
0.043 mi.  
226 ft.**

**SERVICE STATION 5511  
5100 KATELLA  
LOS ALAMITOS, CA 90720  
Site 7 of 9 in cluster A**

**HIST UST U001565447  
N/A**

**Relative:  
Higher**

**HIST UST:**

File Number: 000290CE  
URL: <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000290CE.pdf>  
Region: STATE  
Facility ID: 00000008023  
Facility Type: Gas Station  
Other Type: Not reported

**Actual:  
32 ft.**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SERVICE STATION 5511 (Continued)**

**U001565447**

Contact Name: ROBERT HENRY BARKER  
Telephone: 7145964360  
Owner Name: UNION OIL COMPANY OF CALIFORNIA  
Owner Address: 3701 WILSHIRE BOULEVARD-SUITE  
Owner City,St,Zip: LOS ANGELES, CA 90010  
Total Tanks: 0003

Tank Num: 001  
Container Num: 5511-1  
Year Installed: 1964  
Tank Capacity: 00009940  
Tank Used for: PRODUCT  
Type of Fuel: UNLEADED  
Container Construction Thickness: Not reported  
Leak Detection: Stock Inventor, Pressure Test

Tank Num: 002  
Container Num: 5511-2  
Year Installed: 1964  
Tank Capacity: 00009940  
Tank Used for: PRODUCT  
Type of Fuel: PREMIUM  
Container Construction Thickness: Not reported  
Leak Detection: Stock Inventor, Pressure Test

Tank Num: 003  
Container Num: 5511-4  
Year Installed: 1964  
Tank Capacity: 00000280  
Tank Used for: WASTE  
Type of Fuel: WASTE OIL  
Container Construction Thickness: Not reported  
Leak Detection: Stock Inventor, Pressure Test

[Click here for Geo Tracker PDF:](#)

**A8**  
**SW**  
**< 1/8**  
**0.043 mi.**  
**226 ft.**

**5100 KATELLA**  
**LOS ALAMITOS, CA 90720**

**Site 8 of 9 in cluster A**

**RCRA-LQG 1007200349**  
**CAL000169176**

**Relative:**  
**Higher**

**RCRA-LQG:**

**Actual:**  
**32 ft.**

Date form received by agency: 02/02/2002  
Facility name: Not reported  
Facility address: 5100 KATELLA  
LOS ALAMITOS, CA 90720  
EPA ID: CAL000169176  
Mailing address: PO BOX 52085  
PHOENIX, AZ 85072  
Contact: STEVE BOYD  
Contact address: Not reported  
Not reported  
Contact country: US  
Contact telephone: 714-428-6572  
Contact email: Not reported  
EPA Region: Not reported  
Classification: Large Quantity Generator

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

(Continued)

1007200349

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

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  
Used oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

9  
SE  
< 1/8  
0.050 mi.  
266 ft.

**TILOS EUROPEAN AUTOHAUS**  
**5300 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**

RCRA NonGen / NLR  
FINDS  
ECHO  
HAZNET  
1004675889  
CAR000078394

Relative:  
Higher

Actual:  
32 ft.

RCRA NonGen / NLR:

Date form received by agency: 08/17/2001  
Facility name: TILOS EUROPEAN AUTOHAUS  
Facility address: 5300 KATELLA AVE  
LOS ALAMITOS, CA 90720  
EPA ID: CAR000078394  
Contact: DEANNA BURNS  
Contact address: 5300 KATELLA AVE  
LOS ALAMITOS, CA 90720  
Contact country: US  
Contact telephone: 562-799-8456  
Contact email: Not reported  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: TILOS EUROPEAN AUTOHAUS  
Owner/operator address: 5300 KATELLA AVE  
LOS ALAMITOS, CA 90720

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**TILOS EUROPEAN AUTOHAUS (Continued)**

**1004675889**

Owner/operator country: Not reported  
Owner/operator telephone: 562-799-0021  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
Used 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

Violation Status: No violations found

**FINDS:**

Registry ID: 110006486873

**Environmental Interest/Information System**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**

Envid: 1004675889  
Registry ID: 110006486873  
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110006486873>

**HAZNET:**

Site Name: TILOS EUROPEAN AUTOHAUS  
Year: 2001

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**TILOS EUROPEAN AUTOHAUS (Continued)**

**1004675889**

GEPAID: CAR000078394  
Contact: --  
Telephone: 5627990021  
Mailing Name: Not reported  
Mailing Address: 5300 KATELLA AVE  
Mailing City,St,Zip: LOS ALAMITOS, CA 907200000  
Gen County: Not reported  
TSD EPA ID: CAT080013352  
TSD County: Not reported  
Waste Category: Oil/water separation sludge  
Disposal Method: Recycler  
Tons: 1.35  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

**B10**  
**WSW**  
**< 1/8**  
**0.077 mi.**  
**407 ft.**  
**RACER CLEANERS**  
**5074 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**  
**Site 1 of 10 in cluster B**

**DRYCLEANERS** **S106077058**  
**N/A**

**Relative:**  
**Lower**

**Actual:**  
**30 ft.**  
DRYCLEANERS:  
EPA Id: CAL000268799  
NAICS Code: 81232  
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)  
SIC Code: 7211  
SIC Description: Power Laundries, Family and Commercial  
Create Date: 04/08/2003  
Facility Active: No  
Inactive Date: 06/30/2009  
Facility Addr2: Not reported  
Owner Name: DANA TRAN  
Owner Address: 5074 KATELLA AVE  
Owner Address 2: Not reported  
Owner Telephone: 5624301822  
Contact Name: TONY TRAN  
Contact Address: 5074 KATELLA AVE  
Contact Address 2: Not reported  
Contact Telephone: 5624301822  
Mailing Name: Not reported  
Mailing Address 1: 5074 KATELLA AVE  
Mailing Address 2: Not reported  
Mailing City: LOS ALAMITOS  
Mailing State: CA  
Mailing Zip: 907202802  
Owner Fax: 0000000000  
Region Code: 4

EPA Id: CAL000345982  
NAICS Code: 81232  
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)  
SIC Code: 7211  
SIC Description: Power Laundries, Family and Commercial  
Create Date: 08/20/2009  
Facility Active: No  
Inactive Date: 06/30/2012  
Facility Addr2: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**RACER CLEANERS (Continued)**

**S106077058**

Owner Name: THANH HUY PHAM  
Owner Address: 5851 CROCUS CIR  
Owner Address 2: Not reported  
Owner Telephone: 7148210998  
Contact Name: THANH PHAM  
Contact Address: 5851 CROCUS CIR  
Contact Address 2: Not reported  
Contact Telephone: 5624301822  
Mailing Name: Not reported  
Mailing Address 1: 5074 KATELLA AVE  
Mailing Address 2: Not reported  
Mailing City: LOS ALAMITOS  
Mailing State: CA  
Mailing Zip: 907202802  
Owner Fax: 0000000000  
Region Code: 4

**DRYCLEAN SOUTH COAST:**

Facility ID: 134245  
Application Number: 407673  
Permit Number: F56254  
Status: A  
Representative Name: TONY CHINH TRAN  
Representative Telephone: 562 4301822  
Permit Status: INACTIVE  
BCAT Number: 000603  
BCAT Description: DRY CLEANING, DRY-TO-DRY NV, W/ SIC, PERC  
CCAT Number: Not reported  
CCAT Description: Not reported  
UTM East: 0  
UTM North: 0

Facility ID: 134245  
Application Number: 456997  
Permit Number: Not reported  
Status: A  
Representative Name: TONY CHINH TRAN  
Representative Telephone: 562 4301822  
Permit Status: Not reported  
BCAT Number: 000603  
BCAT Description: DRY CLEANING, DRY-TO-DRY NV, W/ SIC, PERC  
CCAT Number: Not reported  
CCAT Description: Not reported  
UTM East: 0  
UTM North: 0

Facility ID: 134245  
Application Number: 465427  
Permit Number: F88074  
Status: A  
Representative Name: TONY CHINH TRAN  
Representative Telephone: 562 4301822  
Permit Status: INACTIVE  
BCAT Number: 000603  
BCAT Description: DRY CLEANING, DRY-TO-DRY NV, W/ SIC, PERC  
CCAT Number: Not reported  
CCAT Description: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**RACER CLEANERS (Continued)**

**S106077058**

UTM East: 0  
UTM North: 0

**B11**  
**WSW**  
**< 1/8**  
**0.077 mi.**  
**407 ft.**

**ALAMITOS CLEANERS AND LAUNDRY**  
**5074 KATELLA AV**  
**LOS ALAMITOS, CA 90720**

**EDR Hist Cleaner** **1018665851**  
**N/A**

**Site 2 of 10 in cluster B**

**Relative:**  
**Lower**

EDR Hist Cleaner

**Actual:**  
**30 ft.**

Year:	Name:	Type:
1987	ALAMITOS DRY CLEAN & LANDRY	Repair Services, NEC
1988	ALAMITOS DRY CLEAN & LANDRY	Repair Services, NEC
1989	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1990	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1991	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1992	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1993	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1994	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1995	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1996	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1997	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1998	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
1999	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
2000	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
2001	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2001	ALAMITOS CLEANERS AND LAUNDRY	Drycleaning Plants, Except Rugs
2002	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2003	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2004	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2005	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2006	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2007	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2008	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2009	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2010	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2011	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2012	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2013	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC
2014	RACER DRY CLEANERS	Drycleaning Plants, Except Rugs, NEC

**B12**  
**WSW**  
**< 1/8**  
**0.077 mi.**  
**407 ft.**

**ALAMITOS CLEANERS**  
**5074 KATELLA AVE**  
**LOS ALAMITOS, CA**

**DRYCLEANERS** **S121698047**  
**N/A**

**Site 3 of 10 in cluster B**

**Relative:**  
**Lower**

DRYCLEAN SOUTH COAST:

**Actual:**  
**30 ft.**

Facility ID:	47641
Application Number:	132659
Permit Number:	M47067
Status:	S
Representative Name:	LEONARD KAFTON
Representative Telephone:	213 5965020
Permit Status:	INACTIVE



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ALAMITOS CLEANERS (Continued)**

**S121698047**

BCAT Number: 000234  
BCAT Description: DRY CLEANING EQUIP PERCHLOROETHYLENE  
CCAT Number: Not reported  
CCAT Description: Not reported  
UTM East: 0  
UTM North: 0

**B13**  
**WSW**  
**< 1/8**  
**0.077 mi.**  
**407 ft.**  
**ALAMITOS LAUNDRY & DRY CLEANERS**  
**5074 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**  
**Site 4 of 10 in cluster B**

**DRYCLEANERS** **S121694087**  
**N/A**

**Relative:** DRYCLEAN SOUTH COAST:  
**Lower** Facility ID: 115287  
Application Number: 338739  
**Actual:** Permit Number: Not reported  
**30 ft.** Status: A  
Representative Name: RICHARD HATTEN  
Representative Telephone: 562 4301822  
Permit Status: Not reported  
BCAT Number: 000601  
BCAT Description: DRY CLEANING, DRY-TO-DRY NON-VENT, PERC  
CCAT Number: Not reported  
CCAT Description: Not reported  
UTM East: 0  
UTM North: 0

**B14**  
**WSW**  
**< 1/8**  
**0.077 mi.**  
**407 ft.**  
**ALAMITOS CLEANERS**  
**5074-78 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**  
**Site 5 of 10 in cluster B**

**DRYCLEANERS** **S121698556**  
**N/A**

**Relative:** DRYCLEAN SOUTH COAST:  
**Lower** Facility ID: 56429  
Application Number: 154924  
**Actual:** Permit Number: Not reported  
**30 ft.** Status: I  
Representative Name: JOHN E ROBINSON  
Representative Telephone: 213 4300096  
Permit Status: Not reported  
BCAT Number: 000234  
BCAT Description: DRY CLEANING EQUIP PERCHLOROETHYLENE  
CCAT Number: Not reported  
CCAT Description: Not reported  
UTM East: 0  
UTM North: 0

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

EDR ID Number  
EPA ID Number

**A15**  
**SSW**  
**< 1/8**  
**0.077 mi.**  
**409 ft.**  
**DUTCH BOY DRY CLEANERS**  
**5131 ANTIETAM AVE**  
**LOS ALAMITOS, CA 90720**  
**Site 9 of 9 in cluster A**

**EDR Hist Cleaner** **1018886365**  
**N/A**

**Relative:**  
**Higher**

EDR Hist Cleaner

**Actual:**  
**32 ft.**

Year: Name:  
2014 DUTCH BOY DRY CLEANERS

Type:  
Garment Pressing And Cleaners' Agents

**C16**  
**SSE**  
**< 1/8**  
**0.094 mi.**  
**496 ft.**  
**K & A IMPORT SERVICES**  
**11061 WINNERS CIRCLE**  
**LOS ALAMITOS, CA 90720**  
**Site 1 of 3 in cluster C**

**RCRA-SQG** **1000101121**  
**FINDS** **CAD981445026**  
**ECHO**

**Relative:**  
**Lower**

RCRA-SQG:

**Actual:**  
**31 ft.**

Date form received by agency: 09/15/1986  
Facility name: K & A IMPORT SERVICES  
Facility address: 11061 WINNERS CIRCLE  
LOS ALAMITOS, CA 90720  
EPA ID: CAD981445026  
Mailing address: WINNERS CIRCLE  
LOS ALAMITOS, CA 90720  
Contact: ENVIRONMENTAL MANAGER  
Contact address: 11061 WINNERS CIRCLE  
LOS ALAMITOS, CA 90720  
Contact country: US  
Contact telephone: 213-594-8925  
Contact email: Not reported  
EPA Region: 09  
Classification: Small Small Quantity Generator  
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: KRIRK HONGPANICH  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**K & A IMPORT SERVICES (Continued)**

**1000101121**

Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**FINDS:**

Registry ID: 110002707928

**Environmental Interest/Information System**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**

Envid: 1000101121  
Registry ID: 110002707928  
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110002707928>

**C17**  
**SSE**  
**< 1/8**  
**0.094 mi.**  
**496 ft.**

**K&A IMPORTS**  
**11061 WINNER CIRCLE**  
**LOS ALAMITOS, CA 90720**

**Site 2 of 3 in cluster C**

**Relative:**  
**Lower**

RCRA-SQG:  
Date form received by agency: 09/10/1986  
Facility name: K&A IMPORTS  
Facility address: 11061 WINNER CIRCLE

**Actual:**  
**31 ft.**

**RCRA-SQG** **1000118632**  
**HAZNET** **CAD981443161**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**K&A IMPORTS (Continued)**

**1000118632**

LOS ALAMITOS, CA 90720  
EPA ID: CAD981443161  
Mailing address: WINNER CIRCLE  
LOS ALAMITOS, CA 90720  
Contact: ENVIRONMENTAL MANAGER  
Contact address: 11061 WINNER CIRCLE  
LOS ALAMITOS, CA 90720  
Contact country: US  
Contact telephone: 213-594-8925  
Contact email: Not reported  
EPA Region: 09  
Classification: Small Small Quantity Generator  
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

**Owner/Operator Summary:**

Owner/operator name: NOT REQUIRED  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: KIRK HONGPAHICH  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**K&A IMPORTS (Continued)**

**1000118632**

User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**HAZNET:**

Site Name: K&A IMPORTS  
Year: 1993  
GEPAID: CAD981443161  
Contact: Not reported  
Telephone: 0000000000  
Mailing Name: Not reported  
Mailing Address: 11061 WINNER CIRCLE  
Mailing City,St,Zip: LOS ALAMITOS, CA 907200000  
Gen County: Not reported  
TSD EPA ID: CAD099452708  
TSD County: Not reported  
Waste Category: Unspecified organic liquid mixture  
Disposal Method: Recycler  
Tons: 0.91739999999  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

**B18**  
**WSW**  
**< 1/8**  
**0.104 mi.**  
**549 ft.**  
  
**Relative:**  
**Lower**  
  
**Actual:**  
**31 ft.**

**LOS ALAMITOS RACE TRACK**  
**4961 E KATELLA**  
**LOS ALAMITOS, CA 90720**  
  
**Site 6 of 10 in cluster B**

**RCRA-SQG**  
**LUST**  
**SWEEPS UST**  
**CA FID UST**  
**Orange Co. Industrial Site**  
**FINDS**  
**ECHO**  
**HAZNET**  
**HIST CORTESE**  
**CIWQS**

**1000101555**  
**CAD981684483**

**RCRA-SQG:**

Date form received by agency: 10/20/1986  
Facility name: LOS ALAMITOS RACE TRACK  
Facility address: 4961 E KATELLA  
LOS ALAMITOS, CA 90720  
EPA ID: CAD981684483  
Contact: ENVIRONMENTAL MANAGER  
Contact address: 4961 E KATELLA  
LOS ALAMITOS, CA 90720  
Contact country: US  
Contact telephone: 213-598-5895  
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

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Owner/Operator Summary:

Owner/operator name: HOLLYWOOD PARK OPER  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED  
Owner/operator address: NOT REQUIRED  
NOT REQUIRED, ME 99999  
Owner/operator country: Not reported  
Owner/operator telephone: 415-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

LUST REG 8:

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Case Closed  
Case Number: 083001061T  
Local Case Num: 88UT153  
Case Type: Other ground water affected  
Substance: Gasoline  
Qty Leaked: 0  
Abate Method: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Close Tank
Leak Cause:	Unknown
Leak Source:	Unknown
Global ID:	T0605900836
How Stopped Date:	9/9/9999
Enter Date:	Not reported
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	8/9/1988
Enforcement Date:	Not reported
Close Date:	6/26/1996
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8029319
Longitude:	-118.0466934
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
MTBE Class:	*
Staff:	NOM
Staff Initials:	SS
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported
Region:	8
County:	Orange
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083003034T
Local Case Num:	97UT016
Case Type:	Soil only
Substance:	Gasoline
Qty Leaked:	0
Abate Method:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Close Tank
Leak Cause:	Unknown
Leak Source:	Unknown
Global ID:	T0605902069
How Stopped Date:	9/9/9999
Enter Date:	Not reported
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	6/23/1997
Enforcement Date:	Not reported
Close Date:	7/29/1997
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8029319
Longitude:	-118.0466934
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
MTBE Class:	*
Staff:	NOM
Staff Initials:	SS
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

**SWEEPS UST:**

Status:	Not reported
Comp Number:	5314
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:	30-000-005314-000006



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Tank Status: Not reported  
Capacity: 10000  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported  
Number Of Tanks: Not reported

Status: Not reported  
Comp Number: 5314  
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: 30-000-005314-000007  
Tank Status: Not reported  
Capacity: 1500  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported  
Number Of Tanks: Not reported

Status: Not reported  
Comp Number: 5314  
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: 30-000-005314-000008  
Tank Status: Not reported  
Capacity: 1500  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported  
Number Of Tanks: Not reported

Status: Not reported  
Comp Number: 5314  
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: 30-000-005314-000009  
Tank Status: Not reported  
Capacity: 1000  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Number Of Tanks: Not reported

Status: Not reported  
Comp Number: 5314  
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: 30-000-005314-000010  
Tank Status: Not reported  
Capacity: 2000  
Active Date: Not reported  
Tank Use: UNKNOWN  
STG: PRODUCT  
Content: Not reported  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 5314  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-005314-000011  
Tank Status: A  
Capacity: 5000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: 3

Status: Active  
Comp Number: 5314  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-005314-000012  
Tank Status: A  
Capacity: 10000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 5314  
Number: 9  
Board Of Equalization: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-005314-000013  
Tank Status: A  
Capacity: 5000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: LEADED  
Number Of Tanks: Not reported

**CA FID UST:**

Facility ID: 30000858  
Regulated By: UTNKA  
Regulated ID: Not reported  
Cortese Code: Not reported  
SIC Code: Not reported  
Facility Phone: 7149951234  
Mail To: Not reported  
Mailing Address: 4961 KATELLA ATTN: LEONAR  
Mailing Address 2: Not reported  
Mailing City,St,Zip: LOS ALAMITOS 90720  
Contact: Not reported  
Contact Phone: Not reported  
DUNS Number: Not reported  
NPDES Number: Not reported  
EPA ID: Not reported  
Comments: Not reported  
Status: Active

**Orange Co. Industrial Site:**

Case ID: 89IC018  
Record ID: RO0000192  
Current Status: CLOSED 2/5/1990  
Closure Type: Closed pre 1994, file review required to determine closure type  
Released Chemical: DATA NOT ENTERED, SEE FILE

**FINDS:**

Registry ID: 110002751683

**Environmental Interest/Information System**

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**

Envid: 1000101555  
Registry ID: 110002751683  
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110002751683>

**HAZNET:**

Site Name: LOS ALAMITOS RACE TRACK  
Year: 2001  
GEPAID: CAD981684483  
Contact: FRANK SHERREN FACILITY MANAGER  
Telephone: 7148202800  
Mailing Name: Not reported  
Mailing Address: 4961 E KATELLA  
Mailing City,St,Zip: LOS ALAMITOS, CA 907200000  
Gen County: Not reported  
TSD EPA ID: CAT000613893  
TSD County: Not reported  
Waste Category: Aqueous solution with total organic residues less than 10 percent  
Disposal Method: Transfer Station  
Tons: 0.32  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

Site Name: LOS ALAMITOS RACE TRACK  
Year: 1998  
GEPAID: CAD981684483  
Contact: Not reported  
Telephone: 0000000000  
Mailing Name: Not reported  
Mailing Address: 4961 E KATELLA  
Mailing City,St,Zip: LOS ALAMITOS, CA 907200000  
Gen County: Not reported  
TSD EPA ID: CAT000613893  
TSD County: Not reported  
Waste Category: Aqueous solution with total organic residues less than 10 percent  
Disposal Method: Transfer Station  
Tons: .0625  
Cat Decode: Not reported  
Method Decode: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE TRACK (Continued)**

**1000101555**

Facility County: Orange

**HIST CORTESE:**

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083003034T

**CIWQS:**

Agency: Los Alamitos Race Course  
Agency Address: 4961 Katella Avenue, Los Alamitos, CA 90720  
Place/Project Type: Service/Commercial Site, NEC  
SIC/NAICS: 7948  
Region: 8  
Program: ANIWSTOTH, NPDESWW  
Regulatory Measure Status: Active  
Regulatory Measure Type: NPDES Permit  
Order Number: R8-2015-0002  
WDID: 8 301432001  
NPDES Number: CA0106348  
Adoption Date: 07/24/2015  
Effective Date: 08/01/2015  
Termination Date: Not reported  
Expiration/Review Date: 07/31/2020  
Design Flow: 0.0065  
Major/Minor: Minor  
Complexity: C  
TTWQ: 3  
Enforcement Actions within 5 years: 2  
Violations within 5 years: 8  
Latitude: 33.80311  
Longitude: -118.044244

**B19**  
**WSW**  
**< 1/8**  
**0.104 mi.**  
**549 ft.**

**4961 KATELLA AVE**  
**LOS ALAMITOS, CA**  
**Site 7 of 10 in cluster B**

**AST A100340703**  
**N/A**

**Relative:**  
**Lower**

**AST:**

**Actual:**  
**31 ft.**

Certified Unified Program Agencies: Orange  
Owner: LOS ALAMITOS RACE COURSE  
Total Gallons: 1,320  
CERSID: Not reported  
Facility ID: Not reported  
Business Name: Not reported  
Phone: Not reported  
Fax: Not reported  
Mailing Address: Not reported  
Mailing Address City: Not reported  
Mailing Address State: Not reported  
Mailing Address Zip Code: Not reported  
Operator Name: Not reported  
Operator Phone: Not reported  
Owner Phone: Not reported  
Owner Mail Address: Not reported  
Owner State: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

(Continued)

A100340703

Owner Zip Code: Not reported  
Owner Country: Not reported  
Property Owner Name: Not reported  
Property Owner Phone: Not reported  
Property Owner Mailing Address: Not reported  
Property Owner City: Not reported  
Property Owner Stat : Not reported  
Property Owner Zip Code: Not reported  
Property Owner Country: Not reported  
EPAID: Not reported

B20  
WSW  
< 1/8  
0.104 mi.  
549 ft.

LOS ALAMITOS RACE COURSE  
4961 KATELLA  
LOS ALAMITOS, CA 90720

Site 8 of 10 in cluster B

LUST S100723265  
ENF N/A  
HIST CORTESE  
NPDES  
CIWQS

Relative:  
Lower  
Actual:  
31 ft.

LUST:

Lead Agency: ORANGE COUNTY LOP  
Case Type: LUST Cleanup Site  
Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605902069](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605902069)  
Global Id: T0605902069  
Latitude: 33.807404  
Longitude: -118.04396  
Status: Completed - Case Closed  
Status Date: 07/29/1997  
Case Worker: KL  
RB Case Number: 083003034T  
Local Agency: ORANGE COUNTY LOP  
File Location: Local Agency  
Local Case Number: 97UT016  
Potential Media Affect: Soil  
Potential Contaminants of Concern: Gasoline  
Site History: Not reported

LUST:

Global Id: T0605902069  
Contact Type: Local Agency Caseworker  
Contact Name: KEVIN LAMBERT  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 E DYER ROAD SUITE 120  
City: SANTA ANA  
Email: klambert@ochca.com  
Phone Number: 7144336261

Global Id: T0605902069  
Contact Type: Regional Board Caseworker  
Contact Name: NANCY OLSON-MARTIN  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: nolson-martin@waterboards.ca.gov  
Phone Number: Not reported

LUST:

Global Id: T0605902069  
Action Type: Other  
Date: 06/30/1997

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

Action: Leak Reported  
  
Global Id: T0605902069  
Action Type: ENFORCEMENT  
Date: 07/29/1997  
Action: Closure/No Further Action Letter

Global Id: T0605902069  
Action Type: Other  
Date: 06/23/1997  
Action: Leak Discovery

**LUST:**

Global Id: T0605902069  
Status: Completed - Case Closed  
Status Date: 07/29/1997

Global Id: T0605902069  
Status: Open - Case Begin Date  
Status Date: 06/23/1997

Lead Agency: ORANGE COUNTY LOP  
Case Type: LUST Cleanup Site  
Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605900836](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900836)  
Global Id: T0605900836  
Latitude: 33.8029319  
Longitude: -118.0466934  
Status: Completed - Case Closed  
Status Date: 06/26/1996  
Case Worker: KL  
RB Case Number: 083001061T  
Local Agency: ORANGE COUNTY LOP  
File Location: Local Agency  
Local Case Number: 88UT153  
Potential Media Affect: Other Groundwater (uses other than drinking water)  
Potential Contaminants of Concern: Gasoline  
Site History: Not reported

**LUST:**

Global Id: T0605900836  
Contact Type: Local Agency Caseworker  
Contact Name: KEVIN LAMBERT  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 E DYER ROAD SUITE 120  
City: SANTA ANA  
Email: klambert@ochca.com  
Phone Number: 7144336261

Global Id: T0605900836  
Contact Type: Regional Board Caseworker  
Contact Name: NANCY OLSON-MARTIN  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: nolson-martin@waterboards.ca.gov  
Phone Number: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

LUST:

Global Id:	T0605900836
Action Type:	Other
Date:	08/09/1988
Action:	Leak Reported
Global Id:	T0605900836
Action Type:	RESPONSE
Date:	04/06/1992
Action:	Correspondence
Global Id:	T0605900836
Action Type:	ENFORCEMENT
Date:	06/26/1996
Action:	Closure/No Further Action Letter
Global Id:	T0605900836
Action Type:	Other
Date:	08/09/1988
Action:	Leak Discovery

LUST:

Global Id:	T0605900836
Status:	Completed - Case Closed
Status Date:	06/26/1996
Global Id:	T0605900836
Status:	Open - Case Begin Date
Status Date:	08/09/1988

ORANGE CO. LUST:

Region:	ORANGE
Facility Id:	88UT153
Released Substance:	Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed:	06/26/1996
Record ID:	RO0002572
Region:	ORANGE
Facility Id:	97UT016
Released Substance:	Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed:	07/29/1997
Record ID:	RO0001369

ENF:

Region:	8
Facility Id:	259101
Agency Name:	Los Alamitos Race Course
Place Type:	Service/Commercial
Place Subtype:	Service/Commercial Site, NEC
Facility Type:	Industrial
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	33.80311
Place Longitude:	-118.044244



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

LOS ALAMITOS RACE COURSE (Continued)

S100723265

SIC Code 1:	7948
SIC Desc 1:	Racing, Including Track Operations
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	6.49999999
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Stormwater runoff
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	ANIWSTOTH
Program Category1:	ANIMALWASTE
Program Category2:	ANIMALWASTE
# Of Programs:	1
WDID:	8 301432001
Reg Measure Id:	364287
Reg Measure Type:	NPDES Permits
Region:	8
Order #:	R8-2009-0017
Npdes# CA#:	CA0106348
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	N
Application Fee Amt Received:	Not reported
Status:	Historical
Status Date:	08/06/2015
Effective Date:	03/27/2009
Expiration/Review Date:	03/01/2014
Termination Date:	07/31/2015
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	66 - NPDES Based on Flow
Direction/Voice:	Passive
Enforcement Id(EID):	399232
Region:	8
Order / Resolution Number:	R8-2014-0080
Enforcement Action Type:	Admin Civil Liability

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

Effective Date:	12/22/2014
Adoption/Issuance Date:	12/22/2014
Achieve Date:	Not reported
Termination Date:	01/30/2015
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	ACL R8-2014-0080 for Los Alamitos Race Course
Description:	Enforcement action towards Discharger is due to a non-stormwater unauthorized discharge.
Program:	ANIWSTOTH
Latest Milestone Completion Date:	2015-01-30
# Of Programs1:	1
Total Assessment Amount:	9890
Initial Assessed Amount:	9890
Liability \$ Amount:	9890
Project \$ Amount:	0
Liability \$ Paid:	9890
Project \$ Completed:	0
Total \$ Paid/Completed Amount:	9890
Region:	8
Facility Id:	259101
Agency Name:	Los Alamitos Race Course
Place Type:	Service/Commercial
Place Subtype:	Service/Commercial Site, NEC
Facility Type:	Industrial
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	33.80311
Place Longitude:	-118.044244
SIC Code 1:	7948
SIC Desc 1:	Racing, Including Track Operations
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	6.49999999
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Stormwater runoff
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	ANIWSTOTH
Program Category1:	ANIMALWASTE
Program Category2:	ANIMALWASTE
# Of Programs:	1

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

WDID: 8 301432001  
Reg Measure Id: 364287  
Reg Measure Type: NPDES Permits  
Region: 8  
Order #: R8-2009-0017  
Npdes# CA#: CA0106348  
Major-Minor: Minor  
Npdes Type: OTH  
Reclamation: N - No  
Dredge Fill Fee: Not reported  
301H: N  
Application Fee Amt Received: Not reported  
Status: Historical  
Status Date: 08/06/2015  
Effective Date: 03/27/2009  
Expiration/Review Date: 03/01/2014  
Termination Date: 07/31/2015  
WDR Review - Amend: Not reported  
WDR Review - Revise/Renew: Not reported  
WDR Review - Rescind: Not reported  
WDR Review - No Action Required: Not reported  
WDR Review - Pending: Not reported  
WDR Review - Planned: Not reported  
Status Enrollee: N  
Individual/General: I  
Fee Code: 66 - NPDES Based on Flow  
Direction/Voice: Passive  
Enforcement Id(EID): 398238  
Region: 8  
Order / Resolution Number: Not reported  
Enforcement Action Type: Staff Enforcement Letter  
Effective Date: 09/24/2014  
Adoption/Issuance Date: 09/24/2014  
Achieve Date: Not reported  
Termination Date: Not reported  
ACL Issuance Date: Not reported  
EPL Issuance Date: Not reported  
Status: Active  
Title: SEL 09/24/2014 for Los Alamitos Race Course  
Description: Not reported  
Program: ANIWSTOTH  
Latest Milestone Completion Date: Not reported  
# Of Programs1: 1  
Total Assessment Amount: 0  
Initial Assessed Amount: 0  
Liability \$ Amount: 0  
Project \$ Amount: 0  
Liability \$ Paid: 0  
Project \$ Completed: 0  
Total \$ Paid/Completed Amount: 0

**HIST CORTESE:**

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083001061T

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

**NPDES:**

Facility Status: Not reported  
NPDES Number: Not reported  
Region: Not reported  
Agency Number: Not reported  
Regulatory Measure ID: Not reported  
Place ID: Not reported  
Order Number: Not reported  
WDID: 8 30C360370  
Regulatory Measure Type: Construction  
Program Type: Not reported  
Adoption Date Of Regulatory Measure: Not reported  
Effective Date Of Regulatory Measure: Not reported  
Termination Date Of Regulatory Measure: Not reported  
Expiration Date Of Regulatory Measure: Not reported  
Discharge Address: Not reported  
Discharge Name: Not reported  
Discharge City: Not reported  
Discharge State: Not reported  
Discharge Zip: Not reported  
Status: Terminated  
Status Date: 10/12/2015  
Operator Name: Los alamos Race Course  
Operator Address: 4961  
Operator City: Los Alamitos  
Operator State: California  
Operator Zip: 90720

**NPDES as of 03/2018:**

NPDES Number: Not reported  
Status: Not reported  
Agency Number: Not reported  
Region: 8  
Regulatory Measure ID: 411471  
Order Number: Not reported  
Regulatory Measure Type: Construction  
Place ID: Not reported  
WDID: 8 30C360370  
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: 09/02/2015  
Discharge Name: Not reported  
Discharge Address: Not reported  
Discharge City: Not reported  
Discharge State: Not reported  
Discharge Zip: Not reported  
Received Date: 02/07/2011  
Processed Date: 02/09/2011  
Status: Terminated  
Status Date: 10/12/2015  
Place Size: 38.9  
Place Size Unit: Acres  
Contact: Frank Sherren  
Contact Title: Facility Manager  
Contact Phone: 714-820-2715

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

Contact Phone Ext:	Not reported
Contact Email:	fsherren@losalamitos.com
Operator Name:	Los alamitos Race Course
Operator Address:	4961
Operator City:	Los Alamitos
Operator State:	California
Operator Zip:	90720
Operator Contact:	Frank Sherren
Operator Contact Title:	Not reported
Operator Contact Phone:	714-820-2800
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	fsherren@losalamitos.com
Operator Type:	Private Business
Developer:	Los alamitos Race Course
Developer Address:	4961 Katella Ave
Developer City:	Los Alamitos
Developer State:	California
Developer Zip:	90720
Developer Contact:	Frank Sherren
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	N
Emergency Phone:	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 Commercial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	institutional
Constype Other Ind:	Y
Constype Recons Ind:	Y
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:	Not reported
Certifier:	Frank Sherren
Certifier Title:	Facility Manager
Certification Date:	07-FEB-11
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000002
Status:	Terminated
Agency Number:	0
Region:	8
Regulatory Measure ID:	411471
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 30C360370

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	02/09/2011
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/02/2015
Discharge Name:	Los alamos Race Course
Discharge Address:	4961
Discharge City:	Los Alamos
Discharge State:	California
Discharge Zip:	90720
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
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:	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:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	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 Commercial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	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

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RACE COURSE (Continued)**

**S100723265**

Constype Water Sewer Ind: Not reported  
Dir Discharge Uswater Ind: Not reported  
Receiving Water Name: Not reported  
Certifier: Not reported  
Certifier Title: Not reported  
Certification Date: Not reported  
Primary Sic: Not reported  
Secondary Sic: Not reported  
Tertiary Sic: Not reported

**CIWQS:**

Agency: Los alamos Race Course  
Agency Address: 4961 Katella ave, Los Alamitos, CA 90720  
Place/Project Type: Construction - Other: institutional, Reconstruction  
SIC/NAICS: Not reported  
Region: 8  
Program: CONSTW  
Regulatory Measure Status: Terminated  
Regulatory Measure Type: Storm water construction  
Order Number: 2009-0009-DWQ  
WDID: 8 30C360370  
NPDES Number: CAS000002  
Adoption Date: Not reported  
Effective Date: 02/09/2011  
Termination Date: 09/02/2015  
Expiration/Review Date: Not reported  
Design Flow: Not reported  
Major/Minor: Not reported  
Complexity: Not reported  
TTWQ: Not reported  
Enforcement Actions within 5 years: 0  
Violations within 5 years: 0  
Latitude: 33.807234  
Longitude: -118.050132

**B21**  
**WSW**  
**< 1/8**  
**0.105 mi.**  
**552 ft.**

**ISLAND CLEANERS**  
**4959 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**

**Site 9 of 10 in cluster B**

**EDR Hist Cleaner** **1020010145**  
**N/A**

**Relative:**  
**Lower**

**EDR Hist Cleaner**

**Actual:**  
**31 ft.**

Year:	Name:	Type:
2005	ISLAND CLEANERS	Drycleaning Plants, Except Rugs, NEC
2006	ISLAND CLEANERS	Drycleaning Plants, Except Rugs, NEC
2007	ISLAND CLEANERS	Drycleaning Plants, Except Rugs, NEC
2008	ISLAND CLEANERS	Drycleaning Plants, Except Rugs, NEC
2009	ISLAND CLEANERS	Drycleaning Plants, Except Rugs, NEC

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

EDR ID Number  
EPA ID Number

**B22**  
**WSW**  
**< 1/8**  
**0.105 mi.**  
**555 ft.**

**OFFICE DEPOT 2281**  
**4955 KATELLA AVE**  
**LOS ALAMITOS, CA 90720**

**Site 10 of 10 in cluster B**

**RCRA NonGen / NLR**    **1024856648**  
**CAL000420839**

**Relative:**  
**Lower**

RCRA NonGen / NLR:

**Actual:**  
**31 ft.**

Date form received by agency: 10/10/2016  
Facility name: OFFICE DEPOT 2281  
Facility address: 4955 KATELLA AVE  
LOS ALAMITOS, CA 90720  
EPA ID: CAL000420839  
Mailing address: 6600 N MILITARY TRAIL C456  
BOCA RATON, FL 33496-0000  
Contact: ANA FERNANDEZ  
Contact address: 6600 N MILITARY TRAIL C456  
BOCA RATON, FL 33496  
Contact country: Not reported  
Contact telephone: 561-438-7903  
Contact email: ANA.FERNANDEZ@OFFICEDEPOT.COM  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: OFFICE DEPOT INC  
Owner/operator address: 6600 N MILITARY TRAIL  
BOCA RATON, FL 33496  
Owner/operator country: Not reported  
Owner/operator telephone: 561-438-4800  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported  
  
Owner/operator name: ANA FERNANDEZ  
Owner/operator address: 6600 N MILITARY TRAIL C456  
BOCA RATON, FL 33496  
Owner/operator country: Not reported  
Owner/operator telephone: 561-438-7903  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: Yes  
Treater, storer or disposer of HW: No  
Underground injection activity: No



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

OFFICE DEPOT 2281 (Continued)

1024856648

On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

23  
WNW  
< 1/8  
0.107 mi.  
566 ft.

CYPRESS GOLF CLUB  
4921 KATELLA  
CYPRESS, CA 90630

LUST S106387355  
NPDES N/A

Relative:  
Lower  
Actual:  
31 ft.

LUST:

Lead Agency: ORANGE COUNTY LOP  
Case Type: LUST Cleanup Site  
Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605997341](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605997341)  
Global Id: T0605997341  
Latitude: 33.809751502  
Longitude: -118.054133715  
Status: Completed - Case Closed  
Status Date: 01/16/2007  
Case Worker: TE  
RB Case Number: Not reported  
Local Agency: ORANGE COUNTY LOP  
File Location: Local Agency Warehouse  
Local Case Number: 04UT011  
Potential Media Affect: Other Groundwater (uses other than drinking water)  
Potential Contaminants of Concern: Gasoline  
Site History: Not reported

LUST:

Global Id: T0605997341  
Contact Type: Regional Board Caseworker  
Contact Name: ROSE SCOTT  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: [rose.scott@waterboards.ca.gov](mailto:rose.scott@waterboards.ca.gov)  
Phone Number: 9513206375

Global Id: T0605997341  
Contact Type: Local Agency Caseworker  
Contact Name: TAMARA ESCOBEDO  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 EAST DYER ROAD SUITE 120  
City: SANTA ANA  
Email: [tescobedo@ochca.com](mailto:tescobedo@ochca.com)  
Phone Number: 7144336251

LUST:

Global Id: T0605997341  
Action Type: Other  
Date: 03/22/2004

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Action:	Leak Reported
Global Id:	T0605997341
Action Type:	Other
Date:	03/02/2004
Action:	Leak Discovery
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	03/15/2006
Action:	Staff Letter
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	03/22/2004
Action:	Notice of Responsibility
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	05/14/2004
Action:	Staff Letter
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	06/17/2005
Action:	Staff Letter
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	08/19/2005
Action:	Staff Letter
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	01/16/2007
Action:	Closure/No Further Action Letter
Global Id:	T0605997341
Action Type:	Other
Date:	03/02/2004
Action:	Leak Stopped
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	05/09/2006
Action:	Staff Letter
Global Id:	T0605997341
Action Type:	ENFORCEMENT
Date:	08/05/2004
Action:	Staff Letter
LUST:	
Global Id:	T0605997341
Status:	Completed - Case Closed
Status Date:	01/16/2007

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Global Id: T0605997341  
Status: Open - Case Begin Date  
Status Date: 03/02/2004

Global Id: T0605997341  
Status: Open - Site Assessment  
Status Date: 03/02/2004

Global Id: T0605997341  
Status: Open - Site Assessment  
Status Date: 04/27/2004

Global Id: T0605997341  
Status: Open - Site Assessment  
Status Date: 06/11/2004

Global Id: T0605997341  
Status: Open - Verification Monitoring  
Status Date: 03/31/2005

**ORANGE CO. LUST:**

Region: ORANGE  
Facility Id: 04UT011  
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded  
Date Closed: 01/16/2007  
Record ID: RO0003288

**LUST REG 8:**

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Preliminary site assessment underway  
Case Number: Not reported  
Local Case Num: 04UT011  
Case Type: Other ground water affected  
Substance: Gasoline  
Qty Leaked: 0  
Abate Method: Not reported  
Cross Street: Not reported  
Enf Type: SEL  
Funding: Not reported  
How Discovered: Tank Closure  
How Stopped: Close Tank  
Leak Cause: Unknown  
Leak Source: Tank  
Global ID: T0605997341  
How Stopped Date: 3/2/2004  
Enter Date: Not reported  
Date Confirmation of Leak Began: 3/2/2004  
Date Preliminary Assessment Began: 6/11/2004  
Discover Date: 3/2/2004  
Enforcement Date: Not reported  
Close Date: Not reported  
Date Prelim Assessment Workplan Submitted: 4/27/2004  
Date Pollution Characterization Began: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	0
Longitude:	0
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
MTBE Class:	*
Staff:	Not reported
Staff Initials:	AR
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

**NPDES:**

Facility Status:	Active
NPDES Number:	CAS000002
Region:	8
Agency Number:	0
Regulatory Measure ID:	485988
Place ID:	Not reported
Order Number:	2009-0009-DWQ
WDID:	8 30C379769
Regulatory Measure Type:	Enrollee
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/09/2017
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	4695 MacArthur Court
Discharge Name:	William Lyon Home Inc
Discharge City:	Newport Beach
Discharge State:	California
Discharge Zip:	92660
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	485988
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	8 30C379769
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/04/2017
Processed Date:	05/09/2017
Status:	Active
Status Date:	05/09/2017
Place Size:	32.92
Place Size Unit:	Acres
Contact:	Bryan Bergeron
Contact Title:	Offsite Construction Manager
Contact Phone:	949-476-5441
Contact Phone Ext:	Not reported
Contact Email:	Bryan.Bergeron@LyonHomes.com
Operator Name:	William Lyon Home Inc
Operator Address:	4695 MacArthur Court
Operator City:	Newport Beach
Operator State:	California
Operator Zip:	92660
Operator Contact:	Bryan Bergeron
Operator Contact Title:	Offsite Construction Manager
Operator Contact Phone:	949-476-5441
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Bryan.Bergeron@LyonHomes.com
Operator Type:	Private Business
Developer:	William Lyon Home Inc
Developer Address:	4695 MacArthur Court
Developer City:	Newport Beach
Developer State:	California
Developer Zip:	92660
Developer Contact:	Bryan Bergeron
Developer Contact Title:	Offsite Construction Manager
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commercial Ind:	Y

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Not reported
Constype Other Ind:	N
Constype Recons Ind:	N
Constype Residential Ind:	Y
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Carbon Canyon Creek
Certifier:	Bryan Bergeron
Certifier Title:	Offsite Construction Manager
Certification Date:	04-MAY-17
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000002
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	485988
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 30C379769
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/09/2017
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	William Lyon Home Inc
Discharge Address:	4695 MacArthur Court
Discharge City:	Newport Beach
Discharge State:	California
Discharge Zip:	92660
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
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:	Not reported
Operator Contact Title:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	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 Commercial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	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:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 30C379769
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	05/09/2017
Operator Name:	William Lyon Home Inc
Operator Address:	4695 MacArthur Court
Operator City:	Newport Beach
Operator State:	California
Operator Zip:	92660
NPDES as of 03/2018:	
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	485988
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	8 30C379769
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/04/2017
Processed Date:	05/09/2017
Status:	Active
Status Date:	05/09/2017
Place Size:	32.92
Place Size Unit:	Acres
Contact:	Bryan Bergeron
Contact Title:	Offsite Construction Manager
Contact Phone:	949-476-5441
Contact Phone Ext:	Not reported
Contact Email:	Bryan.Bergeron@LyonHomes.com
Operator Name:	William Lyon Home Inc
Operator Address:	4695 MacArthur Court
Operator City:	Newport Beach
Operator State:	California
Operator Zip:	92660
Operator Contact:	Bryan Bergeron
Operator Contact Title:	Offsite Construction Manager
Operator Contact Phone:	949-476-5441
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Bryan.Bergeron@LyonHomes.com
Operator Type:	Private Business
Developer:	William Lyon Home Inc
Developer Address:	4695 MacArthur Court
Developer City:	Newport Beach
Developer State:	California
Developer Zip:	92660
Developer Contact:	Bryan Bergeron



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Developer Contact Title:	Offsite Construction Manager
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commercial Ind:	Y
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Not reported
Constype Other Ind:	N
Constype Recons Ind:	N
Constype Residential Ind:	Y
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Carbon Canyon Creek
Certifier:	Bryan Bergeron
Certifier Title:	Offsite Construction Manager
Certification Date:	04-MAY-17
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000002
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	485988
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 30C379769
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/09/2017
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	William Lyon Home Inc
Discharge Address:	4695 MacArthur Court
Discharge City:	Newport Beach
Discharge State:	California
Discharge Zip:	92660
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CYPRESS GOLF CLUB (Continued)**

**S106387355**

Contact Phone Ext:	Not reported
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:	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:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	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 Commercial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	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:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**D24**  
**ESE**  
**< 1/8**  
**0.111 mi.**  
**586 ft.**

**REPLANET LLC**  
**5401 KATELLA AVE**  
**CYPRESS, CA 90720**

**Site 1 of 2 in cluster D**

**SWRCY**  
**CHMIRS**

**S109039828**  
**N/A**

**Relative:**  
**Higher**

**Actual:**  
**33 ft.**

SWRCY:

Reg Id: 218172  
Cert Id: RC218172.001  
Mailing Address: 800 N Haven Ave Suite 120  
Mailing City: Ontario  
Mailing State: CA  
Mailing Zip Code: 91764  
Website: <http://www.replanet.com>  
Email: Not reported  
Phone Number: (877) 737-5263  
Rural: N  
Operation Begin Date: 11/01/2014  
Aluminium: Y  
Glass: Y  
Plastic: Y  
Bimetal: Y  
Hours of Operation: Mon Closed; Tue - Sat 10:00 am - 4:30 pm, Closed 1:00 pm - 1:30 pm; Sun Closed  
Organization ID: 151891  
Organization Name: rePlanet LLC

CHMIRS:

OES Incident Number: 6-3429  
OES notification: 06/09/2006  
OES Date: Not reported  
OES Time: Not reported  
**Date Completed: Not reported**  
Property Use: Not reported  
Agency Id Number: Not reported  
Agency Incident Number: Not reported  
Time Notified: Not reported  
Time Completed: Not reported  
Surrounding Area: Not reported  
Estimated Temperature: Not reported  
Property Management: Not reported  
More Than Two Substances Involved?: Not reported  
Resp Agncy Personel # Of Decontaminated: Not reported  
Responding Agency Personel # Of Injuries: Not reported  
Responding Agency Personel # Of Fatalities: Not reported  
Others Number Of Decontaminated: Not reported  
Others Number Of Injuries: Not reported  
Others Number Of Fatalities: Not reported  
Vehicle Make/year: Not reported  
Vehicle License Number: Not reported  
Vehicle State: Not reported  
Vehicle Id Number: Not reported  
CA DOT PUC/ICC Number: Not reported  
Company Name: Not reported  
Reporting Officer Name/ID: Not reported  
Report Date: Not reported  
Facility Telephone: Not reported  
Waterway Involved: Not reported  
Waterway: Not reported  
Spill Site: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**REPLANET LLC (Continued)**

**S109039828**

Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2006
Agency:	Bills Sound Security / Costco
Incident Date:	6/9/2006 12:00:00 AM
Admin Agency:	Orange County Emergency Management Div
Amount:	Not reported
Contained:	Unknown
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	Freon Gas
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:	Caller advised that an alarm panel is emitting a signal notifying them of a Freon gas release.

D25  
ESE  
< 1/8  
0.111 mi.  
586 ft.

**COSTCO WHOLESALE #748**  
**5401 KATELLA AVE**  
**CYPRESS, CA 90720**

**Site 2 of 2 in cluster D**

**Relative:**  
**Higher**

**Actual:**  
**33 ft.**

UST:  
Facility ID: FA0064582  
Permitting Agency: Orange County Environmental Health  
Latitude: 33.80311  
Longitude: -118.03848

**UST U004263286**  
**N/A**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

EDR ID Number  
EPA ID Number

C26  
SSE  
< 1/8  
0.123 mi.  
647 ft.

ENVIROCON INC  
11082 WINNERS CIRCLE  
LOS ALAMITOS, CA 90720

RCRA NonGen / NLR  
FINDS  
ECHO

1000594790  
CAD983586744

Site 3 of 3 in cluster C

Relative:  
Lower

RCRA NonGen / NLR:

Actual:  
31 ft.

Date form received by agency: 10/20/2004  
Facility name: ENVIROCON INC  
Facility address: 11082 WINNERS CIRCLE  
STE B  
LOS ALAMITOS, CA 90720  
EPA ID: CAD983586744  
Mailing address: PO BOX 5367  
LOS ALAMITOS, CA 90720  
Contact: DAVID A ADAMS  
Contact address: PO BOX 5367  
LOS ALAMITOS, CA 90720  
Contact country: US  
Contact telephone: 562-799-7015  
Telephone ext.: 24  
Contact email: Not reported  
EPA Region: 09  
Land type: Private  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: DAVID ADAMS  
Owner/operator address: Not reported  
Not reported  
Owner/operator country: US  
Owner/operator telephone: Not reported  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: 09/15/2001  
Owner/Op end date: Not reported  
  
Owner/operator name: SANTA FE PROPERTIES  
Owner/operator address: Not reported  
Not reported  
Owner/operator country: US  
Owner/operator telephone: Not reported  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: 09/15/2001  
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

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ENVIROCON INC (Continued)**

**1000594790**

Transporter of hazardous waste: Yes  
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: 06/27/1991  
Site name: ENVIROCON INC  
Classification: Not a generator, verified

Facility Has Received Notices of Violations:

Regulation violated: Not reported  
Area of violation: Transporters - Manifest and Recordkeeping  
Date violation determined: 09/10/2002  
Date achieved compliance: 11/19/2002  
Violation lead agency: State  
Enforcement action: SINGLE SITE CA/FO  
Enforcement action date: 02/11/2003  
Enf. disposition status: Not reported  
Enf. disp. status date: Not reported  
Enforcement lead agency: State  
Proposed penalty amount: Not reported  
Final penalty amount: 16600  
Paid penalty amount: Not reported

Regulation violated: Not reported  
Area of violation: Transporters - Manifest and Recordkeeping  
Date violation determined: 09/10/2002  
Date achieved compliance: 11/01/2002  
Violation lead agency: State  
Enforcement action: WRITTEN INFORMAL  
Enforcement action date: 09/10/2002  
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: Transporters - General  
Date violation determined: 09/10/2002  
Date achieved compliance: 11/01/2002  
Violation lead agency: State  
Enforcement action: WRITTEN INFORMAL  
Enforcement action date: 09/10/2002  
Enf. disposition status: Not reported  
Enf. disp. status date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ENVIROCON INC (Continued)**

**1000594790**

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: Transporters - Manifest and Recordkeeping  
Date violation determined: 09/10/2002  
Date achieved compliance: 11/19/2002  
Violation lead agency: State  
Enforcement action: WRITTEN INFORMAL  
Enforcement action date: 09/10/2002  
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

**Evaluation Action Summary:**

Evaluation date: 11/19/2002  
Evaluation: NOT A SIGNIFICANT NON-COMPLIER  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

Evaluation date: 09/10/2002  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Transporters - Manifest and Recordkeeping  
Date achieved compliance: 11/19/2002  
Evaluation lead agency: State

Evaluation date: 09/10/2002  
Evaluation: SIGNIFICANT NON-COMPLIER  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

Evaluation date: 09/10/2002  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Transporters - General  
Date achieved compliance: 11/01/2002  
Evaluation lead agency: State

Evaluation date: 09/10/2002  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Transporters - Manifest and Recordkeeping  
Date achieved compliance: 11/01/2002  
Evaluation lead agency: State

**FINDS:**

Registry ID: 110064126565

**Environmental Interest/Information System**

NCDB (National Compliance Data Base) supports implementation of the  
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ENVIROCON INC (Continued)**

**1000594790**

Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**

Envid: 1000594790  
Registry ID: 110064126565  
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110064126565>

**27**  
**South**  
**1/8-1/4**  
**0.145 mi.**  
**766 ft.**

**GEORGE TOWNSHEND SFR**  
**11132 MINDORA STREET**  
**LOS ALAMITOS, CA 90720**

**RCRA NonGen / NLR** **1024762928**  
**CAC002982790**

**Relative:**  
**Lower**

**Actual:**  
**31 ft.**

**RCRA NonGen / NLR:**

Date form received by agency: 10/01/2018  
Facility name: GEORGE TOWNSHEND SFR  
Facility address: 11132 MINDORA STREET  
LOS ALAMITOS, CA 90720  
EPA ID: CAC002982790  
Contact: GEORGE TOWNSHEND  
Contact address: 11132 MINDORA STREET  
LOS ALAMITOS, CA 90720  
Contact country: Not reported  
Contact telephone: 562-225-3590  
Contact email: GTOWNSHEND@GMAIL.COM  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

**Owner/Operator Summary:**

Owner/operator name: GEORGE TOWNSHEND  
Owner/operator address: 11132 MINDORA STREET  
LOS ALAMITOS, CA 90720  
Owner/operator country: Not reported  
Owner/operator telephone: 562-225-3590  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: GEORGE TOWNSHEND



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**GEORGE TOWNSHEND SFR (Continued)**

**1024762928**

Owner/operator address: 11132 MINDORA STREET  
LOS ALAMITOS, CA 90720  
Owner/operator country: Not reported  
Owner/operator telephone: 562-225-3590  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**E28**  
**ENE**  
**1/8-1/4**  
**0.170 mi.**  
**896 ft.**

**COSTCO WHOLESALE #748 (GAS STATION)**  
**10901 WALKER ST**  
**CYPRESS, CA 90630**  
**Site 1 of 2 in cluster E**

**UST U004004601**  
**N/A**

**Relative:**  
**Higher**  
**Actual:**  
**36 ft.**

UST:  
Facility ID: FA0045719  
Permitting Agency: Orange County Environmental Health  
Latitude: 33.80443  
Longitude: -118.03713

ORANGE CO. UST:  
Facility ID: FA0045719

**E29**  
**ENE**  
**1/8-1/4**  
**0.170 mi.**  
**896 ft.**

**COSTCO WHOLESALE NO 748**  
**5401 KATELLA AVE**  
**CYPRESS, CA 90630**  
**Site 2 of 2 in cluster E**

**RCRA-LQG 1007989088**  
**HAZNET CAR000160200**

**Relative:**  
**Higher**  
**Actual:**  
**36 ft.**

RCRA-LQG:  
Date form received by agency: 03/01/2018  
Facility name: COSTCO WHOLESALE NO 748  
Facility address: 5401 KATELLA AVE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

EPA ID: CYPRESS, CA 90630-0000  
CAR000160200  
Mailing address: GREY HAWK CT, SUITE 200  
CA90720 CA059US 3207  
CARLSBAD, CA 92010  
Contact: ROSE THOMPSON  
Contact address: LAKE DR  
ISSAQUAH, WA 98027  
Contact country: US  
Contact telephone: 425-313-6674  
Contact email: RTHOMPSON@COSTCO.COM  
EPA Region: 09  
Classification: Large Quantity Generator  
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

**Owner/Operator Summary:**

Owner/operator name: COSTCO WHOLESALE CORPORATION  
Owner/operator address: LAKE DR  
ISSAQUAH, WA 98027  
Owner/operator country: US  
Owner/operator telephone: 425-313-8100  
Owner/operator email: RTHOMPSON@COSTCO.COM  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: 07/14/2005  
Owner/Op end date: Not reported

Owner/operator name: COSTCO WHOLESALE CORPORATION  
Owner/operator address: LAKE DR  
ISSAQUAH, WA 98027  
Owner/operator country: US  
Owner/operator telephone: 425-313-8100  
Owner/operator email: RTHOMPSON@COSTCO.COM  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: 09/03/2004  
Owner/Op end date: Not reported

Owner/operator name: COSTCO WHOLESALE CORP  
Owner/operator address: Not reported  
Not reported  
Owner/operator country: US

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

Owner/operator telephone: Not reported  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: 07/14/2005  
Owner/Op end date: Not reported

Owner/operator name: COSTCO WHOLESALE CORP  
Owner/operator address: 999 LAKE DR  
ISSAQUAH, WA 98027

Owner/operator country: US  
Owner/operator telephone: 425-313-8100  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: 09/03/2004  
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: 122  
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: U279  
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U200  
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID,  
11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER,  
(3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U150  
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U089  
. Waste name: DIETHYLSTILBESTEROL (OR) PHENOL, 4,4'-(1,2-DIETHYL-1,2-ETHENEDIYL)BIS,  
(E)-

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

- . Waste code: U075
- . Waste name: DICHLORODIFLUOROMETHANE (OR) METHANE, DICHLORODIFLUORO-
- . Waste code: U059
- . Waste name: 5,12-NAPHTHACENEDIONE,  
8-ACETYL-10-[(3-AMINO-2,3,6-TRIDEOXY)-ALPHA-L-LYXO-HEXOPYRANOSYL)OXY]-  
7,8,9,10-TETRAHYDRO-6,8,11-TRIHYDROXY-1-METHOXY-, (8S-CIS)- (OR)  
DAUNOMYCIN
- . Waste code: U058
- . Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-,  
2-OXIDE (OR) CYCLOPHOSPHAMIDE
- . Waste code: U057
- . Waste name: CYCLOHEXANONE (I)
- . Waste code: U044
- . Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-
- . Waste code: U035
- . Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL
- . Waste code: U034
- . Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL
- . Waste code: U015
- . Waste name: AZASERINE (OR) L-SERINE, DIAZOACETATE (ESTER)
- . Waste code: U010
- . Waste name: AZIRINO [2',3':3,4]PYRROLO[1,2-A]INDOLE-4,7-DIONE,  
6-AMINO-8-[[[(AMINOCARBONYL)OXY]METHYL]-1,1A,2,8,8A,8B-HEXAHYDRO-8A-MET  
HOXY-5-METHYL-, [1AS-(1AALPHA, 8BETA, 8AALPHA, 8BALPHA)]- (OR)  
MITOMYCIN C
- . Waste code: 141
- . Waste name: Off-specification, aged, or surplus inorganics
- . Waste code: 181
- . Waste name: Other inorganic solid waste
- . Waste code: 214
- . Waste name: Unspecified solvent mixture
- . Waste code: 311
- . Waste name: Pharmaceutical waste
- . Waste code: 331
- . Waste name: Off-specification, aged, or surplus organics
- . Waste code: 791
- . Waste name: Liquids with pH < 2
- . Waste code: D001
- . Waste name: IGNITABLE WASTE
- . Waste code: D002
- . Waste name: CORROSIVE WASTE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

- . Waste code: D004
- . Waste name: ARSENIC
  
- . Waste code: D005
- . Waste name: BARIUM
  
- . Waste code: D007
- . Waste name: CHROMIUM
  
- . Waste code: D008
- . Waste name: LEAD
  
- . Waste code: D009
- . Waste name: MERCURY
  
- . Waste code: D010
- . Waste name: SELENIUM
  
- . Waste code: D011
- . Waste name: SILVER
  
- . Waste code: D013
- . Waste name: LINDANE (1,2,3,4,5,6-HEXA-CHLOROCYCLOHEXANE, GAMMA ISOMER)
  
- . Waste code: D016
- . Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)
  
- . Waste code: D022
- . Waste name: CHLOROFORM
  
- . Waste code: D024
- . Waste name: M-CRESOL
  
- . Waste code: D026
- . Waste name: CRESOL
  
- . Waste code: D035
- . Waste name: METHYL ETHYL KETONE
  
- . Waste code: P001
- . Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%
  
- . Waste code: P075
- . Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-(S)-, & SALTS

**Historical Generators:**

Date form received by agency: 08/08/2016  
Site name: COSTCO WHOLESALE # 748  
Classification: Large Quantity Generator

- . Waste code: 122
- . Waste name: Alkaline solution without metals (pH > 12.5)
  
- . Waste code: 131

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

- . Waste name: Aqueous solution (2 < pH < 12.5) containing reactive anions (azide, bromate, chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)
- . Waste code: 141
- . Waste name: Off-specification, aged, or surplus inorganics
- . Waste code: 181
- . Waste name: Other inorganic solid waste
- . Waste code: 214
- . Waste name: Unspecified solvent mixture
- . Waste code: 311
- . Waste name: Pharmaceutical waste
- . Waste code: 331
- . Waste name: Off-specification, aged, or surplus organics
- . Waste code: 352
- . Waste name: Other organic solids
- . Waste code: D001
- . Waste name: IGNITABLE WASTE
- . Waste code: D002
- . Waste name: CORROSIVE WASTE
- . Waste code: D009
- . Waste name: MERCURY
- . Waste code: D010
- . Waste name: SELENIUM
- . Waste code: D011
- . Waste name: SILVER
- . Waste code: D016
- . Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)
- . Waste code: D018
- . Waste name: BENZENE
- . Waste code: P001
- . Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%
- . Waste code: P075
- . Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

Date form received by agency: 05/05/2014

Site name: COSTCO WHOLESALE NO 748

Classification: Large Quantity Generator

- . Waste code: 122

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

- . Waste name: Alkaline solution without metals (pH > 12.5)
- . Waste code: U034
- . Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL
- . Waste code: P075
- . Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-(S)-, & SALTS
- . Waste code: P001
- . Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%
- . Waste code: F003
- . Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
- . Waste code: D035
- . Waste name: METHYL ETHYL KETONE
- . Waste code: D026
- . Waste name: CRESOL
- . Waste code: D024
- . Waste name: M-CRESOL
- . Waste code: D018
- . Waste name: BENZENE
- . Waste code: D011
- . Waste name: SILVER
- . Waste code: D010
- . Waste name: SELENIUM
- . Waste code: D009
- . Waste name: MERCURY
- . Waste code: D008
- . Waste name: LEAD
- . Waste code: D007
- . Waste name: CHROMIUM
- . Waste code: D006
- . Waste name: CADMIUM
- . Waste code: D003

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

. Waste name:	REACTIVE WASTE
. Waste code:	D002
. Waste name:	CORROSIVE WASTE
. Waste code:	D001
. Waste name:	IGNITABLE WASTE
. Waste code:	791
. Waste name:	Liquids with pH < 2
. Waste code:	611
. Waste name:	Contaminated soil from site clean-ups
. Waste code:	561
. Waste name:	Detergent and soap
. Waste code:	541
. Waste name:	Photochemicals / photo processing waste
. Waste code:	352
. Waste name:	Other organic solids
. Waste code:	343
. Waste name:	Unspecified organic liquid mixture
. Waste code:	331
. Waste name:	Off-specification, aged, or surplus organics
. Waste code:	311
. Waste name:	Pharmaceutical waste
. Waste code:	291
. Waste name:	Latex waste
. Waste code:	281
. Waste name:	Adhesives
. Waste code:	272
. Waste name:	Polymeric resin waste
. Waste code:	271
. Waste name:	Organic monomer waste (includes unreacted resins)
. Waste code:	232
. Waste name:	Pesticides and other waste associated with pesticide production
. Waste code:	223
. Waste name:	Unspecified oil-containing waste
. Waste code:	221
. Waste name:	Waste oil and mixed oil
. Waste code:	214
. Waste name:	Unspecified solvent mixture
. Waste code:	213



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

- . Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
- . Waste code: 212
- . Waste name: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
- . Waste code: 211
- . Waste name: Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
- . Waste code: 181
- . Waste name: Other inorganic solid waste
- . Waste code: 172
- . Waste name: Metal dust (see 121) and machining waste
- . Waste code: 151
- . Waste name: Asbestos-containing waste
- . Waste code: 141
- . Waste name: Off-specification, aged, or surplus inorganics
- . Waste code: 135
- . Waste name: Unspecified aqueous solution
- . Waste code: 134
- . Waste name: Aqueous solution with <10% total organic residues
- . Waste code: 133
- . Waste name: Aqueous solution with 10% or more total organic residues
- . Waste code: 131
- . Waste name: Aqueous solution (2 < pH < 12.5) containing reactive anions (azide, bromate, chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)

Date form received by agency: 02/04/2005

Site name: COSTCO WHOLESALE NO 748

Classification: Small Quantity Generator

- . Waste code: D001
- . Waste name: IGNITABLE WASTE
- . Waste code: D018
- . Waste name: BENZENE
- . Waste code: D011
- . Waste name: SILVER

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:

- Waste code: D001
- Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET,

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Amount (Lbs): 1909

Waste code: D002

Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Amount (Lbs): 449

Waste code: D009

Waste name: MERCURY

Amount (Lbs): 20

Waste code: D010

Waste name: SELENIUM

Amount (Lbs): 71

Waste code: D011

Waste name: SILVER

Amount (Lbs): 71

Waste code: D016

Waste name: 2,4-D

Amount (Lbs): 42

Waste code: D018

Waste name: BENZENE

Amount (Lbs): 892

Waste code: P001

Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

Amount (Lbs): 10

Waste code: P075

Waste name: NICOTINE, & SALTS

Amount (Lbs): 19

Violation Status: No violations found

**HAZNET:**

Site Name: COSTCO WHOLESALE NO 748

Year: 2017

GEPAID: CAR000160200

Contact: LISA SIMPSON

Telephone: 4253136275

Mailing Name: Not reported

Mailing Address: 3207 GREY HAWK CT STE 200

Mailing City,St,Zip: CARLSBAD, CA 92010

Gen County: Orange

TSD EPA ID: NVT330010000

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

TSD County: 99  
Waste Category: Other organic solids  
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill( To Include On-Site Treatment And/Or Stabilization)  
Tons: 0.1175  
Cat Decode: Other organic solids  
Method Decode: Landfill Or Surface Impoundment That Will Be Closed As Landfill( To Include On-Site Treatment And/Or Stabilization)  
Facility County: Orange

Site Name: COSTCO WHOLESALE NO 748  
Year: 2017  
GEPAID: CAR000160200  
Contact: LISA SIMPSON  
Telephone: 4253136275  
Mailing Name: Not reported  
Mailing Address: 3207 GREY HAWK CT STE 200  
Mailing City,St,Zip: CARLSBAD, CA 92010  
Gen County: Orange  
TSD EPA ID: CAT080013352  
TSD County: Los Angeles  
Waste Category: Aqueous solution with total organic residues less than 10 percent  
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect  
Tons: 0.147  
Cat Decode: Aqueous solution with total organic residues less than 10 percent  
Method Decode: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect  
Facility County: Orange

Site Name: COSTCO WHOLESALE NO 748  
Year: 2017  
GEPAID: CAR000160200  
Contact: LISA SIMPSON  
Telephone: 4253136275  
Mailing Name: Not reported  
Mailing Address: 3207 GREY HAWK CT STE 200  
Mailing City,St,Zip: CARLSBAD, CA 92010  
Gen County: Orange  
TSD EPA ID: CAD008364432  
TSD County: Los Angeles  
Waste Category: Off-specification, aged or surplus organics  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.5595  
Cat Decode: Off-specification, aged or surplus organics  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Facility County: Orange

Site Name: COSTCO WHOLESALE NO 748  
Year: 2017  
GEPAID: CAR000160200  
Contact: LISA SIMPSON  
Telephone: 4253136275  
Mailing Name: Not reported  
Mailing Address: 3207 GREY HAWK CT STE 200

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COSTCO WHOLESALE NO 748 (Continued)**

**1007989088**

Mailing City,St,Zip: CARLSBAD, CA 92010  
Gen County: Orange  
TSD EPA ID: CAD008364432  
TSD County: Los Angeles  
Waste Category: Pharmaceutical waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.004  
Cat Decode: Pharmaceutical waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Facility County: Orange  
  
Site Name: COSTCO WHOLESALE NO 748  
Year: 2017  
GEPAID: CAR000160200  
Contact: LISA SIMPSON  
Telephone: 4253136275  
Mailing Name: Not reported  
Mailing Address: 3207 GREY HAWK CT STE 200  
Mailing City,St,Zip: CARLSBAD, CA 92010  
Gen County: Orange  
TSD EPA ID: CAD008364432  
TSD County: Los Angeles  
Waste Category: Unspecified solvent mixture  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.0535  
Cat Decode: Unspecified solvent mixture  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Facility County: Orange

[Click this hyperlink](#) while viewing on your computer to access  
94 additional CA\_HAZNET: record(s) in the EDR Site Report.

**F30**  
**SE**  
**1/8-1/4**  
**0.173 mi.**  
**913 ft.**

**COOLANT MANAGEMENT SERVICES CO INC**  
**11052 VIA EL MERCADO**  
**LOS ALAMITOS, CA 90720**

**RCRA NonGen / NLR 1024801384**  
**CAL000229936**

**Site 1 of 3 in cluster F**

**Relative:**  
**Higher**

RCRA NonGen / NLR:

**Actual:**  
**33 ft.**

Date form received by agency: 11/01/2001  
Facility name: COOLANT MANAGEMENT SERVICES CO INC  
Facility address: 11052 VIA EL MERCADO  
LOS ALAMITOS, CA 90720-0000  
EPA ID: CAL000229936  
Contact: MILES ARNOLD  
Contact address: 11052 VIA EL MERCADO  
LOS ALAMITOS, CA 90720  
Contact country: Not reported  
Contact telephone: 562-795-0470  
Contact email: MILES@COOLANTMANAGEMENT.COM  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COOLANT MANAGEMENT SERVICES CO INC (Continued)**

**1024801384**

Owner/Operator Summary:

Owner/operator name: MILES ARNOLD  
Owner/operator address: 11052 VIA EL MERCADO  
LOS ALAMITOS, CA 90720  
Owner/operator country: Not reported  
Owner/operator telephone: 562-795-0470  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: MILES ARNOLD  
Owner/operator address: 11052 VIA EL MERCADO  
LOS ALAMITOS, CA 90720  
Owner/operator country: Not reported  
Owner/operator telephone: 562-795-0470  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
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: Yes  
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  
Used oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**F31**  
**SE**  
**1/8-1/4**  
**0.173 mi.**  
**913 ft.**

**COOLANT MANAGEMENT SERVICES**  
**11052 VIA EL MERCADO**  
**LOS ALAMITOS, CA 90720**  
**Site 2 of 3 in cluster F**

**AST A100418996**  
**N/A**

**Relative:**  
**Higher**

AST:

**Actual:**  
**33 ft.**

Certified Unified Program Agencies: Not reported  
Owner: Same as above  
Total Gallons: Not reported  
CERSID: 10448128  
Facility ID: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**COOLANT MANAGEMENT SERVICES (Continued)**

**A100418996**

Business Name: Coolant Management Services  
Phone: 562-795-0470  
Fax: 562-795-0475  
Mailing Address: 11052 Via El Mercado  
Mailing Address City: Los Alamitos  
Mailing Address State: Ca  
Mailing Address Zip Code: 90720  
Operator Name: Miles Arnold  
Operator Phone: 714-323-5103  
Owner Phone: Not reported  
Owner Mail Address: Not reported  
Owner State: Not reported  
Owner Zip Code: Not reported  
Owner Country: United States  
Property Owner Name: Same as above  
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: United States  
EPAID: calooo229936

**F32**  
**SE**  
**1/8-1/4**  
**0.173 mi.**  
**913 ft.**

**11052 VIA EL MERCADO**  
**LOS ALAMITOS, CA**

**Site 3 of 3 in cluster F**

**AST A100336674**  
**N/A**

**Relative:**  
**Higher**

**AST:**

**Actual:**  
**33 ft.**

Certified Unified Program Agencies: Orange  
Owner: COOLANT MANAGEMENT SERVICES  
Total Gallons: 1,320  
CERSID: Not reported  
Facility ID: Not reported  
Business Name: Not reported  
Phone: Not reported  
Fax: Not reported  
Mailing Address: Not reported  
Mailing Address City: Not reported  
Mailing Address State: Not reported  
Mailing Address Zip Code: Not reported  
Operator Name: Not reported  
Operator Phone: Not reported  
Owner Phone: Not reported  
Owner Mail Address: Not reported  
Owner State: Not reported  
Owner Zip Code: Not reported  
Owner Country: Not reported  
Property Owner Name: Not reported  
Property Owner Phone: Not reported  
Property Owner Mailing Address: Not reported  
Property Owner City: Not reported  
Property Owner Stat : Not reported  
Property Owner Zip Code: Not reported  
Property Owner Country: Not reported  
EPAID: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

33  
ENE  
1/8-1/4  
0.224 mi.  
1183 ft.

**LTP MODERN MACHINE INC**  
**10900 WALKER ST**  
**CYPRESS, CA 90630**

RCRA NonGen / NLR

1024856727  
CAL000420984

**Relative:**  
**Higher**

RCRA NonGen / NLR:

**Actual:**  
**36 ft.**

Date form received by agency: 10/11/2016  
Facility name: LTP MODERN MACHINE INC  
Facility address: 10900 WALKER ST  
CYPRESS, CA 90630  
EPA ID: CAL000420984  
Contact: THANH PHAN  
Contact address: 10900 WALKER ST  
CYPRESS, CA 90630  
Contact country: Not reported  
Contact telephone: 562-795-1701  
Contact email: ALEX.GOMEZ@LTPMODERNMACHINE.COM  
EPA Region: 09  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: THANH PHAN  
Owner/operator address: 10900 WALKER ST  
CYPRESS, CA 90630  
Owner/operator country: Not reported  
Owner/operator telephone: 562-795-1701  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: LTP MODERN MACHINE INC  
Owner/operator address: 10900 WALKER ST  
CYPRESS, CA 90630  
Owner/operator country: Not reported  
Owner/operator telephone: 562-795-1701  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Other  
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: Yes  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LTP MODERN MACHINE INC (Continued)**

**1024856727**

Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Violation Status: No violations found

**G34  
NNW  
1/4-1/2  
0.393 mi.  
2073 ft.**

**ROBERT KAHN PROPERTY/FORMER HRAKO SRVC CNTR  
5001 CERRITOS  
CYPRESS, CA 90630  
Site 1 of 2 in cluster G**

**LUST S106447590  
N/A**

**Relative:  
Higher**

**LUST:**

**Actual:  
32 ft.**

Lead Agency: ORANGE COUNTY LOP  
Case Type: LUST Cleanup Site  
Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605901416](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901416)  
Global Id: T0605901416  
Latitude: 33.8104567  
Longitude: -118.0457035  
Status: Completed - Case Closed  
Status Date: 06/11/2002  
Case Worker: TE  
RB Case Number: 083001897T  
Local Agency: ORANGE COUNTY LOP  
File Location: Local Agency  
Local Case Number: 91UT095  
Potential Media Affect: Other Groundwater (uses other than drinking water)  
Potential Contaminants of Concern: Gasoline  
Site History: Not reported

**LUST:**

Global Id: T0605901416  
Contact Type: Regional Board Caseworker  
Contact Name: NANCY OLSON-MARTIN  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: [nolson-martin@waterboards.ca.gov](mailto:nolson-martin@waterboards.ca.gov)  
Phone Number: Not reported

Global Id: T0605901416  
Contact Type: Local Agency Caseworker  
Contact Name: TAMARA ESCOBEDO  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 EAST DYER ROAD SUITE 120  
City: SANTA ANA  
Email: [tescobedo@ochca.com](mailto:tescobedo@ochca.com)  
Phone Number: 7144336251

**LUST:**

Global Id: T0605901416  
Action Type: Other  
Date: 08/27/1991  
Action: Leak Reported



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ROBERT KAHN PROPERTY/FORMER HRAKO SRVC CNTR (Continued)**

**S106447590**

Global Id: T0605901416  
Action Type: REMEDIATION  
Date: 01/26/1998  
Action: Excavation

Global Id: T0605901416  
Action Type: Other  
Date: 08/27/1991  
Action: Leak Discovery

**LUST:**

Global Id: T0605901416  
Status: Completed - Case Closed  
Status Date: 06/11/2002

Global Id: T0605901416  
Status: Open - Case Begin Date  
Status Date: 08/27/1991

**ORANGE CO. LUST:**

Region: ORANGE  
Facility Id: 91UT095  
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded  
Date Closed: 06/11/2002  
Record ID: RO0000841

**LUST REG 8:**

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Case Closed  
Case Number: 083001897T  
Local Case Num: 91UT095  
Case Type: Other ground water affected  
Substance: Gasoline  
Qty Leaked: 0  
Abate Method: Not reported  
Cross Street: Not reported  
Enf Type: Not reported  
Funding: Not reported  
How Discovered: Tank Closure  
How Stopped: Close Tank  
Leak Cause: Unknown  
Leak Source: Unknown  
Global ID: T0605901416  
How Stopped Date: 9/9/9999  
Enter Date: Not reported  
Date Confirmation of Leak Began: Not reported  
Date Preliminary Assessment Began: Not reported  
Discover Date: 8/27/1991  
Enforcement Date: Not reported  
Close Date: 6/11/2002  
Date Prelim Assessment Workplan Submitted: Not reported  
Date Pollution Characterization Began: Not reported  
Date Remediation Plan Submitted: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ROBERT KAHN PROPERTY/FORMER HRAKO SRVC CNTR (Continued)**

**S106447590**

Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8104567
Longitude:	-118.0457035
MTBE Date:	12/11/2001
Max MTBE GW:	2.3
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	AR
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

**G35 UNOCAL #5330**  
**NNW 5001 BALL RD**  
**1/4-1/2 CYPRESS, CA 90630**  
**0.393 mi.**  
**2073 ft. Site 2 of 2 in cluster G**

**SWEEPS UST S101589119**  
**CA FID UST N/A**  
**HIST CORTESE**

**Relative:**  
**Higher**  
**Actual:**  
**32 ft.**

**SWEEPS UST:**

Status:	Active
Comp Number:	8661
Number:	9
Board Of Equalization:	44-016705
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-008661-000001
Tank Status:	A
Capacity:	500
Active Date:	Not reported
Tank Use:	PETROLEUM
STG:	P
Content:	Not reported
Number Of Tanks:	4

Status:	Active
Comp Number:	8661
Number:	9
Board Of Equalization:	44-016705
Referral Date:	09-30-92

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNOCAL #5330 (Continued)**

**S101589119**

Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-008661-000003  
Tank Status: A  
Capacity: 3000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: LEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 8661  
Number: 9  
Board Of Equalization: 44-016705  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-008661-000004  
Tank Status: A  
Capacity: 7000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 8661  
Number: 9  
Board Of Equalization: 44-016705  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-008661-000005  
Tank Status: A  
Capacity: 7000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 13666  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-013666-000001  
Tank Status: A  
Capacity: 500

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNOCAL #5330 (Continued)**

**S101589119**

Active Date: Not reported  
Tank Use: PETROLEUM  
STG: P  
Content: Not reported  
Number Of Tanks: 4

Status: Active  
Comp Number: 13666  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-013666-000002  
Tank Status: A  
Capacity: 3000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: LEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 13666  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-013666-000003  
Tank Status: A  
Capacity: 7000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 13666  
Number: 9  
Board Of Equalization: Not reported  
Referral Date: 09-30-92  
Action Date: 09-15-92  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 30-000-013666-000004  
Tank Status: A  
Capacity: 7000  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**UNOCAL #5330 (Continued)**

**S101589119**

CA FID UST:

Facility ID: 30001353  
Regulated By: UTNKA  
Regulated ID: Not reported  
Cortese Code: Not reported  
SIC Code: Not reported  
Facility Phone: 7148261510  
Mail To: Not reported  
Mailing Address: 911 WILSHIRE BLVD STE 10  
Mailing Address 2: Not reported  
Mailing City,St,Zip: CYPRESS 90630  
Contact: Not reported  
Contact Phone: Not reported  
DUNs Number: Not reported  
NPDES Number: Not reported  
EPA ID: Not reported  
Comments: Not reported  
Status: Active

HIST CORTESE:

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083002183T

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083001897T

36  
NNW  
1/4-1/2  
0.413 mi.  
2182 ft.

**ORANGE COUNTY FIRE STATION #17**  
**4991 CERRITOS**  
**CYPRESS, CA 90630**

**LUST** **U002096241**  
**SWEEPS UST** **N/A**  
**CA FID UST**  
**HIST CORTESE**

**Relative:**  
**Higher**

**Actual:**  
**32 ft.**

LUST:

Lead Agency: ORANGE COUNTY LOP  
Case Type: LUST Cleanup Site  
Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605902092](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605902092)  
Global Id: T0605902092  
Latitude: 33.8104537  
Longitude: -118.0458325  
Status: Completed - Case Closed  
Status Date: 07/21/2004  
Case Worker: TE  
RB Case Number: 083003072T  
Local Agency: ORANGE COUNTY LOP  
File Location: Local Agency Warehouse  
Local Case Number: 97UT031  
Potential Media Affect: Other Groundwater (uses other than drinking water)  
Potential Contaminants of Concern: Diesel, Gasoline  
Site History: Not reported

LUST:

Global Id: T0605902092  
Contact Type: Regional Board Caseworker

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ORANGE COUNTY FIRE STATION #17 (Continued)**

**U002096241**

Contact Name: NANCY OLSON-MARTIN  
Organization Name: SANTA ANA RWQCB (REGION 8)  
Address: 3737 MAIN STREET, SUITE 500  
City: RIVERSIDE  
Email: nolson-martin@waterboards.ca.gov  
Phone Number: Not reported

Global Id: T0605902092  
Contact Type: Local Agency Caseworker  
Contact Name: TAMARA ESCOBEDO  
Organization Name: ORANGE COUNTY LOP  
Address: 1241 EAST DYER ROAD SUITE 120  
City: SANTA ANA  
Email: tescobedo@ochca.com  
Phone Number: 7144336251

**LUST:**

Global Id: T0605902092  
Action Type: Other  
Date: 09/09/1997  
Action: Leak Reported

Global Id: T0605902092  
Action Type: REMEDIATION  
Date: 01/08/2004  
Action: In Situ Physical/Chemical Treatment (other than SVE)

Global Id: T0605902092  
Action Type: Other  
Date: 07/30/1997  
Action: Leak Discovery

Global Id: T0605902092  
Action Type: ENFORCEMENT  
Date: 12/20/2004  
Action: Closure/No Further Action Letter

Global Id: T0605902092  
Action Type: ENFORCEMENT  
Date: 09/12/1997  
Action: Notice of Responsibility

Global Id: T0605902092  
Action Type: ENFORCEMENT  
Date: 07/16/2003  
Action: Staff Letter

Global Id: T0605902092  
Action Type: ENFORCEMENT  
Date: 10/06/2003  
Action: Staff Letter

Global Id: T0605902092  
Action Type: ENFORCEMENT  
Date: 04/14/2004  
Action: Staff Letter

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ORANGE COUNTY FIRE STATION #17 (Continued)**

**U002096241**

Global Id: T0605902092  
Action Type: Other  
Date: 04/01/1998  
Action: Leak Stopped

**LUST:**

Global Id: T0605902092  
Status: Completed - Case Closed  
Status Date: 07/21/2004

Global Id: T0605902092  
Status: Open - Case Begin Date  
Status Date: 07/30/1997

Global Id: T0605902092  
Status: Open - Remediation  
Status Date: 02/24/2003

**ORANGE CO. LUST:**

Region: ORANGE  
Facility Id: 97UT031  
Released Substance: Diesel fuel oil and additives, Nos.1-D, 2-D, 2-4; Gasoline-Automotive  
(motor gasoline and additives), leaded & unleaded  
Date Closed: 12/20/2004  
Record ID: RO0001780

**LUST REG 8:**

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Case Closed  
Case Number: 083003072T  
Local Case Num: 97UT031  
Case Type: Other ground water affected  
Substance: 12034,800661  
Qty Leaked: 0  
Abate Method: Not reported  
Cross Street: Not reported  
Enf Type: CLOS  
Funding: Not reported  
How Discovered: SA  
How Stopped: Close Tank  
Leak Cause: Unknown  
Leak Source: D  
Global ID: T0605902092  
How Stopped Date: 4/1/1998  
Enter Date: Not reported  
Date Confirmation of Leak Began: Not reported  
Date Preliminary Assessment Began: Not reported  
Discover Date: 7/30/1997  
Enforcement Date: Not reported  
Close Date: 12/20/2004  
Date Prelim Assessment Workplan Submitted: Not reported  
Date Pollution Characterization Began: Not reported  
Date Remediation Plan Submitted: 2/24/2003

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ORANGE COUNTY FIRE STATION #17 (Continued)**

**U002096241**

Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	=
Soil Qualifies:	=
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8104537
Longitude:	-118.0458325
MTBE Date:	6/23/2003
Max MTBE GW:	1120
MTBE Concentration:	0
Max MTBE Soil:	.4
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	AR
Lead Agency:	Local Agency
Local Agency:	30000L
Hydr Basin #:	Not reported
Beneficial:	MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

**SWEEPS UST:**

Status:	Active
Comp Number:	6057
Number:	9
Board Of Equalization:	44-016418
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-006057-000001
Tank Status:	A
Capacity:	1000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	2

Status:	Active
Comp Number:	6057
Number:	9
Board Of Equalization:	44-016418
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-006057-000002
Tank Status:	A



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ORANGE COUNTY FIRE STATION #17 (Continued)**

**U002096241**

Capacity: 550  
Active Date: Not reported  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

**CA FID UST:**

Facility ID: 30017524  
Regulated By: UTNKA  
Regulated ID: Not reported  
Cortese Code: Not reported  
SIC Code: Not reported  
Facility Phone: 7147440400  
Mail To: Not reported  
Mailing Address: 5275 ORANGE AVE  
Mailing Address 2: Not reported  
Mailing City,St,Zip: CYPRESS 90630  
Contact: Not reported  
Contact Phone: Not reported  
DUNS Number: Not reported  
NPDES Number: Not reported  
EPA ID: Not reported  
Comments: Not reported  
Status: Active

**HIST CORTESE:**

Region: CORTESE  
Facility County Code: 30  
Reg By: LTNKA  
Reg Id: 083003072T

**37**  
**ESE**  
**1/4-1/2**  
**0.424 mi.**  
**2241 ft.**

**R & D BLDG PARCEL 7**  
**5730 KATELLA AVE**  
**CYPRESS, CA 90630**

**ENVIROSTOR**  
**HAZNET**  
**CIWQS**

**S121666303**  
**N/A**

**Relative:**  
**Higher**

**ENVIROSTOR:**

**Actual:**  
**37 ft.**

Facility ID: 60002729  
Status: Active  
Status Date: 09/17/2018  
Site Code: Not reported  
Site Type: Tiered Permit  
Site Type Detailed: Tiered Permit  
Acres: 0.5  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Violeta Mislang  
Supervisor: Robert Senga  
Division Branch: Cleanup Cypress  
Assembly: Not reported  
Senate: Not reported  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**R & D BLDG PARCEL 7 (Continued)**

**S121666303**

Funding: Responsible Party  
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: 60002729  
Alias Type: Envirostor ID Number

**Completed Info:**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1  
Completed Date: 09/17/2018  
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

**HAZNET:**

Site Name: ROLLS-ROYCE HIGH TEMPERATURE COMPOSITES  
Year: 2017  
GEPAID: CAL000415727  
Contact: ROBERT HAYS  
Telephone: 6573376542  
Mailing Name: Not reported  
Mailing Address: 5730 KATELLA AVENUE  
Mailing City,St,Zip: CYPRESS, CA 906300000  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Other inorganic solid waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Tons: 0.357  
Cat Decode: Other inorganic solid waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)  
Facility County: Orange

Site Name: ROLLS-ROYCE HIGH TEMPERATURE COMPOSITES  
Year: 2017  
GEPAID: CAL000415727  
Contact: ROBERT HAYS  
Telephone: 6573376542  
Mailing Name: Not reported  
Mailing Address: 5730 KATELLA AVENUE  
Mailing City,St,Zip: CYPRESS, CA 906300000

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**R & D BLDG PARCEL 7 (Continued)**

**S121666303**

Gen County: Orange  
TSD EPA ID: CAT080013352  
TSD County: Los Angeles  
Waste Category: Unspecified organic liquid mixture  
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Tons: 0.5245  
Cat Decode: Unspecified organic liquid mixture  
Method Decode: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Facility County: Orange

Site Name: ROLLS-ROYCE HIGH TEMPERATURE COMPOSITES  
Year: 2017  
GEPAID: CAL000415727  
Contact: ROBERT HAYS  
Telephone: 6573376542  
Mailing Name: Not reported  
Mailing Address: 5730 KATELLA AVENUE  
Mailing City,St,Zip: CYPRESS, CA 906300000  
Gen County: Orange  
TSD EPA ID: CAT080013352  
TSD County: Los Angeles  
Waste Category: Unspecified aqueous solution  
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Tons: 0.1495  
Cat Decode: Unspecified aqueous solution  
Method Decode: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Facility County: Orange

Site Name: ROLLS-ROYCE HIGH TEMPERATURE COMPOSITES  
Year: 2017  
GEPAID: CAL000415727  
Contact: ROBERT HAYS  
Telephone: 6573376542  
Mailing Name: Not reported  
Mailing Address: 5730 KATELLA AVENUE  
Mailing City,St,Zip: CYPRESS, CA 906300000  
Gen County: Orange  
TSD EPA ID: CAT080013352  
TSD County: Los Angeles  
Waste Category: Waste oil and mixed oil  
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Tons: 1.03  
Cat Decode: Waste oil and mixed oil  
Method Decode: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Facility County: Orange

Site Name: ROLLS-ROYCE HIGH TEMPERATURE COMPOSITES  
Year: 2017  
GEPAID: CAL000415727  
Contact: ROBERT HAYS  
Telephone: 6573376542

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**R & D BLDG PARCEL 7 (Continued)**

**S121666303**

Mailing Name: Not reported  
Mailing Address: 5730 KATELLA AVENUE  
Mailing City,St,Zip: CYPRESS, CA 906300000  
Gen County: Orange  
TSD EPA ID: AZD081705402  
TSD County: 99  
Waste Category: Unspecified oil-containing waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Tons: 0.2175  
Cat Decode: Unspecified oil-containing waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Facility County: Orange

[Click this hyperlink](#) while viewing on your computer to access  
2 additional CA\_HAZNET: record(s) in the EDR Site Report.

**CIWQS:**

Agency: Warland Investment Co  
Agency Address: 1299 Ocean Ave Ste 300, Santa Monica, CA 90401  
Place/Project Type: Construction - Commercial, Utility, Industrial  
SIC/NAICS: Not reported  
Region: 8  
Program: CONSTW  
Regulatory Measure Status: Terminated  
Regulatory Measure Type: Storm water construction  
Order Number: 99-08DW  
WDID: 8 30C315253  
NPDES Number: CAS000002  
Adoption Date: Not reported  
Effective Date: 03/14/2001  
Termination Date: 01/15/2002  
Expiration/Review Date: Not reported  
Design Flow: Not reported  
Major/Minor: Not reported  
Complexity: Not reported  
TTWQ: Not reported  
Enforcement Actions within 5 years: 0  
Violations within 5 years: 0  
Latitude: 33.802917  
Longitude: -118.033351

**H38**  
**West**  
**1/2-1**  
**0.684 mi.**  
**3609 ft.**

**VESPER CORP**  
**4411 KATELLA AV**  
**LOS ALAMITOS, CA 90720**

**Site 1 of 2 in cluster H**

**ENVIROSTOR** **S101481470**  
**EMI** **N/A**  
**HAZNET**  
**CIWQS**

**Relative:** **ENVIROSTOR:**  
**Lower** Facility ID: 30370008  
Status: Refer: Local Agency  
Status Date: 01/11/2011  
Site Code: Not reported  
Site Type: Evaluation  
Site Type Detailed: Evaluation  
Acres: 0

**Actual:**  
**28 ft.**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

NPL: NO  
Regulatory Agencies: US EPA  
Lead Agency: US EPA  
Program Manager: Not reported  
Supervisor: Manny Alonzo  
Division Branch: Cleanup Cypress  
Assembly: 72  
Senate: 34  
Special Program: EPA - PASI  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: Not reported  
Latitude: 33.80358  
Longitude: -118.0553  
APN: NONE SPECIFIED  
Past Use: NONE SPECIFIED  
Potential COC: \* ALKALINE SOLUTION WITHOUT METALS Asbestos Containing Materials  
(ACM \* UNSPECIFIED ACID SOLUTION \* UNSPECIFIED AQUEOUS SOLUTION \*  
UNSPECIFIED SOLVENT MIXTURES

Confirmed COC: NONE SPECIFIED  
Potential Description: NONE SPECIFIED  
Alias Name: ARROWHEAD PRODUCTS COMPANY  
Alias Type: Alternate Name  
Alias Name: CAD008302002  
Alias Type: EPA Identification Number  
Alias Name: CAD982360349  
Alias Type: EPA Identification Number  
Alias Name: 110000475888  
Alias Type: EPA (FRS #)  
Alias Name: 30370008  
Alias Type: Envirostor ID Number

**Completed Info:**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: \* Discovery  
Completed Date: 08/01/1981  
Comments: FACILITY IDENTIFIED ID PHONE BOOK MFG CHEMS IN 1966. AIRCRAFT EQUIP  
MFG. WASTES NOW SEWERED, RECYCLED OR LDFL

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 10/28/1994  
Comments: Database Validation Program confirms NFA for DTSC.

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 02/14/1992  
Comments: SSI Report was reviewed by Region 4 staff. The facility began  
operations in 1961 as the Arrowhead Products Div. of Federal-Mogul  
Corp. In 1983, facility was purchased by Indian Bar Co. In 1987,  
facility sold to present owner, Vesper Corp. Arrowhead Products  
manufactured metal and non-metal ducting for aircraft. The facility  
generates approx. 165 gals. of used degreas. containing 95% PCE,  
every 90 days. This is stored in 55 gal drums in storage yard.  
Facility should be permitted. NFA by SMB.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 03/22/1990  
Comments: SITE SCREENING DONE EPA COMPLETED PRELIMINARY ASSESSMENT AND RECOMMEND SCREENING SITE INSPECTION (HIGH PRIORITY).

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: PA/SI Site Screening  
Completed Date: 04/24/2009  
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

**EMI:**

Year: 1987  
County Code: 30  
Air Basin: SC  
Facility ID: 42954  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 34  
Reactive Organic Gases Tons/Yr: 16  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 1990  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 22  
Reactive Organic Gases Tons/Yr: 7  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Year: 1995  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 18  
Reactive Organic Gases Tons/Yr: 7  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 1996  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 13  
Reactive Organic Gases Tons/Yr: 8  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 1997  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 10  
Reactive Organic Gases Tons/Yr: 5  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 1998  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 9  
Reactive Organic Gases Tons/Yr: 5  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 1999  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 10  
Reactive Organic Gases Tons/Yr: 5  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 2000  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 10  
Reactive Organic Gases Tons/Yr: 5  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year: 2001  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 10  
Reactive Organic Gases Tons/Yr: 6  
Carbon Monoxide Emissions Tons/Yr: 0



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

NOX - Oxides of Nitrogen Tons/Yr: 1  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers and Smlr Tons/Yr:0

Year: 2002  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5  
Reactive Organic Gases Tons/Yr: 5  
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 Smlr Tons/Yr:0

Year: 2003  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5  
Reactive Organic Gases Tons/Yr: 5  
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 Smlr Tons/Yr:0

Year: 2004  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5.015527  
Reactive Organic Gases Tons/Yr: 4.91  
Carbon Monoxide Emissions Tons/Yr: 0.13  
NOX - Oxides of Nitrogen Tons/Yr: 0.481  
SOX - Oxides of Sulphur Tons/Yr: 0.00307  
Particulate Matter Tons/Yr: 0.05375101  
Part. Matter 10 Micrometers and Smlr Tons/Yr:0.03

Year: 2005

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 4.74276  
Reactive Organic Gases Tons/Yr: 4.623030248  
Carbon Monoxide Emissions Tons/Yr: .327  
NOX - Oxides of Nitrogen Tons/Yr: .389  
SOX - Oxides of Sulphur Tons/Yr: .00234  
Particulate Matter Tons/Yr: .05554629  
Part. Matter 10 Micrometers and Smlr Tons/Yr: .034533748777

Year: 2009  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5.9953857988110197  
Reactive Organic Gases Tons/Yr: 5.3820839999999999  
Carbon Monoxide Emissions Tons/Yr: 0.35999999999999999  
NOX - Oxides of Nitrogen Tons/Yr: 0.42999999999999999  
SOX - Oxides of Sulphur Tons/Yr: 2.6099999999999999E-3  
Particulate Matter Tons/Yr: 3.0010999999999999E-2  
Part. Matter 10 Micrometers and Smlr Tons/Yr: 3.0010559999999999E-2

Year: 2010  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 6.1521856599770297  
Reactive Organic Gases Tons/Yr: 5.64642  
Carbon Monoxide Emissions Tons/Yr: 0.40782000000000002  
NOX - Oxides of Nitrogen Tons/Yr: 0.48549999999999999  
SOX - Oxides of Sulphur Tons/Yr: 2.9099999999999998E-3  
Particulate Matter Tons/Yr: 3.6900000000000002E-2  
Part. Matter 10 Micrometers and Smlr Tons/Yr: 3.6899599999999998E-2

Year: 2011  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 6.5007767986  
Reactive Organic Gases Tons/Yr: 5.41397  
Carbon Monoxide Emissions Tons/Yr: 0.41908  
NOX - Oxides of Nitrogen Tons/Yr: 0.49891  
SOX - Oxides of Sulphur Tons/Yr: 0.00299  
Particulate Matter Tons/Yr: 0.03792  
Part. Matter 10 Micrometers and Smlr Tons/Yr: 0.0379196

Year: 2012  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 6.613982224  
Reactive Organic Gases Tons/Yr: 5.4762700052  
Carbon Monoxide Emissions Tons/Yr: 0.42562  
NOX - Oxides of Nitrogen Tons/Yr: 0.5067  
SOX - Oxides of Sulphur Tons/Yr: 0.00304  
Particulate Matter Tons/Yr: 0.03851  
Part. Matter 10 Micrometers and Smlr Tons/Yr: 0.0385096

Year: 2013  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5.5290276772  
Reactive Organic Gases Tons/Yr: 4.7126200008  
Carbon Monoxide Emissions Tons/Yr: 0.42672  
NOX - Oxides of Nitrogen Tons/Yr: 0.25298  
SOX - Oxides of Sulphur Tons/Yr: 0.00304  
Particulate Matter Tons/Yr: 0.03866  
Part. Matter 10 Micrometers and Smlr Tons/Yr: 0.0386576

Year: 2014  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 8.1440901619  
Reactive Organic Gases Tons/Yr: 6.74688  
Carbon Monoxide Emissions Tons/Yr: 0.17954  
NOX - Oxides of Nitrogen Tons/Yr: 0.43118

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

SOX - Oxides of Sulphur Tons/Yr: 0.00294  
Particulate Matter Tons/Yr: 0.04052  
Part. Matter 10 Micrometers and Smlr Tons/Yr:0.03979368

Year: 2015  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 26.640775316  
Reactive Organic Gases Tons/Yr: 24.93715181  
Carbon Monoxide Emissions Tons/Yr: 0.183758  
NOX - Oxides of Nitrogen Tons/Yr: 0.44582315  
SOX - Oxides of Sulphur Tons/Yr: 0.003036  
Particulate Matter Tons/Yr: 0.042778012  
Part. Matter 10 Micrometers and Smlr Tons/Yr:0.042005279488

Year: 2016  
County Code: 30  
Air Basin: SC  
Facility ID: 58876  
Air District Name: SC  
SIC Code: 3728  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 10.903495734  
Reactive Organic Gases Tons/Yr: 8.5639625  
Carbon Monoxide Emissions Tons/Yr: 0.099805  
NOX - Oxides of Nitrogen Tons/Yr: 0.34447  
SOX - Oxides of Sulphur Tons/Yr: 0.001824  
Particulate Matter Tons/Yr: 0.021341  
Part. Matter 10 Micrometers and Smlr Tons/Yr:0.020395012

**HAZNET:**

Site Name: ARROWHEAD PRODUCTS CORPORATION  
Year: 2017  
GEPAID: CAD008302002  
Contact: LANE CROSS  
Telephone: 7148222655  
Mailing Name: Not reported  
Mailing Address: 4411 KATELLA AVE  
Mailing City,St,Zip: LOS ALAMITOS, CA 907203514  
Gen County: Orange  
TSD EPA ID: AZR000501510  
TSD County: 99  
Waste Category: Other inorganic solid waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Recovery (H010-H129) Or (H131-H135)  
Tons: 0.8  
Cat Decode: Other inorganic solid waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Recovery (H010-H129) Or (H131-H135)

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Facility County: Orange

Site Name: ARROWHEAD PRODUCTS CORPORATION

Year: 2017

GEPAID: CAD008302002

Contact: LANE CROSS

Telephone: 7148222655

Mailing Name: Not reported

Mailing Address: 4411 KATELLA AVE

Mailing City,St,Zip: LOS ALAMITOS, CA 907203514

Gen County: Orange

TSD EPA ID: AZR000501510

TSD County: 99

Waste Category: Other empty containers 30 gallons or more

Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)

Tons: 0.015

Cat Decode: Other empty containers 30 gallons or more

Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)

Facility County: Orange

Site Name: ARROWHEAD PRODUCTS CORPORATION

Year: 2017

GEPAID: CAD008302002

Contact: LANE CROSS

Telephone: 7148222655

Mailing Name: Not reported

Mailing Address: 4411 KATELLA AVE

Mailing City,St,Zip: LOS ALAMITOS, CA 907203514

Gen County: Orange

TSD EPA ID: MXC130619001

TSD County: Not reported

Waste Category: Laboratory waste chemicals

Disposal Method: Energy Recovery At This Site--Use As Fuel(Includes On-Site Fuel  
Blending)

Tons: 0.125

Cat Decode: Laboratory waste chemicals

Method Decode: Energy Recovery At This Site--Use As Fuel(Includes On-Site Fuel  
Blending)

Facility County: Orange

Site Name: ARROWHEAD PRODUCTS CORPORATION

Year: 2017

GEPAID: CAD008302002

Contact: LANE CROSS

Telephone: 7148222655

Mailing Name: Not reported

Mailing Address: 4411 KATELLA AVE

Mailing City,St,Zip: LOS ALAMITOS, CA 907203514

Gen County: Orange

TSD EPA ID: NVT330010000

TSD County: 99

Waste Category: Unspecified alkaline solution

Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect

Tons: 0.47955

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VESPER CORP (Continued)**

**S101481470**

Cat Decode: Unspecified alkaline solution  
Method Decode: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
Facility County: Orange

Site Name: ARROWHEAD PRODUCTS CORPORATION  
Year: 2017  
GEPAID: CAD008302002  
Contact: LANE CROSS  
Telephone: 7148222655  
Mailing Name: Not reported  
Mailing Address: 4411 KATELLA AVE  
Mailing City,St,Zip: LOS ALAMITOS, CA 907203514  
Gen County: Orange  
TSD EPA ID: NVT330010000  
TSD County: 99  
Waste Category: Aqueous solution with metals (< restricted levels and (Alkaline  
solution (pH >= 12.5) with metals))  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Tons: 0.06255  
Cat Decode: Aqueous solution with metals (< restricted levels and (Alkaline solution (pH >= 12.5) with metals))  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Facility County: Orange

[Click this hyperlink](#) while viewing on your computer to access  
524 additional CA\_HAZNET: record(s) in the EDR Site Report.

**CIWQS:**

Agency: Arrowhead Products  
Agency Address: 4411 Katella Ave, Los Alamitos, CA 90720  
Place/Project Type: Industrial - Aircraft Parts and Auxiliary Equipment, NEC  
SIC/NAICS: Multiple  
Region: 8  
Program: INDSTW  
Regulatory Measure Status: Active  
Regulatory Measure Type: Storm water industrial  
Order Number: 2014-0057-DWQ  
WDID: 8 30I001207  
NPDES Number: CAS000001  
Adoption Date: Not reported  
Effective Date: 03/26/1992  
Termination Date: Not reported  
Expiration/Review Date: Not reported  
Design Flow: Not reported  
Major/Minor: Not reported  
Complexity: Not reported  
TTWQ: Not reported  
Enforcement Actions within 5 years: 0  
Violations within 5 years: 0  
Latitude: 33.80314  
Longitude: -118.05555

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**H39**  
**West**  
**1/2-1**  
**0.684 mi.**  
**3609 ft.**

**ARROWHEAD PRODUCTS**  
**4411 KATELLA AVENUE**  
**LOS ALAMITOS, CA 90720**

**Site 2 of 2 in cluster H**

**ENVIROSTOR** **S117038742**  
**N/A**

**Relative:**  
**Lower**

ENVIROSTOR:

**Actual:**  
**28 ft.**

Facility ID: 60002104  
Status: Active  
Status Date: 09/23/2014  
Site Code: 401772  
Site Type: Tiered Permit  
Site Type Detailed: Tiered Permit  
Acres: 0.5  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Violeta Mislang  
Supervisor: Robert Senga  
Division Branch: Cleanup Cypress  
Assembly: 72  
Senate: 34  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: Responsible Party  
Latitude: 33.80408  
Longitude: -118.0554  
APN: NONE SPECIFIED  
Past Use: AEROSPACE MANUFACTURING/MAINTENANCE  
Potential COC: Arsenic Chromium III Copper and compounds  
Confirmed COC: 30001-NO 30152-NO 30156-NO  
Potential Description: SOIL  
Alias Name: 401772  
Alias Type: Project Code (Site Code)  
Alias Name: 60002104  
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Consent Agreement  
Completed Date: 08/08/2017  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Annual Oversight Cost Estimate  
Completed Date: 11/02/2017  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Annual Oversight Cost Estimate  
Completed Date: 12/13/2018  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**ARROWHEAD PRODUCTS (Continued)**

**S117038742**

Completed Date: 09/25/2014  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Workplan  
Completed Date: 01/30/2018  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 11/29/2018  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Fieldwork  
Completed Date: 04/03/2018  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase I Verification  
Completed Date: 09/15/2016  
Comments: Not reported

Future Area Name: PROJECT WIDE  
Future Sub Area Name: Not reported  
Future Document Type: Supplemental Site Investigation Report  
Future Due Date: 2019  
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

40  
WSW  
1/2-1  
0.687 mi.  
3628 ft.

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34**  
**4250 CONSTITUTION AVE**  
**LOS ALAMITOS, CA 90720**

**RESPONSE**  
**ENVIROSTOR**  
**LUST**

**S106387296**  
**N/A**

**Relative:**  
**Lower**  
**Actual:**  
**27 ft.**

**RESPONSE:**  
Facility ID: 30490037  
Site Type: State Response  
Site Type Detail: FUDS  
Acres: 1549  
National Priorities List: NO  
Cleanup Oversight Agencies: RWQCB 8 - Santa Ana  
Lead Agency Description: RWQCB 8 - Santa Ana  
Project Manager: Not reported  
Supervisor: Robert Senga  
Division Branch: Cleanup Cypress  
Site Code: 400332  
Site Mgmt. Req.: NONE SPECIFIED  
Assembly: 72  
Senate: 34



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34 (Continued)**

**S106387296**

Special Program Status: DSMOA  
Status: No Further Action  
Status Date: 02/03/2010  
Restricted Use: NO  
Funding: DERA  
Latitude: 33.79916  
Longitude: -118.0547  
APN: NONE SPECIFIED  
Past Use: FIRE TRAINING AREAS, FIRING RANGE - SMALL ARMS ETC...  
Potential COC : Munitions Debris (MD Lead Aminodinitrotoluene 1,3,5-Trinitrobenzene  
Trinitrophenylmethylnitramine 2,4,6-Trinitrotoluene Zinc  
Confirmed COC: 30051-NO 32000-NO 30580-NO 30581-NO 30582-NO 30594-NO 30013-NO  
31000-NO  
Potential Description: SOIL  
Alias Name: ARMED FORCES RESERVE CENTER LOS ALAMITOS  
Alias Type: Alternate Name  
Alias Name: LOS ALAMITOS AFRC  
Alias Type: Alternate Name  
Alias Name: 110033606774  
Alias Type: EPA (FRS #)  
Alias Name: T0605900553  
Alias Type: GeoTracker Global ID  
Alias Name: T0605900572  
Alias Type: GeoTracker Global ID  
Alias Name: T0605901297  
Alias Type: GeoTracker Global ID  
Alias Name: T0605911429  
Alias Type: GeoTracker Global ID  
Alias Name: T0605912556  
Alias Type: GeoTracker Global ID  
Alias Name: T060592093  
Alias Type: GeoTracker Global ID  
Alias Name: T0605926698  
Alias Type: GeoTracker Global ID  
Alias Name: T0605960022  
Alias Type: GeoTracker Global ID  
Alias Name: T0605969865  
Alias Type: GeoTracker Global ID  
Alias Name: T060653541  
Alias Type: GeoTracker Global ID  
Alias Name: CA8572890517  
Alias Type: HWTS Identification Code  
Alias Name: 400332  
Alias Type: Project Code (Site Code)  
Alias Name: 30490037  
Alias Type: Envirostor ID Number  
Completed Info:  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Removal Action Completion Report  
Completed Date: 02/15/1996  
Comments: Not reported  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 04/27/1995

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34 (Continued)**

**S106387296**

Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Assessment/Site Inspection Report (PA/SI)  
Completed Date: 09/03/2008  
Comments: DTSC agreed with the reports recommendation of Interim Site Evaluation Accomplished for the Phelan Small Arms Range and the range ineligibility for the active army military munitions response program. Furthermore, DTSC agrees with the Army s conclusions and recommendation statement that to the best of our knowledge, the Army has determined that no further evaluation will be taken unless information indicating that this decision was not appropriate becomes available .

Completed Area Name: Sites With No Operable Unit  
Completed Sub Area Name: SITE9  
Completed Document Type: \*Action Memorandum (if <\$1M)  
Completed Date: 04/21/1997  
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

**ENVIROSTOR:**

Facility ID: 30490037  
Status: No Further Action  
Status Date: 02/03/2010  
Site Code: 400332  
Site Type: State Response  
Site Type Detailed: FUDS  
Acres: 1549  
NPL: NO  
Regulatory Agencies: RWQCB 8 - Santa Ana  
Lead Agency: RWQCB 8 - Santa Ana  
Program Manager: Not reported  
Supervisor: Robert Senga  
Division Branch: Cleanup Cypress  
Assembly: 72  
Senate: 34  
Special Program: DSMOA  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: DERA  
Latitude: 33.79916  
Longitude: -118.0547  
APN: NONE SPECIFIED  
Past Use: FIRE TRAINING AREAS, FIRING RANGE - SMALL ARMS ETC...  
Potential COC: Munitions Debris (MD Lead Aminodinitrotoluene 1,3,5-Trinitrobenzene Trinitrophenylmethylnitramine 2,4,6-Trinitrotoluene Zinc

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34 (Continued)**

**S106387296**

Confirmed COC: 30051-NO 32000-NO 30580-NO 30581-NO 30582-NO 30594-NO 30013-NO  
31000-NO

Potential Description: SOIL

Alias Name: ARMED FORCES RESERVE CENTER LOS ALAMITOS

Alias Type: Alternate Name

Alias Name: LOS ALAMITOS AFRC

Alias Type: Alternate Name

Alias Name: 110033606774

Alias Type: EPA (FRS #)

Alias Name: T0605900553

Alias Type: GeoTracker Global ID

Alias Name: T0605900572

Alias Type: GeoTracker Global ID

Alias Name: T0605901297

Alias Type: GeoTracker Global ID

Alias Name: T0605911429

Alias Type: GeoTracker Global ID

Alias Name: T0605912556

Alias Type: GeoTracker Global ID

Alias Name: T060592093

Alias Type: GeoTracker Global ID

Alias Name: T0605926698

Alias Type: GeoTracker Global ID

Alias Name: T0605960022

Alias Type: GeoTracker Global ID

Alias Name: T0605969865

Alias Type: GeoTracker Global ID

Alias Name: T060653541

Alias Type: GeoTracker Global ID

Alias Name: CA8572890517

Alias Type: HWTS Identification Code

Alias Name: 400332

Alias Type: Project Code (Site Code)

Alias Name: 30490037

Alias Type: Envirostor ID Number

**Completed Info:**

Completed Area Name: PROJECT WIDE

Completed Sub Area Name: Not reported

Completed Document Type: Removal Action Completion Report

Completed Date: 02/15/1996

Comments: Not reported

Completed Area Name: PROJECT WIDE

Completed Sub Area Name: Not reported

Completed Document Type: Preliminary Endangerment Assessment Report

Completed Date: 04/27/1995

Comments: Not reported

Completed Area Name: PROJECT WIDE

Completed Sub Area Name: Not reported

Completed Document Type: Preliminary Assessment/Site Inspection Report (PA/SI)

Completed Date: 09/03/2008

Comments: DTSC agreed with the reports recommendation of Interim Site Evaluation Accomplished for the Phelan Small Arms Range and the range ineligibility for the active army military munitions response program. Furthermore, DTSC agrees with the Army s conclusions and recommendation statement that to the best of our knowledge, the Army

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34 (Continued)**

**S106387296**

has determined that no further evaluation will be taken unless information indicating that this decision was not appropriate becomes available .

Completed Area Name: Sites With No Operable Unit  
Completed Sub Area Name: SITE9  
Completed Document Type: \*Action Memorandum (if <\$1M)  
Completed Date: 04/21/1997  
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

**LUST REG 8:**

Region: 8  
County: Orange  
Regional Board: Santa Ana Region  
Facility Status: Remedial action (cleanup) Underway  
Case Number: 083003835T  
Local Case Num: Not reported  
Case Type: Aquifer affected  
Substance: Gasoline  
Qty Leaked: Not reported  
Abate Method: Not reported  
Cross Street: GETTYSBERG  
Enf Type: Not reported  
Funding: Not reported  
How Discovered: Tank Closure  
How Stopped: Close Tank  
Leak Cause: Corrosion  
Leak Source: Piping  
Global ID: T0605912556  
How Stopped Date: 10/15/1987  
Enter Date: Not reported  
Date Confirmation of Leak Began: Not reported  
Date Preliminary Assessment Began: Not reported  
Discover Date: 10/1/1987  
Enforcement Date: Not reported  
Close Date: Not reported  
Date Prelim Assessment Workplan Submitted: Not reported  
Date Pollution Characterization Began: 10/2/1989  
Date Remediation Plan Submitted: Not reported  
Date Remedial Action Underway: 4/17/1997  
Date Post Remedial Action Monitoring: Not reported  
Enter Date: Not reported  
GW Qualifies: =  
Soil Qualifies: Not reported  
Operator: Not reported  
Facility Contact: Not reported  
Interim: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**JOINT FORCES TRAINING BASE, LOS ALAMITOS - BLDG 34 (Continued)**

**S106387296**

Oversite Program: DOD  
Latitude: 33.7940899  
Longitude: -118.0578713  
MTBE Date: 12/16/1999  
Max MTBE GW: 9.7  
MTBE Concentration: 1  
Max MTBE Soil: Not reported  
MTBE Fuel: 1  
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected  
MTBE Class: C  
Staff: JCB  
Staff Initials: SAS  
Lead Agency: Regional Board  
Local Agency: 30000L  
Hydr Basin #: COASTAL PLAIN OF ORA  
Beneficial: MS\_T  
Priority: Not reported  
Cleanup Fund Id: Not reported  
Work Suspended: Not reported  
Summary: SITE COVERED BY DVPE SYSTEM INSTALLED FOR BLDG 35 RELEASE

41  
East  
1/2-1  
0.761 mi.  
4017 ft.

**THE BOEING COMPANY**  
**10800 VALLEY VIEW ST**  
**CYPRESS, CA 90630**

**ENVIROSTOR**  
**Orange Co. Industrial Site**  
**EMI**  
**HAZNET**

**S103622068**  
**N/A**

**Relative:**  
**Higher**  
**Actual:**  
**39 ft.**

ENVIROSTOR:  
Facility ID: 30990005  
Status: Refer: 1248 Local Agency  
Status Date: 09/02/2004  
Site Code: Not reported  
Site Type: Evaluation  
Site Type Detailed: Evaluation  
Acres: Not reported  
NPL: NO  
Regulatory Agencies: NONE SPECIFIED  
Lead Agency: NONE SPECIFIED  
Program Manager: Not reported  
Supervisor: Referred - Not Assigned  
Division Branch: Cleanup Cypress  
Assembly: 67  
Senate: Not reported  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: Not Applicable  
Latitude: 33.80638  
Longitude: -118.0276  
APN: NONE SPECIFIED  
Past Use: NONE SPECIFIED  
Potential COC: NONE SPECIFIED  
Confirmed COC: NONE SPECIFIED  
Potential Description: NONE SPECIFIED  
Alias Name: 30990005  
Alias Type: Envirostor ID Number

Completed Info:

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**THE BOEING COMPANY (Continued)**

**S103622068**

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

**Orange Co. Industrial Site:**

Case ID: 04IC015  
Record ID: RO0003315  
Current Status: CLOSED 1/27/2005  
Closure Type: Closure certification issued  
Released Chemical: OIL AND WATER

**EMI:**

Year: 1987  
County Code: 30  
Air Basin: SC  
Facility ID: 23960  
Air District Name: SC  
SIC Code: 3444  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 5  
Reactive Organic Gases Tons/Yr: 4  
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: 1990  
County Code: 30  
Air Basin: SC  
Facility ID: 23960  
Air District Name: SC  
SIC Code: 3599  
Air District Name: SOUTH COAST AQMD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 1  
Reactive Organic Gases Tons/Yr: 1  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 0  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**THE BOEING COMPANY (Continued)**

**S103622068**

Part. Matter 10 Micrometers and Smlr Tons/Yr:0

**HAZNET:**

Site Name: COOK COMPRESSION A DOVER COMPANY  
Year: 2017  
GEPAID: CAL000421273  
Contact: MICHAEL PEREZ  
Telephone: 5628461638  
Mailing Name: Not reported  
Mailing Address: 10800 VALLEY VIEW ST  
Mailing City,St,Zip: CYPRESS, CA 90630  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Unspecified oil-containing waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Tons: 0.3  
Cat Decode: Unspecified oil-containing waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Facility County: Orange

Site Name: COOK COMPRESSION A DOVER COMPANY  
Year: 2017  
GEPAID: CAL000421273  
Contact: MICHAEL PEREZ  
Telephone: 5628461638  
Mailing Name: Not reported  
Mailing Address: 10800 VALLEY VIEW ST  
Mailing City,St,Zip: CYPRESS, CA 90630  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Other inorganic solid waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Tons: 0.225  
Cat Decode: Other inorganic solid waste  
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)  
Facility County: Orange

Site Name: COOK COMPRESSION A DOVER COMPANY  
Year: 2016  
GEPAID: CAL000421273  
Contact: MICHAEL PEREZ  
Telephone: 5628461638  
Mailing Name: Not reported  
Mailing Address: 10800 VALLEY VIEW ST  
Mailing City,St,Zip: CYPRESS, CA 90630  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Unspecified oil-containing waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery  
(H010-H129) Or (H131-H135)

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**THE BOEING COMPANY (Continued)**

**S103622068**

Tons: 0.1  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

Site Name: COOK COMPRESSION A DOVER COMPANY  
Year: 2016  
GEPAID: CAL000421273  
Contact: MICHAEL PEREZ  
Telephone: 5628461638  
Mailing Name: Not reported  
Mailing Address: 10800 VALLEY VIEW ST  
Mailing City,St,Zip: CYPRESS, CA 90630  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Oil/water separation sludge  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

Tons: 0.72975  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

Site Name: COOK COMPRESSION  
Year: 2016  
GEPAID: CAC002870235  
Contact: MIKE PEREZ  
Telephone: 5628461638  
Mailing Name: Not reported  
Mailing Address: 10800 VALLEY VIEW ST  
Mailing City,St,Zip: CYPRESS, CA 906305016  
Gen County: Orange  
TSD EPA ID: CAD044429835  
TSD County: Los Angeles  
Waste Category: Unspecified oil-containing waste  
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

Tons: 0.2  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: Orange

[Click this hyperlink](#) while viewing on your computer to access additional CA\_HAZNET: detail in the EDR Site Report.

I42  
SW  
1/2-1  
0.956 mi.  
5050 ft.

**LOS ALAMITOS RAD BOMB/SCORE SITE**

**ENVIROSTOR S107737117  
N/A**

**LOS ALAMITOS, CA**

**Site 1 of 2 in cluster I**

**Relative:  
Lower  
Actual:  
26 ft.**

ENVIROSTOR:  
Facility ID: 80000425  
Status: Inactive - Needs Evaluation  
Status Date: 08/14/2018  
Site Code: Not reported  
Site Type: Military Evaluation



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOS ALAMITOS RAD BOMB/SCORE SITE (Continued)**

**S107737117**

Site Type Detailed: FUDS  
Acres: 10  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Not reported  
Supervisor: Patrick Hsieh  
Division Branch: Cleanup Cypress  
Assembly: 72  
Senate: 34  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: DERA  
Latitude: 33.79166  
Longitude: -118.0527  
APN: NONE SPECIFIED  
Past Use: NONE SPECIFIED  
Potential COC: Explosives (UXO, MEC)  
Confirmed COC: NONE SPECIFIED  
Potential Description: NONE SPECIFIED  
Alias Name: CA99799F557100  
Alias Type: Federal Facility ID  
Alias Name: J09CA0561  
Alias Type: INPR  
Alias Name: 80000425  
Alias Type: Envirostor ID Number

**Completed Info:**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Inventory Project Report (INPR)  
Completed Date: 02/24/1993  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 07/17/2017  
Comments: Draft Site visit report on R drive for management review.

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

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**I43**  
**SW**  
**1/2-1**  
**0.956 mi.**  
**5050 ft.**  
**NAS LOS ALAMITOS**  
**LOS ALAMITOS, CA**  
**Site 2 of 2 in cluster I**

**ENVIROSTOR** **S107736812**  
**N/A**

**Relative:** ENVIROSTOR:  
**Lower** Facility ID: 80000646  
Status: Inactive - Needs Evaluation  
**Actual:** Status Date: 07/01/2005  
**26 ft.** Site Code: Not reported  
Site Type: Military Evaluation  
Site Type Detailed: FUDS  
Acres: Not reported  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: SMBRP  
Program Manager: Not reported  
Supervisor: Douglas Bautista  
Division Branch: Cleanup Cypress  
Assembly: 72  
Senate: 34  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: DERA  
Latitude: 33.79166  
Longitude: -118.0527  
APN: NONE SPECIFIED  
Past Use: NONE SPECIFIED  
Potential COC: NONE SPECIFIED  
Confirmed COC: NONE SPECIFIED  
Potential Description: NONE SPECIFIED  
Alias Name: CA99799F593900  
Alias Type: Federal Facility ID  
Alias Name: J09CA1044  
Alias Type: INPR  
Alias Name: 80000646  
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

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LOS ALAMITOS	S121699767	BENJAMIN B & MARIA L BARAJAS DBA	NE CRN LOS ALAMITOS & KATELLA	90720	DRYCLEANERS

## 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: 03/11/2019	Source: EPA
Date Data Arrived at EDR: 03/14/2019	Telephone: N/A
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 18	Next Scheduled EDR Contact: 07/15/2019
	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: 03/11/2019	Source: EPA
Date Data Arrived at EDR: 03/14/2019	Telephone: N/A
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 18	Next Scheduled EDR Contact: 07/15/2019
	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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/11/2019  
Date Data Arrived at EDR: 03/14/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 18

Source: EPA  
Telephone: N/A  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/15/2019  
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  
Date Data Arrived at EDR: 01/05/2017  
Date Made Active in Reports: 04/07/2017  
Number of Days to Update: 92

Source: Environmental Protection Agency  
Telephone: 703-603-8704  
Last EDR Contact: 04/05/2019  
Next Scheduled EDR Contact: 07/15/2019  
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 known 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: 03/11/2019  
Date Data Arrived at EDR: 03/14/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 34

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/11/2019	Source: EPA
Date Data Arrived at EDR: 03/14/2019	Telephone: 800-424-9346
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019	Source: EPA
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-424-9346
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: (415) 495-8895
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: (415) 495-8895
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: (415) 495-8895
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: (415) 495-8895
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal institutional controls / engineering controls registries***

#### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019	Source: Department of the Navy
Date Data Arrived at EDR: 03/07/2019	Telephone: 843-820-7326
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 02/07/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 05/27/2019
	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: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 02/04/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 06/10/2019
	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: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 02/04/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 06/10/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019

Date Data Arrived at EDR: 03/26/2019

Date Made Active in Reports: 05/01/2019

Number of Days to Update: 36

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 03/26/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Quarterly

## ***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity.

These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/28/2019

Date Data Arrived at EDR: 01/29/2019

Date Made Active in Reports: 03/05/2019

Number of Days to Update: 35

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Last EDR Contact: 04/30/2019

Next Scheduled EDR Contact: 08/12/2019

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 identifies 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: 01/28/2019

Date Data Arrived at EDR: 01/29/2019

Date Made Active in Reports: 03/05/2019

Number of Days to Update: 35

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Last EDR Contact: 04/30/2019

Next Scheduled EDR Contact: 08/12/2019

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 inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/11/2019

Date Data Arrived at EDR: 02/12/2019

Date Made Active in Reports: 03/05/2019

Number of Days to Update: 21

Source: Department of Resources Recycling and Recovery

Telephone: 916-341-6320

Last EDR Contact: 02/12/2019

Next Scheduled EDR Contact: 05/27/2019

Data Release Frequency: Quarterly

## ***State and tribal leaking storage tank lists***



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 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: 12/10/2018

Date Data Arrived at EDR: 12/11/2018

Date Made Active in Reports: 01/15/2019

Number of Days to Update: 35

Source: State Water Resources Control Board

Telephone: see region list

Last EDR Contact: 12/11/2018

Next Scheduled EDR Contact: 03/25/2019

Data Release Frequency: Quarterly

### 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

### 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 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 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

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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 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

### INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/16/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018  
Date Data Arrived at EDR: 03/08/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/17/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
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: 09/24/2018  
Date Data Arrived at EDR: 03/12/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 50

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 6  
Telephone: 214-665-6597  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018

Date Data Arrived at EDR: 12/11/2018

Date Made Active in Reports: 01/15/2019

Number of Days to Update: 35

Source: State Water Resources Control Board

Telephone: 866-480-1028

Last EDR Contact: 12/12/2018

Next Scheduled EDR Contact: 03/25/2019

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

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005  
Date Data Arrived at EDR: 05/25/2005  
Date Made Active in Reports: 06/16/2005  
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch  
Telephone: 619-241-6583  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: Semi-Annually

### SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004  
Date Data Arrived at EDR: 09/07/2004  
Date Made Active in Reports: 10/12/2004  
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region  
Telephone: 530-542-5574  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: No Update Planned

### SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004  
Date Data Arrived at EDR: 11/29/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region  
Telephone: 760-346-7491  
Last EDR Contact: 08/01/2011  
Next Scheduled EDR Contact: 11/14/2011  
Data Release Frequency: No Update Planned

### SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008  
Date Data Arrived at EDR: 04/03/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)  
Telephone: 951-782-3298  
Last EDR Contact: 09/12/2011  
Next Scheduled EDR Contact: 12/26/2011  
Data Release Frequency: Semi-Annually

### SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007  
Date Data Arrived at EDR: 09/11/2007  
Date Made Active in Reports: 09/28/2007  
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-467-2980  
Last EDR Contact: 08/08/2011  
Next Scheduled EDR Contact: 11/21/2011  
Data Release Frequency: Annually

### **State and tribal registered storage tank lists**

#### FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017  
Date Data Arrived at EDR: 05/30/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 136

Source: FEMA  
Telephone: 202-646-5797  
Last EDR Contact: 04/25/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/10/2018	Source: SWRCB
Date Data Arrived at EDR: 12/11/2018	Telephone: 916-341-5851
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/11/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Semi-Annually

### UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/11/2019	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/13/2019	Telephone: 916-327-7844
Date Made Active in Reports: 04/03/2019	Last EDR Contact: 03/13/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Varies

### MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 12/10/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Varies

### AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 07/12/2016	Telephone: 916-327-5092
Date Made Active in Reports: 09/19/2016	Last EDR Contact: 03/18/2019
Number of Days to Update: 69	Next Scheduled EDR Contact: 07/01/2019
	Data Release Frequency: Quarterly

### 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: 09/24/2018	Source: EPA Region 4
Date Data Arrived at EDR: 03/12/2019	Telephone: 404-562-9424
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018	Source: EPA Region 5
Date Data Arrived at EDR: 03/07/2019	Telephone: 312-886-6136
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 10/17/2018	Source: EPA Region 10
Date Data Arrived at EDR: 03/07/2019	Telephone: 206-553-2857
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018	Source: EPA Region 7
Date Data Arrived at EDR: 03/07/2019	Telephone: 913-551-7003
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	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: 10/16/2018	Source: EPA Region 8
Date Data Arrived at EDR: 03/07/2019	Telephone: 303-312-6137
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018	Source: EPA Region 9
Date Data Arrived at EDR: 03/08/2019	Telephone: 415-972-3368
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018	Source: EPA, Region 1
Date Data Arrived at EDR: 03/07/2019	Telephone: 617-918-1313
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	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: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-7591
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***State and tribal voluntary cleanup sites***

### **INDIAN VCP R7: Voluntary Cleanup Priority Listing**

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

### **INDIAN VCP R1: Voluntary Cleanup Priority Listing**

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/25/2019
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/08/2019
	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: 01/28/2019	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/29/2019	Telephone: 916-323-3400
Date Made Active in Reports: 03/05/2019	Last EDR Contact: 04/30/2019
Number of Days to Update: 35	Next Scheduled EDR Contact: 08/12/2019
	Data Release Frequency: Quarterly

## ***State and tribal Brownfields sites***

### **BROWNFIELDS: Considered Brownfields Sites Listing**

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/25/2019	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/26/2019	Telephone: 916-323-7905
Date Made Active in Reports: 04/29/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

### **US BROWNFIELDS: A Listing of Brownfields Sites**

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/18/2018	Telephone: 202-566-2777
Date Made Active in Reports: 01/11/2019	Last EDR Contact: 03/19/2019
Number of Days to Update: 24	Next Scheduled EDR Contact: 07/01/2019
	Data Release Frequency: Semi-Annually



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***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: 04/25/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: No Update Planned

### **SWRCY: Recycler Database**

A listing of recycling facilities in California.

Date of Government Version: 03/11/2019  
Date Data Arrived at EDR: 03/13/2019  
Date Made Active in Reports: 04/30/2019  
Number of Days to Update: 48

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 03/13/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Quarterly

### **HAULERS: Registered Waste Tire Haulers Listing**

A listing of registered waste tire haulers.

Date of Government Version: 03/26/2019  
Date Data Arrived at EDR: 03/27/2019  
Date Made Active in Reports: 04/30/2019  
Number of Days to Update: 34

Source: Integrated Waste Management Board  
Telephone: 916-341-6422  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 05/27/2019  
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: 04/26/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### **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: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: No Update Planned

### **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

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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 Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### Local Lists of Hazardous waste / Contaminated Sites

#### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 02/21/2019  
Next Scheduled EDR Contact: 06/10/2019  
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: 01/28/2019  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 35

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 04/30/2019  
Next Scheduled EDR Contact: 08/12/2019  
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: 12/31/2017  
Date Data Arrived at EDR: 06/12/2018  
Date Made Active in Reports: 08/06/2018  
Number of Days to Update: 55

Source: Department of Toxic Substances Control  
Telephone: 916-255-6504  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 07/22/2019  
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

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018	Source: CalEPA
Date Data Arrived at EDR: 10/23/2018	Telephone: 916-323-2514
Date Made Active in Reports: 11/30/2018	Last EDR Contact: 04/11/2019
Number of Days to Update: 38	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Quarterly

### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 02/26/2019	Telephone: 202-307-1000
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 02/21/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 06/10/2019
	Data Release Frequency: Quarterly

### PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 02/21/2019	Source: State Water Resources Control Board
Date Data Arrived at EDR: 02/22/2019	Telephone: 866-480-1028
Date Made Active in Reports: 04/15/2019	Last EDR Contact: 03/11/2019
Number of Days to Update: 52	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Varies

### **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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	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: 12/04/2018	Source: Department of Public Health
Date Data Arrived at EDR: 12/06/2018	Telephone: 707-463-4466
Date Made Active in Reports: 12/14/2018	Last EDR Contact: 02/21/2019
Number of Days to Update: 8	Next Scheduled EDR Contact: 06/10/2019
	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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1990  
Date Data Arrived at EDR: 01/25/1991  
Date Made Active in Reports: 02/12/1991  
Number of Days to Update: 18

Source: State Water Resources Control Board  
Telephone: 916-341-5851  
Last EDR Contact: 07/26/2001  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018  
Date Data Arrived at EDR: 09/12/2018  
Date Made Active in Reports: 10/11/2018  
Number of Days to Update: 29

Source: San Francisco County Department of Public Health  
Telephone: 415-252-3896  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994  
Date Data Arrived at EDR: 09/05/1995  
Date Made Active in Reports: 09/29/1995  
Number of Days to Update: 24

Source: California Environmental Protection Agency  
Telephone: 916-341-5851  
Last EDR Contact: 12/28/1998  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/30/2018  
Number of Days to Update: 38

Source: California Environmental Protection Agency  
Telephone: 916-323-2514  
Last EDR Contact: 04/11/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

### Local Land Records

#### LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/28/2019  
Date Data Arrived at EDR: 03/01/2019  
Date Made Active in Reports: 04/02/2019  
Number of Days to Update: 32

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 02/27/2019  
Next Scheduled EDR Contact: 06/17/2019  
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: 03/11/2019  
Date Data Arrived at EDR: 03/14/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 7

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Semi-Annually

#### DEED: Deed Restriction Listing

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/04/2019	Source: DTSC and SWRCB
Date Data Arrived at EDR: 03/05/2019	Telephone: 916-323-3400
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 03/05/2019
Number of Days to Update: 27	Next Scheduled EDR Contact: 06/17/2019
	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: 02/08/2019	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 02/08/2019	Telephone: 202-366-4555
Date Made Active in Reports: 03/21/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

#### **CHMIRS: California Hazardous Material Incident Report System**

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/24/2018	Source: Office of Emergency Services
Date Data Arrived at EDR: 01/24/2019	Telephone: 916-845-8400
Date Made Active in Reports: 03/05/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Semi-Annually

#### **LDS: Land Disposal Sites Listing (GEOTRACKER)**

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018	Source: State Water Quality Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	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: 12/10/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012

Date Data Arrived at EDR: 01/03/2013

Date Made Active in Reports: 02/22/2013

Number of Days to Update: 50

Source: FirstSearch

Telephone: N/A

Last EDR Contact: 01/03/2013

Next Scheduled EDR Contact: N/A

Data Release Frequency: No Update Planned

### Other Ascertainable Records

#### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019

Date Data Arrived at EDR: 03/27/2019

Date Made Active in Reports: 04/17/2019

Number of Days to Update: 21

Source: Environmental Protection Agency

Telephone: (415) 495-8895

Last EDR Contact: 03/27/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Quarterly

#### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015

Date Data Arrived at EDR: 07/08/2015

Date Made Active in Reports: 10/13/2015

Number of Days to Update: 97

Source: U.S. Army Corps of Engineers

Telephone: 202-528-4285

Last EDR Contact: 04/03/2019

Next Scheduled EDR Contact: 06/03/2019

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: 04/12/2019

Next Scheduled EDR Contact: 07/22/2019

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: 04/12/2019

Next Scheduled EDR Contact: 07/22/2019

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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 02/15/2019  
Next Scheduled EDR Contact: 05/27/2019  
Data Release Frequency: Varies

### US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/25/2019  
Date Data Arrived at EDR: 03/26/2019  
Date Made Active in Reports: 05/07/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 07/08/2019  
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: 05/06/2019  
Next Scheduled EDR Contact: 08/19/2019  
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: 09/30/2017  
Date Data Arrived at EDR: 05/08/2018  
Date Made Active in Reports: 07/20/2018  
Number of Days to Update: 73

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 02/08/2019  
Next Scheduled EDR Contact: 05/20/2019  
Data Release Frequency: Varies

### TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 06/21/2017  
Date Made Active in Reports: 01/05/2018  
Number of Days to Update: 198

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 07/01/2019  
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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 01/10/2018  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 2

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 02/20/2019  
Next Scheduled EDR Contact: 06/03/2019  
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: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
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: 03/11/2019  
Date Data Arrived at EDR: 03/14/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 18

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 06/17/2019  
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: 02/01/2019  
Date Data Arrived at EDR: 02/14/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 35

Source: Environmental Protection Agency  
Telephone: 202-564-8600  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
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



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 03/11/2019	Source: EPA
Date Data Arrived at EDR: 03/14/2019	Telephone: 202-564-6023
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/20/2019
	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: 09/14/2018	Source: EPA
Date Data Arrived at EDR: 10/11/2018	Telephone: 202-566-0500
Date Made Active in Reports: 12/07/2018	Last EDR Contact: 04/10/2019
Number of Days to Update: 57	Next Scheduled EDR Contact: 07/22/2019
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 04/08/2019
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/22/2019
	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	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Quarterly

### FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 09/08/2016	Telephone: 301-415-7169
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 04/22/2019
Number of Days to Update: 43	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 03/07/2019
Number of Days to Update: 76	Next Scheduled EDR Contact: 06/17/2019
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 03/05/2019
Number of Days to Update: 40	Next Scheduled EDR Contact: 06/17/2019
	Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/30/2017	Telephone: 202-566-0517
Date Made Active in Reports: 12/15/2017	Last EDR Contact: 04/26/2019
Number of Days to Update: 15	Next Scheduled EDR Contact: 08/05/2019
	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: 01/02/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/03/2019	Telephone: 202-343-9775
Date Made Active in Reports: 03/15/2019	Last EDR Contact: 04/02/2019
Number of Days to Update: 71	Next Scheduled EDR Contact: 07/15/2019
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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 Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 51

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 04/30/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### 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: 12/31/2018  
Date Data Arrived at EDR: 02/11/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 38

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 04/05/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 02/22/2017  
Date Made Active in Reports: 09/28/2017  
Number of Days to Update: 218

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Biennially

### INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 07/14/2015  
Date Made Active in Reports: 01/10/2017  
Number of Days to Update: 546

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 04/11/2019  
Next Scheduled EDR Contact: 07/22/2019  
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: 08/08/2017  
Date Data Arrived at EDR: 09/11/2018  
Date Made Active in Reports: 09/14/2018  
Number of Days to Update: 3

Source: Department of Energy  
Telephone: 202-586-3559  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/23/2017  
Date Data Arrived at EDR: 10/11/2017  
Date Made Active in Reports: 11/03/2017  
Number of Days to Update: 23

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 02/22/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/11/2019  
Date Data Arrived at EDR: 03/14/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 7

Source: Environmental Protection Agency  
Telephone: 703-603-8787  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/15/2019  
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 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018  
Date Data Arrived at EDR: 02/27/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 02/27/2019  
Next Scheduled EDR Contact: 06/10/2019  
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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/01/2019  
Next Scheduled EDR Contact: 06/10/2019  
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: 03/01/2019  
Next Scheduled EDR Contact: 06/10/2019  
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: 03/27/2019  
Date Data Arrived at EDR: 03/28/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 34

Source: Department of Interior  
Telephone: 202-208-2609  
Last EDR Contact: 03/21/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 03/15/2019  
Number of Days to Update: 10

Source: EPA  
Telephone: (415) 947-8000  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Quarterly

### DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018  
Date Data Arrived at EDR: 07/26/2018  
Date Made Active in Reports: 10/05/2018  
Number of Days to Update: 71

Source: Environmental Protection Agency  
Telephone: 202-564-0527  
Last EDR Contact: 03/01/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: Varies

### UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 01/17/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 74

Source: Department of Defense  
Telephone: 703-704-1564  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/03/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: 202-564-2280
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/09/2019
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### 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: 02/19/2019	Source: EPA
Date Data Arrived at EDR: 02/21/2019	Telephone: 800-385-6164
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 02/21/2019
Number of Days to Update: 39	Next Scheduled EDR Contact: 06/03/2019
	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	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/25/2019	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 03/26/2019	Telephone: 916-323-3400
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 36	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 04/18/2019	Source: San Francisco County Department of Environmental Health
Date Data Arrived at EDR: 04/19/2019	Telephone: 415-252-3896
Date Made Active in Reports: 04/30/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 11	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Varies

### CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 01/23/2019	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 02/26/2019	Telephone: 925-454-2361
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 02/26/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/27/2019
	Data Release Frequency: Varies

### DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/27/2019  
Date Data Arrived at EDR: 02/28/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 32

Source: Antelope Valley Air Quality Management District  
Telephone: 661-723-8070  
Last EDR Contact: 02/27/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/13/2018  
Date Data Arrived at EDR: 01/17/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 47

Source: Department of Toxic Substance Control  
Telephone: 916-327-4498  
Last EDR Contact: 02/27/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Annually

### DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/19/2019  
Date Data Arrived at EDR: 03/22/2019  
Date Made Active in Reports: 04/09/2019  
Number of Days to Update: 18

Source: South Coast Air Quality Management District  
Telephone: 909-396-3211  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: Varies

### EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 06/20/2018  
Date Made Active in Reports: 08/06/2018  
Number of Days to Update: 47

Source: California Air Resources Board  
Telephone: 916-322-2990  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 07/01/2019  
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: 11/01/2018  
Date Data Arrived at EDR: 11/02/2018  
Date Made Active in Reports: 12/13/2018  
Number of Days to Update: 41

Source: State Water Resources Control Board  
Telephone: 916-445-9379  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/10/2019  
Date Data Arrived at EDR: 01/23/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 41

Source: Department of Toxic Substances Control  
Telephone: 916-255-3628  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
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.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/15/2019  
Date Data Arrived at EDR: 02/19/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 14

Source: California Integrated Waste Management Board  
Telephone: 916-341-6066  
Last EDR Contact: 02/11/2019  
Next Scheduled EDR Contact: 05/27/2019  
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: 12/31/2017  
Date Data Arrived at EDR: 10/10/2018  
Date Made Active in Reports: 11/16/2018  
Number of Days to Update: 37

Source: California Environmental Protection Agency  
Telephone: 916-255-1136  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 02/20/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 13

Source: Department of Toxic Substances Control  
Telephone: 877-786-9427  
Last EDR Contact: 02/20/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Quarterly

### HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001  
Date Data Arrived at EDR: 01/22/2009  
Date Made Active in Reports: 04/08/2009  
Number of Days to Update: 76

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 01/22/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 02/20/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 13

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 02/20/2019  
Next Scheduled EDR Contact: 06/03/2019  
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: 01/07/2019  
Date Data Arrived at EDR: 01/08/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 56

Source: Department of Toxic Substances Control  
Telephone: 916-440-7145  
Last EDR Contact: 04/09/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018	Source: Department of Conservation
Date Data Arrived at EDR: 12/12/2018	Telephone: 916-322-1080
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 34	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Quarterly

### MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/20/2019	Source: Department of Public Health
Date Data Arrived at EDR: 03/05/2019	Telephone: 916-558-1784
Date Made Active in Reports: 04/02/2019	Last EDR Contact: 03/05/2019
Number of Days to Update: 28	Next Scheduled EDR Contact: 06/17/2019
	Data Release Frequency: Varies

### NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/11/2019	Source: State Water Resources Control Board
Date Data Arrived at EDR: 02/12/2019	Telephone: 916-445-9379
Date Made Active in Reports: 03/07/2019	Last EDR Contact: 02/12/2019
Number of Days to Update: 23	Next Scheduled EDR Contact: 05/27/2019
	Data Release Frequency: Quarterly

### PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/04/2019	Source: Department of Pesticide Regulation
Date Data Arrived at EDR: 03/05/2019	Telephone: 916-445-4038
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 03/05/2019
Number of Days to Update: 31	Next Scheduled EDR Contact: 06/17/2019
	Data Release Frequency: Quarterly

### PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/11/2019	Source: Department of Conservation
Date Data Arrived at EDR: 03/13/2019	Telephone: 916-323-3836
Date Made Active in Reports: 04/29/2019	Last EDR Contact: 03/13/2019
Number of Days to Update: 47	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Quarterly

### NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/18/2019	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/19/2019	Telephone: 916-445-3846
Date Made Active in Reports: 04/29/2019	Last EDR Contact: 03/18/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 07/01/2019
	Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018	Source: Department of Conservation
Date Data Arrived at EDR: 06/13/2018	Telephone: 916-445-2408
Date Made Active in Reports: 07/17/2018	Last EDR Contact: 03/13/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Varies

### UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 12/10/2018	Source: State Water Resource Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Varies

### WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018	Source: RWQCB, Central Valley Region
Date Data Arrived at EDR: 07/11/2018	Telephone: 559-445-5577
Date Made Active in Reports: 09/13/2018	Last EDR Contact: 04/12/2019
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

### WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 02/13/2019
Number of Days to Update: 9	Next Scheduled EDR Contact: 06/03/2019
	Data Release Frequency: Quarterly

### MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 12/10/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Varies

### PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 12/10/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/11/2018	Telephone: 866-480-1028
Date Made Active in Reports: 01/15/2019	Last EDR Contact: 12/12/2018
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/25/2019
	Data Release Frequency: Varies

### WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/11/2019  
Date Data Arrived at EDR: 03/13/2019  
Date Made Active in Reports: 04/29/2019  
Number of Days to Update: 47

Source: State Water Resources Control Board  
Telephone: 916-341-5810  
Last EDR Contact: 03/13/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Quarterly

### CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 03/05/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/02/2019  
Number of Days to Update: 28

Source: State Water Resources Control Board  
Telephone: 866-794-4977  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/30/2018  
Number of Days to Update: 38

Source: California Environmental Protection Agency  
Telephone: 916-323-2514  
Last EDR Contact: 04/11/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### 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: 03/25/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Varies

### NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/11/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 03/25/2019  
Data Release Frequency: Varies

### OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/11/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 03/25/2019  
Data Release Frequency: Varies

### PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/11/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 03/25/2019  
Data Release Frequency: Varies

### SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/11/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 03/25/2019  
Data Release Frequency: Varies

### WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/11/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 03/25/2019  
Data Release Frequency: Varies

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/13/2014  
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 12/30/2013  
Number of Days to Update: 182

Source: State Water Resources Control Board  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### COUNTY RECORDS

#### ALAMEDA COUNTY:

##### CS ALAMEDA: 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: 01/09/2019  
Date Data Arrived at EDR: 01/11/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 53

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Semi-Annually

##### UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/07/2019  
Date Data Arrived at EDR: 01/08/2019  
Date Made Active in Reports: 03/08/2019  
Number of Days to Update: 59

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 04/24/2047  
Data Release Frequency: Semi-Annually

#### AMADOR COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA AMADOR: CUPA Facility List Cupa Facility List

Date of Government Version: 01/07/2019  
Date Data Arrived at EDR: 01/08/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 58

Source: Amador County Environmental Health  
Telephone: 209-223-6439  
Last EDR Contact: 02/27/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### BUTTE COUNTY:

#### CUPA BUTTE: CUPA Facility Listing Cupa facility list.

Date of Government Version: 04/21/2017  
Date Data Arrived at EDR: 04/25/2017  
Date Made Active in Reports: 08/09/2017  
Number of Days to Update: 106

Source: Public Health Department  
Telephone: 530-538-7149  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: No Update Planned

### CALVERAS COUNTY:

#### CUPA CALVERAS: CUPA Facility Listing Cupa Facility Listing

Date of Government Version: 01/24/2019  
Date Data Arrived at EDR: 01/25/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 39

Source: Calveras County Environmental Health  
Telephone: 209-754-6399  
Last EDR Contact: 03/25/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Quarterly

### COLUSA COUNTY:

#### CUPA COLUSA: CUPA Facility List Cupa facility list.

Date of Government Version: 02/27/2019  
Date Data Arrived at EDR: 02/28/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 32

Source: Health & Human Services  
Telephone: 530-458-0396  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Semi-Annually

### CONTRA COSTA COUNTY:

#### SL CONTRA COSTA: Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/14/2019  
Date Data Arrived at EDR: 02/19/2019  
Date Made Active in Reports: 03/08/2019  
Number of Days to Update: 17

Source: Contra Costa Health Services Department  
Telephone: 925-646-2286  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Semi-Annually

### DEL NORTE COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA DEL NORTE: CUPA Facility List Cupa Facility list

Date of Government Version: 01/16/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 28

Source: Del Norte County Environmental Health Division  
Telephone: 707-465-0426  
Last EDR Contact: 04/25/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### EL DORADO COUNTY:

#### CUPA EL DORADO: CUPA Facility List CUPA facility list.

Date of Government Version: 02/27/2019  
Date Data Arrived at EDR: 02/28/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 32

Source: El Dorado County Environmental Management Department  
Telephone: 530-621-6623  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### FRESNO COUNTY:

#### CUPA FRESNO: 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: 04/10/2019  
Date Data Arrived at EDR: 04/11/2019  
Date Made Active in Reports: 04/30/2019  
Number of Days to Update: 19

Source: Dept. of Community Health  
Telephone: 559-445-3271  
Last EDR Contact: 03/29/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Semi-Annually

### GLENN COUNTY:

#### CUPA GLENN: CUPA Facility List Cupa facility list

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District  
Telephone: 830-934-6500  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### HUMBOLDT COUNTY:

#### CUPA HUMBOLDT: CUPA Facility List CUPA facility list.

Date of Government Version: 12/11/2018  
Date Data Arrived at EDR: 12/13/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 33

Source: Humboldt County Environmental Health  
Telephone: N/A  
Last EDR Contact: 11/19/2018  
Next Scheduled EDR Contact: 03/04/2019  
Data Release Frequency: Semi-Annually

### IMPERIAL COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA IMPERIAL: CUPA Facility List Cupa facility list.

Date of Government Version: 01/18/2019  
Date Data Arrived at EDR: 01/23/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 41

Source: San Diego Border Field Office  
Telephone: 760-339-2777  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INYO COUNTY:

#### CUPA INYO: CUPA Facility List Cupa facility list.

Date of Government Version: 04/02/2018  
Date Data Arrived at EDR: 04/03/2018  
Date Made Active in Reports: 06/14/2018  
Number of Days to Update: 72

Source: Inyo County Environmental Health Services  
Telephone: 760-878-0238  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### KERN COUNTY:

#### UST KERN: Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 01/28/2019  
Date Data Arrived at EDR: 02/07/2019  
Date Made Active in Reports: 03/08/2019  
Number of Days to Update: 29

Source: Kern County Environment Health Services Department  
Telephone: 661-862-8700  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### KINGS COUNTY:

#### CUPA KINGS: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/14/2019  
Date Data Arrived at EDR: 02/19/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 14

Source: Kings County Department of Public Health  
Telephone: 559-584-1411  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### LAKE COUNTY:

#### CUPA LAKE: CUPA Facility List Cupa facility list

Date of Government Version: 02/08/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/12/2019  
Number of Days to Update: 28

Source: Lake County Environmental Health  
Telephone: 707-263-1164  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Varies

### LASSEN COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA LASSEN: CUPA Facility List Cupa facility list

Date of Government Version: 01/17/2019  
Date Data Arrived at EDR: 01/18/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 46

Source: Lassen County Environmental Health  
Telephone: 530-251-8528  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### LOS ANGELES COUNTY:

#### AOCONCERN: Key Areas of Concerns in Los Angeles County

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

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: N/A  
Telephone: N/A  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: No Update Planned

#### HMS LOS ANGELES: HMS: Street Number List Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 12/19/2018  
Date Data Arrived at EDR: 01/10/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 56

Source: Department of Public Works  
Telephone: 626-458-3517  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Semi-Annually

#### LF LOS ANGELES: List of Solid Waste Facilities Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/14/2019  
Date Data Arrived at EDR: 01/15/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 51

Source: La County Department of Public Works  
Telephone: 818-458-5185  
Last EDR Contact: 04/16/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Varies

#### LF LOS ANGELES CITY: City of Los Angeles Landfills Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019  
Date Data Arrived at EDR: 01/15/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 51

Source: Engineering & Construction Division  
Telephone: 213-473-7869  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Varies

#### SITE MIT LOS ANGELES: Site Mitigation List Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2019  
Date Data Arrived at EDR: 02/01/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 34

Source: Community Health Services  
Telephone: 323-890-7806  
Last EDR Contact: 04/16/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Annually

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST EL SEGUNDO: City of El Segundo Underground Storage Tank  
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 04/19/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 04/15/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Semi-Annually

UST LONG BEACH: 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	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 03/10/2017	Telephone: 562-570-2563
Date Made Active in Reports: 05/03/2017	Last EDR Contact: 04/22/2019
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank  
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 10/05/2018	Telephone: 310-618-2973
Date Made Active in Reports: 11/02/2018	Last EDR Contact: 04/22/2019
Number of Days to Update: 28	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Semi-Annually

### MADERA COUNTY:

#### CUPA MADERA: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/20/2019	Source: Madera County Environmental Health
Date Data Arrived at EDR: 02/22/2019	Telephone: 559-675-7823
Date Made Active in Reports: 03/07/2019	Last EDR Contact: 02/15/2019
Number of Days to Update: 13	Next Scheduled EDR Contact: 06/03/2019
	Data Release Frequency: Varies

### MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites  
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018	Source: Public Works Department Waste Management
Date Data Arrived at EDR: 10/04/2018	Telephone: 415-473-6647
Date Made Active in Reports: 11/02/2018	Last EDR Contact: 03/29/2019
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Semi-Annually

### MERCED COUNTY:

CUPA MERCED: CUPA Facility List  
CUPA facility list.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/29/2018  
Date Data Arrived at EDR: 08/31/2018  
Date Made Active in Reports: 09/19/2018  
Number of Days to Update: 19

Source: Merced County Environmental Health  
Telephone: 209-381-1094  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### MONO COUNTY:

#### CUPA MONO: CUPA Facility List CUPA Facility List

Date of Government Version: 02/21/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 34

Source: Mono County Health Department  
Telephone: 760-932-5580  
Last EDR Contact: 02/21/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: Varies

### MONTEREY COUNTY:

#### CUPA MONTEREY: CUPA Facility Listing CUPA Program listing from the Environmental Health Division.

Date of Government Version: 02/05/2019  
Date Data Arrived at EDR: 02/07/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 26

Source: Monterey County Health Department  
Telephone: 831-796-1297  
Last EDR Contact: 04/01/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Varies

### NAPA COUNTY:

#### LUST NAPA: 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: 02/21/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: No Update Planned

#### UST NAPA: Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 02/21/2019  
Date Data Arrived at EDR: 02/22/2019  
Date Made Active in Reports: 03/08/2019  
Number of Days to Update: 14

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 02/21/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: No Update Planned

### NEVADA COUNTY:

#### CUPA NEVADA: CUPA Facility List CUPA facility list.

Date of Government Version: 01/25/2019  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/05/2019  
Number of Days to Update: 35

Source: Community Development Agency  
Telephone: 530-265-1467  
Last EDR Contact: 04/25/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### ORANGE COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### IND\_SITE ORANGE: List of Industrial Site Cleanups Petroleum and non-petroleum spills.

Date of Government Version: 01/02/2019	Source: Health Care Agency
Date Data Arrived at EDR: 02/07/2019	Telephone: 714-834-3446
Date Made Active in Reports: 03/05/2019	Last EDR Contact: 05/06/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Annually

### LUST ORANGE: List of Underground Storage Tank Cleanups Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 01/02/2019	Source: Health Care Agency
Date Data Arrived at EDR: 02/08/2019	Telephone: 714-834-3446
Date Made Active in Reports: 03/06/2019	Last EDR Contact: 05/06/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Quarterly

### UST ORANGE: List of Underground Storage Tank Facilities Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2019	Source: Health Care Agency
Date Data Arrived at EDR: 02/05/2019	Telephone: 714-834-3446
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/07/2019
Number of Days to Update: 31	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Quarterly

### PLACER COUNTY:

#### MS PLACER: Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 02/28/2019	Source: Placer County Health and Human Services
Date Data Arrived at EDR: 03/01/2019	Telephone: 530-745-2363
Date Made Active in Reports: 04/12/2019	Last EDR Contact: 02/27/2019
Number of Days to Update: 42	Next Scheduled EDR Contact: 06/17/2019
	Data Release Frequency: Semi-Annually

### PLUMAS COUNTY:

#### CUPA PLUMAS: CUPA Facility List

Plumas County CUPA Program facilities.

Date of Government Version: 01/14/2019	Source: Plumas County Environmental Health
Date Data Arrived at EDR: 01/18/2019	Telephone: 530-283-6355
Date Made Active in Reports: 03/05/2019	Last EDR Contact: 04/22/2019
Number of Days to Update: 46	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### RIVERSIDE COUNTY:

#### LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/11/2019	Source: Department of Environmental Health
Date Data Arrived at EDR: 04/12/2019	Telephone: 951-358-5055
Date Made Active in Reports: 04/30/2019	Last EDR Contact: 03/18/2019
Number of Days to Update: 18	Next Scheduled EDR Contact: 07/01/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### UST RIVERSIDE: Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 01/29/2019

Date Data Arrived at EDR: 01/31/2019

Date Made Active in Reports: 03/08/2019

Number of Days to Update: 36

Source: Department of Environmental Health

Telephone: 951-358-5055

Last EDR Contact: 03/18/2019

Next Scheduled EDR Contact: 07/01/2019

Data Release Frequency: Quarterly

### SACRAMENTO COUNTY:

#### CS SACRAMENTO: Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2018

Date Data Arrived at EDR: 01/04/2019

Date Made Active in Reports: 03/05/2019

Number of Days to Update: 60

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Last EDR Contact: 04/02/2019

Next Scheduled EDR Contact: 07/15/2019

Data Release Frequency: Quarterly

#### ML SACRAMENTO: 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: 11/07/2018

Date Data Arrived at EDR: 12/28/2018

Date Made Active in Reports: 03/05/2019

Number of Days to Update: 67

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Last EDR Contact: 04/02/2019

Next Scheduled EDR Contact: 07/15/2019

Data Release Frequency: Quarterly

### SAN BENITO COUNTY:

#### CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 03/11/2019

Date Data Arrived at EDR: 03/13/2019

Date Made Active in Reports: 04/30/2019

Number of Days to Update: 48

Source: San Benito County Environmental Health

Telephone: N/A

Last EDR Contact: 05/02/2019

Next Scheduled EDR Contact: 08/19/2019

Data Release Frequency: Varies

### SAN BERNARDINO COUNTY:

#### PERMITS SAN BERNARDINO: 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: 02/27/2019

Date Data Arrived at EDR: 02/28/2019

Date Made Active in Reports: 04/02/2019

Number of Days to Update: 33

Source: San Bernardino County Fire Department Hazardous Materials Division

Telephone: 909-387-3041

Last EDR Contact: 05/06/2019

Next Scheduled EDR Contact: 08/19/2019

Data Release Frequency: Quarterly

### SAN DIEGO COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/02/2019  
Number of Days to Update: 28

Source: Hazardous Materials Management Division  
Telephone: 619-338-2268  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Quarterly

### LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018  
Date Data Arrived at EDR: 04/24/2018  
Date Made Active in Reports: 06/19/2018  
Number of Days to Update: 56

Source: Department of Health Services  
Telephone: 619-338-2209  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 03/06/2019  
Date Data Arrived at EDR: 03/06/2019  
Date Made Active in Reports: 04/29/2019  
Number of Days to Update: 54

Source: Department of Environmental Health  
Telephone: 858-505-6874  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### SAN DIEGO CO. SAM: 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: 02/27/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: No Update Planned

### SAN FRANCISCO COUNTY:

#### LUST SAN FRANCISCO: Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008  
Date Data Arrived at EDR: 09/19/2008  
Date Made Active in Reports: 09/29/2008  
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County  
Telephone: 415-252-3920  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

#### UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/05/2018  
Date Data Arrived at EDR: 11/06/2018  
Date Made Active in Reports: 12/14/2018  
Number of Days to Update: 38

Source: Department of Public Health  
Telephone: 415-252-3920  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### SAN JOAQUIN COUNTY:

#### UST SAN JOAQUIN: San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018  
Date Data Arrived at EDR: 06/26/2018  
Date Made Active in Reports: 07/11/2018  
Number of Days to Update: 15

Source: Environmental Health Department  
Telephone: N/A  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Semi-Annually

### SAN LUIS OBISPO COUNTY:

#### CUPA SAN LUIS OBISPO: CUPA Facility List Cupa Facility List.

Date of Government Version: 02/13/2019  
Date Data Arrived at EDR: 02/15/2019  
Date Made Active in Reports: 03/14/2019  
Number of Days to Update: 27

Source: San Luis Obispo County Public Health Department  
Telephone: 805-781-5596  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### SAN MATEO COUNTY:

#### BI SAN MATEO: Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/13/2019  
Date Made Active in Reports: 04/29/2019  
Number of Days to Update: 47

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 03/13/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Annually

#### LUST SAN MATEO: Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/13/2018  
Date Data Arrived at EDR: 12/18/2018  
Date Made Active in Reports: 01/23/2019  
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 03/25/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Semi-Annually

### SANTA BARBARA COUNTY:

#### CUPA SANTA BARBARA: 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: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### SANTA CLARA COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA SANTA CLARA: Cupa Facility List Cupa facility list

Date of Government Version: 02/13/2019  
Date Data Arrived at EDR: 02/19/2019  
Date Made Active in Reports: 03/06/2019  
Number of Days to Update: 15

Source: Department of Environmental Health  
Telephone: 408-918-1973  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### HIST LUST SANTA CLARA: 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

### LUST SANTA CLARA: 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: 02/21/2019  
Next Scheduled EDR Contact: 06/10/2019  
Data Release Frequency: Annually

### SAN JOSE HAZMAT: Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 01/30/2019  
Date Data Arrived at EDR: 02/01/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 34

Source: City of San Jose Fire Department  
Telephone: 408-535-7694  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Annually

### SANTA CRUZ COUNTY:

#### CUPA SANTA CRUZ: 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: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### SHASTA COUNTY:

#### CUPA SHASTA: CUPA Facility List Cupa Facility List.

Date of Government Version: 06/15/2017  
Date Data Arrived at EDR: 06/19/2017  
Date Made Active in Reports: 08/09/2017  
Number of Days to Update: 51

Source: Shasta County Department of Resource Management  
Telephone: 530-225-5789  
Last EDR Contact: 02/13/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Varies

### SOLANO COUNTY:



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LUST SOLANO: Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/05/2019

Date Data Arrived at EDR: 03/07/2019

Date Made Active in Reports: 04/29/2019

Number of Days to Update: 53

Source: Solano County Department of Environmental Management

Telephone: 707-784-6770

Last EDR Contact: 02/27/2019

Next Scheduled EDR Contact: 06/17/2019

Data Release Frequency: Quarterly

### UST SOLANO: Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/05/2019

Date Data Arrived at EDR: 03/07/2019

Date Made Active in Reports: 04/03/2019

Number of Days to Update: 27

Source: Solano County Department of Environmental Management

Telephone: 707-784-6770

Last EDR Contact: 02/27/2019

Next Scheduled EDR Contact: 06/17/2019

Data Release Frequency: Quarterly

### SONOMA COUNTY:

#### CUPA SONOMA: Cupa Facility List

Cupa Facility list

Date of Government Version: 03/18/2019

Date Data Arrived at EDR: 03/26/2019

Date Made Active in Reports: 05/01/2019

Number of Days to Update: 36

Source: County of Sonoma Fire & Emergency Services Department

Telephone: 707-565-1174

Last EDR Contact: 03/25/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Varies

### LUST SONOMA: Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/03/2019

Date Data Arrived at EDR: 04/11/2019

Date Made Active in Reports: 04/30/2019

Number of Days to Update: 19

Source: Department of Health Services

Telephone: 707-565-6565

Last EDR Contact: 04/08/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Quarterly

### STANISLAUS COUNTY:

#### CUPA STANISLAUS: CUPA Facility List

Cupa facility list

Date of Government Version: 12/11/2018

Date Data Arrived at EDR: 12/13/2018

Date Made Active in Reports: 01/15/2019

Number of Days to Update: 33

Source: Stanislaus County Department of Environmental Protection

Telephone: 209-525-6751

Last EDR Contact: 04/15/2019

Next Scheduled EDR Contact: 07/29/2019

Data Release Frequency: Varies

### SUTTER COUNTY:

#### UST SUTTER: Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 02/28/2019

Date Data Arrived at EDR: 03/01/2019

Date Made Active in Reports: 04/03/2019

Number of Days to Update: 33

Source: Sutter County Environmental Health Services

Telephone: 530-822-7500

Last EDR Contact: 02/27/2019

Next Scheduled EDR Contact: 06/17/2019

Data Release Frequency: Semi-Annually

### TEHAMA COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CUPA TEHAMA: CUPA Facility List Cupa facilities

Date of Government Version: 12/13/2018  
Date Data Arrived at EDR: 12/18/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 28

Source: Tehama County Department of Environmental Health  
Telephone: 530-527-8020  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### TRINITY COUNTY:

#### CUPA TRINITY: CUPA Facility List Cupa facility list

Date of Government Version: 01/18/2019  
Date Data Arrived at EDR: 01/23/2019  
Date Made Active in Reports: 03/06/2019  
Number of Days to Update: 42

Source: Department of Toxic Substances Control  
Telephone: 760-352-0381  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### TULARE COUNTY:

#### CUPA TULARE: CUPA Facility List Cupa program facilities

Date of Government Version: 12/26/2018  
Date Data Arrived at EDR: 12/27/2018  
Date Made Active in Reports: 01/15/2019  
Number of Days to Update: 19

Source: Tulare County Environmental Health Services Division  
Telephone: 559-624-7400  
Last EDR Contact: 05/06/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### TUOLUMNE COUNTY:

#### CUPA TUOLUMNE: CUPA Facility List Cupa facility list

Date of Government Version: 04/23/2018  
Date Data Arrived at EDR: 04/25/2018  
Date Made Active in Reports: 06/25/2018  
Number of Days to Update: 61

Source: Division of Environmental Health  
Telephone: 209-533-5633  
Last EDR Contact: 05/02/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### VENTURA COUNTY:

#### BWT VENTURA: 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: 12/26/2018  
Date Data Arrived at EDR: 01/24/2019  
Date Made Active in Reports: 02/28/2019  
Number of Days to Update: 35

Source: Ventura County Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

#### LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/29/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Annually

LUST VENTURA: 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: 02/07/2019  
Next Scheduled EDR Contact: 05/27/2019  
Data Release Frequency: Quarterly

MED WASTE VENTURA: 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: 12/26/2018  
Date Data Arrived at EDR: 01/24/2019  
Date Made Active in Reports: 03/07/2019  
Number of Days to Update: 42

Source: Ventura County Resource Management Agency  
Telephone: 805-654-2813  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/26/2019  
Date Data Arrived at EDR: 03/13/2019  
Date Made Active in Reports: 04/03/2019  
Number of Days to Update: 21

Source: Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 03/13/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/26/2018  
Date Data Arrived at EDR: 01/03/2019  
Date Made Active in Reports: 01/16/2019  
Number of Days to Update: 13

Source: Yolo County Department of Health  
Telephone: 530-666-8646  
Last EDR Contact: 03/29/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 02/08/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/06/2019  
Number of Days to Update: 22

Source: Yuba County Environmental Health Department  
Telephone: 530-749-7523  
Last EDR Contact: 04/25/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 02/11/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/04/2019  
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 02/12/2019  
Next Scheduled EDR Contact: 05/27/2019  
Data Release Frequency: No Update Planned

#### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 07/13/2018  
Date Made Active in Reports: 08/01/2018  
Number of Days to Update: 19

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
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: 01/01/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/14/2019  
Number of Days to Update: 15

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

#### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/27/2018  
Number of Days to Update: 35

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Annually

#### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 02/23/2018  
Date Made Active in Reports: 04/09/2018  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 02/19/2019  
Next Scheduled EDR Contact: 06/03/2019  
Data Release Frequency: Annually

#### WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 06/15/2018  
Date Made Active in Reports: 07/09/2018  
Number of Days to Update: 24

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/11/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Annually

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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

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.

**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 and Wildlife

Telephone: 916-445-0411

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map  
Source: U.S. Geological Survey

### STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

NOT REPORTED  
NOT REPORTED  
LOS ALAMITOS, CA 90720

### **TARGET PROPERTY COORDINATES**

Latitude (North):	33.804178 - 33° 48' 15.04"
Longitude (West):	118.042085 - 118° 2' 31.51"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	403541.2
UTM Y (Meters):	3740738.2
Elevation:	32 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	5633745 LOS ALAMITOS, 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 principle 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).

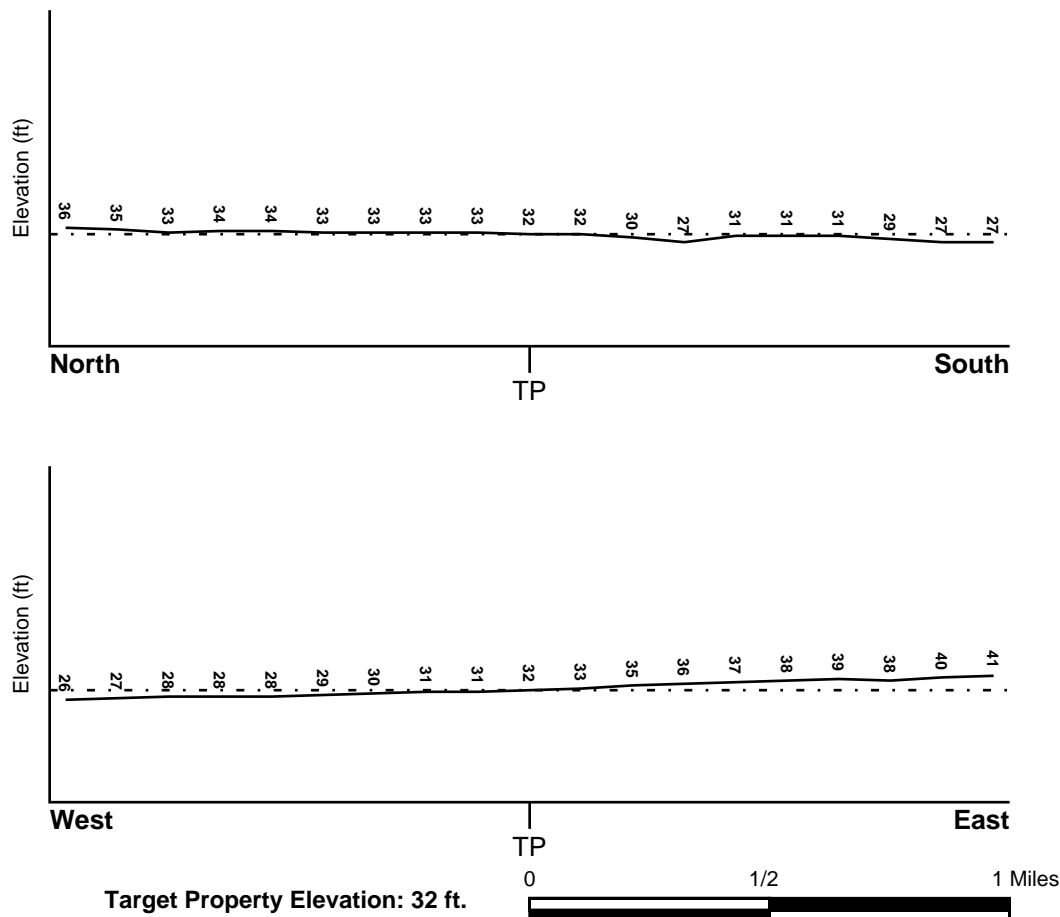
### TOPOGRAPHIC INFORMATION

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 SW

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



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

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
06037C2000F	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
Not Reported	

### NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
LOS ALAMITOS	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
Location Relative to TP:	1/2 - 1 Mile West
Site Name:	FEDERAL MOGUL CORP-ARROWHEAD PRODUCTS
Site EPA ID Number:	CAD008302002
Groundwater Flow Direction:	S TO SW ON A REGIONAL BASIS.
Inferred Depth to Water:	15 to 20 feet in the perched aquifer.
Hydraulic Connection:	The shallow perched aquifer is underlain by the Artesia water table aquifer at a depth of 40 to 100 feet. Lower aquifers are separated by confining layers.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information is inferred in the CERCLIS investigation report(s)

### 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.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
---------------	-------------------------	---

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
1	1/8 - 1/4 Mile ESE	Varies
A6	1/2 - 1 Mile ENE	SW
B8	1/2 - 1 Mile NNW	SW
B9	1/2 - 1 Mile NNW	Varies
B10	1/2 - 1 Mile NNW	SW
11	1/2 - 1 Mile NNE	SSW
1G	1/2 - 1 Mile NNE	SSW
2G	1/2 - 1 Mile NNW	SW
3G	1/2 - 1 Mile NNW	Varies
4G	1/2 - 1 Mile NNW	SW
5G	1/2 - 1 Mile ENE	SW
7G	1/8 - 1/4 Mile ESE	Varies

For additional site information, refer to Physical Setting Source Map Findings.

## **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**

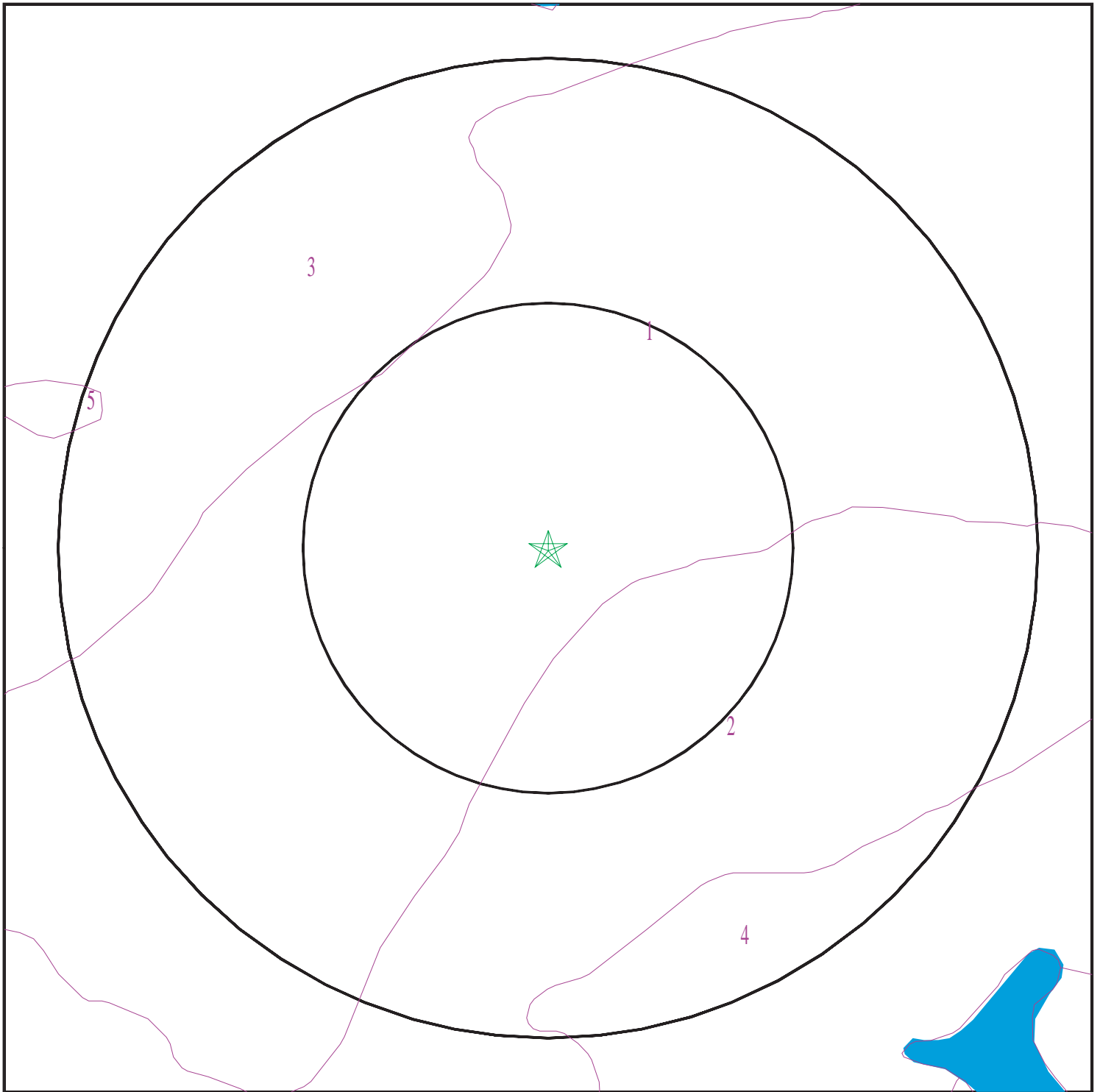
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q (decoded above as Era, System & Series)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified 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 - 5646263.2s



- ★ Target Property
- SSURGO Soil
- Water

0 1/16 1/8 1/4 Miles

SITE NAME: Not Reported  
ADDRESS: Not Reported  
Los Alamitos CA 90720  
LAT/LONG: 33.804178 / 118.042085

CLIENT: Roux Associates  
CONTACT: Angela Truong  
INQUIRY #: 5646263.2s  
DATE: May 08, 2019 4:37 pm

## 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: SAN EMIGDIO

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

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	7 inches	fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.9
2	7 inches	61 inches	stratified gravelly loamy coarse sand to very fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.9

#### Soil Map ID: 2

Soil Component Name: HUENEME

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:

## 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							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	27 inches	fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	27 inches	59 inches	stratified sand to silt loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4

### Soil Map ID: 3

Soil Component Name: BOLSA

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Not reported	Not reported	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	11 inches	68 inches	silty clay loam	Not reported	Not reported	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### Soil Map ID: 4

Soil Component Name: METZ

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively 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							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	16 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
2	16 inches	62 inches	stratified sand to fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

### Soil Map ID: 5

Soil Component Name: Water

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

### 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

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

### FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
C14	USGS40000138297	1/2 - 1 Mile East

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	5247	1/4 - 1/2 Mile NW
3	CADWR8000005622	1/2 - 1 Mile WNW
4	5267	1/2 - 1 Mile WSW
5	5250	1/2 - 1 Mile North
C12	CADWR8000005596	1/2 - 1 Mile East

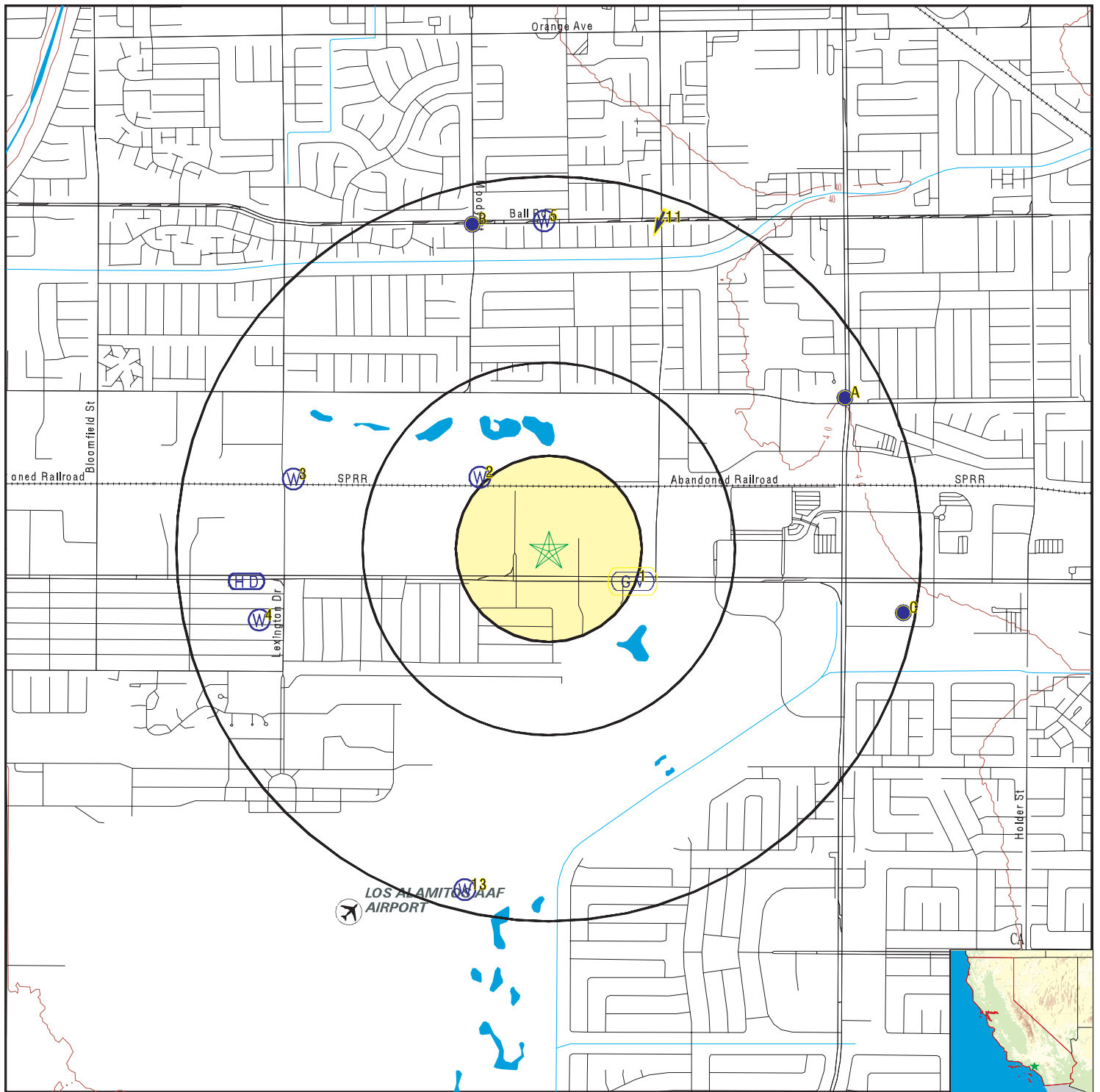


## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
13	CADWR8000005539	1/2 - 1 Mile SSW

# PHYSICAL SETTING SOURCE MAP - 5646263.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- 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: Not Reported  
 ADDRESS: Not Reported  
 Los Alamitos CA 90720  
 LAT/LONG: 33.804178 / 118.042085

CLIENT: Roux Associates  
 CONTACT: Angela Truong  
 INQUIRY #: 5646263.2s  
 DATE: May 08, 2019 4:37 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

<b>1</b> <b>ESE</b> <b>1/8 - 1/4 Mile</b> <b>Higher</b>	Site ID: 083000585T Groundwater Flow: Varies Shallow Water Depth: 4.75 Deep Water Depth: 7.13 Average Water Depth: Not Reported Date: 03/31/1999	<b>AQUIFLOW 68297</b>
--	---	-----------------------

<b>2</b> <b>NW</b> <b>1/4 - 1/2 Mile</b> <b>Higher</b>	<b>CA WELLS 5247</b>
---	----------------------

Seq: 5247	Prim sta c: 04S/11W-20R02 S
Frds no: 3000819001	County: 30
District: 08	User id: TEE
System no: 3000819	Water type: G
Source nam: WELL 01 DOMESTIC WELL	Station ty: WELL/AMBNT/MUN/INTAKE
Latitude: 334825.0	Longitude: 1180240.0
Precision: 3	Status: AU
Comment 1: 4961 KATELLA AVE LOS ALAMITOS	Comment 2: Not Reported
Comment 3: Not Reported	Comment 4: Not Reported
Comment 5: Not Reported	Comment 6: Not Reported
Comment 7: Not Reported	

System no: 3000819	System nam: LOS ALAMITOS RACE COURSE
Hqname: Not Reported	Address: Not Reported
City: Not Reported	State: Not Reported
Zip: Not Reported	Zip ext: Not Reported
Pop serv: 400	Connection: 0
Area serve: Not Reported	

Sample date: 04-JAN-18	Finding: 9.39
Chemical: GROSS ALPHA	Report units: PCI/L
Dir: 3.	

Sample date: 04-JAN-18	Finding: 2.57
Chemical: GROSS ALPHA COUNTING ERROR	Report units: PCI/L
Dir: 0.	

Sample date: 04-JAN-18	Finding: 6.9e-002
Chemical: RADIUM 226 COUNTING ERROR	Report units: PCI/L
Dir: 0.	

Sample date: 04-JAN-18	Finding: 0.4
Chemical: RADIUM 228 MDA95	Report units: PCI/L
Dir: 0.	

Sample date: 04-JAN-18	Finding: 0.697
Chemical: RADIUM 228 COUNTING ERROR	Report units: PCI/L
Dir: 0.	

Sample date: 04-JAN-18	Finding: 5.65
Chemical: URANIUM (PCI/L)	Report units: PCI/L
Dir: 1.	

Sample date: 04-JAN-18	Finding: 1.52
Chemical: URANIUM COUNTING ERROR	Report units: PCI/L
Dir: 0.	

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	04-JAN-18	Finding:	1.28
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	04-JAN-18	Finding:	0.47
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	04-JAN-18	Finding:	0.322
Chemical:	RADIUM 226 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dir:	0.		
Sample date:	05-JAN-15	Finding:	0.1
Chemical:	BROMIDE	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	05-JAN-15	Finding:	173.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	173.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	211.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	61.2
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	14.1
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	34.8
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	2.6
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	26.4
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	63.8
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	05-JAN-15	Finding:	0.51
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.1		
Sample date:	05-JAN-15	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	05-JAN-15	Finding:	142.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	05-JAN-15	Finding:	334.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	05-JAN-15	Finding:	0.7
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		
Sample date:	05-JAN-15	Finding:	541.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	22-OCT-14	Finding:	128.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	01-JUL-14	Finding:	134.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	01-JUL-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Report units:	PCI/L	Dir:	0.
Sample date:	01-JUL-14	Finding:	4.33
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dir:	3.		
Sample date:	01-JUL-14	Finding:	1.74
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	01-JUL-14	Finding:	0.449
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	01-JUL-14	Finding:	3.08
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	01-JUL-14	Finding:	0.949
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	01-JUL-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	01-JUL-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	01-JUL-14	Finding:	0.253
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	01-JUL-14	Finding:	0.451
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Report units:	PCI/L	Dir:	0.
Sample date:	01-JUL-14	Finding:	0.354
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dir:	0.		
Sample date:	03-APR-14	Finding:	194.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	16-JAN-14	Finding:	146.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	09-OCT-13	Finding:	201.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	02-JUL-13	Finding:	152.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	11-APR-13	Finding:	558.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	11-APR-13	Finding:	3.8
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	21-JAN-13	Finding:	221.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	04-OCT-12	Finding:	222.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	02-JUL-12	Finding:	155.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	30-APR-12	Finding:	155.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	03-JAN-12	Finding:	175.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	198.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	56.2
Chemical:	CALCIUM	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	03-JAN-12	Finding:	13.9
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	34.4
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	25.9
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	61.1
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	03-JAN-12	Finding:	0.53
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	03-JAN-12	Finding:	4.4
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	03-JAN-12	Finding:	215.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	03-JAN-12	Finding:	325.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	0.7
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		
Sample date:	03-JAN-12	Finding:	175.
Chemical:	ALKALINITY (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	03-JAN-12	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	03-JAN-12	Finding:	4.
Chemical:	COLOR	Report units:	UNITS
Dir:	0.		
Sample date:	03-JAN-12	Finding:	542.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

**3**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**CA WELLS      CADWR8000005622**

State Well #:	04S11W20K002S	Station ID:	6111
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Coastal Plain Of Orange County		
Well Completion Rpt #:	Not Reported		

**4**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**CA WELLS      5267**

Seq:	5267	Prim sta c:	04S/11W-29C01 S
Frds no:	3010022007	County:	30
District:	08	User id:	TEE
System no:	3010022	Water type:	G
Source nam:	HOWARD	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	334805.8	Longitude:	1180317.6
Precision:	2	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3010022	System nam:	Southern Calif WC - West Orange
Hqname:	SOUTHERN CALIF WATER CO	Address:	1920 W. CORPORATE WAY
City:	ANAHEIM	State:	CA
Zip:	92801	Zip ext:	Not Reported
Pop serv:	84737	Connection:	25347
Area serve:	LOS ALAMITOS		

Sample date:	04-APR-16	Finding:	0.25
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dir:	0.		

Sample date:	17-MAR-16	Finding:	2.
Chemical:	ODOR THRESHOLD @ 60 C	Report units:	TON
Dir:	1.		

Sample date:	17-MAR-16	Finding:	469.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		

Sample date:	17-MAR-16	Finding:	7.5
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		

Sample date:	17-MAR-16	Finding:	176.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		

Sample date:	17-MAR-16	Finding:	215.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	17-MAR-16	Finding:	176.
Chemical:	HARDNESS (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	51.3
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	11.6
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	33.3
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	16.1
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	42.5
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	17-MAR-16	Finding:	0.59
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	17-MAR-16	Finding:	3.8
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	17-MAR-16	Finding:	139.
Chemical:	IRON	Report units:	UG/L
Dir:	100.		
Sample date:	17-MAR-16	Finding:	282.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	17-MAR-16	Finding:	0.3
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		
Sample date:	07-DEC-15	Finding:	0.2
Chemical:	AMMONIA (NH <sub>3</sub> -N)	Report units:	MG/L
Dir:	0.		
Sample date:	02-NOV-15	Finding:	0.2
Chemical:	AMMONIA (NH <sub>3</sub> -N)	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-15	Finding:	45.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-15	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	12-FEB-15	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-15	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	12-FEB-15	Finding:	7.95
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	02-MAY-14	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	02-MAY-14	Finding:	47.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	02-MAY-14	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	02-MAY-14	Finding:	7.93
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	02-MAY-14	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	3.93
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dir:	3.		
Sample date:	19-MAR-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	19-MAR-14	Finding:	0.138
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	9.4e-002
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0	Dir:	0.
Report units:	PCI/L		
Sample date:	19-MAR-14	Finding:	0.2
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dir:	0.		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	19-MAR-14	Finding:	1.14
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	3.46
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dir:	1.		
Sample date:	19-MAR-14	Finding:	0.52
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	19-MAR-14	Finding:	1.62
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	178.
Chemical:	ALKALINITY (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	462.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	13-MAR-13	Finding:	3.
Chemical:	COLOR	Report units:	UNITS
Dir:	0.		
Sample date:	13-MAR-13	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	13-MAR-13	Finding:	31.6
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	15.5
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	41.7
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	13-MAR-13	Finding:	165.
Chemical:	HARDNESS (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	178.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	48.1
Chemical:	CALCIUM	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	13-MAR-13	Finding:	0.2
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		
Sample date:	13-MAR-13	Finding:	274.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	13-MAR-13	Finding:	4.5
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	13-MAR-13	Finding:	0.54
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	09-JAN-13	Finding:	8.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	09-JAN-13	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	09-JAN-13	Finding:	46.
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	09-JAN-13	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	09-JAN-13	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		

### 5 North 1/2 - 1 Mile Higher

**CA WELLS    5250**

Seq:	5250	Prim sta c:	04S/11W-22D01 S
Frds no:	3010003017	County:	30
District:	08	User id:	TEE
System no:	3010003	Water type:	G
Source nam:	BALL WELL	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	334901.3	Longitude:	1180229.3
Precision:	2	Status:	AU
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3010003	System nam:	City of Buena Park
Hqname:	Not Reported	Address:	6650 BEACH BLVD
City:	BUENA PARK	State:	CA
Zip:	90620	Zip ext:	Not Reported
Pop serv:	72550	Connection:	18211
Area serve:	BUENA PARK		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	11-OCT-17	Finding:	27.3
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	13-JUL-17	Finding:	37.9
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	13-JUL-17	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-APR-17	Finding:	390.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	1.09
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	06-APR-17	Finding:	625.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	06-APR-17	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	06-APR-17	Finding:	177.
Chemical:	ALKALINITY (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	216.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	1.09
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	06-APR-17	Finding:	247.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	76.7
Chemical:	CALCIUM	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	13.5
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	38.8
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	2.9
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	06-APR-17	Finding:	35.5
Chemical:	CHLORIDE	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	06-APR-17	Finding:	78.5
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	06-APR-17	Finding:	0.45
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-APR-17	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	06-APR-17	Finding:	40.7
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	25-JAN-17	Finding:	64.8
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	22-NOV-16	Finding:	59.7
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	21-JUL-16	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	19-JUL-16	Finding:	62.8
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	29-JUN-16	Finding:	71.4
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	29-JUN-16	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	29-JUN-16	Finding:	68.
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	27-APR-16	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	26-APR-16	Finding:	0.59
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	26-APR-16	Finding:	70.
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	26-APR-16	Finding:	0.61
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	27-JAN-16	Finding:	58.9
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	21-OCT-15	Finding:	62.1
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	07-OCT-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	23-JUL-15	Finding:	60.
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	23-JUL-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	01-JUL-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	03-JUN-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-MAY-15	Finding:	0.51
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	15-APR-15	Finding:	4.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	15-APR-15	Finding:	46.7
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	15-APR-15	Finding:	1030.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	03-APR-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	04-FEB-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	21-JAN-15	Finding:	46.3
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	07-JAN-15	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	29-OCT-14	Finding:	56.7
Chemical:	MANGANESE	Report units:	UG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	20.		
Sample date:	01-OCT-14	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	08-AUG-14	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	30-JUL-14	Finding:	49.8
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	05-JUN-14	Finding:	55.
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	05-JUN-14	Finding:	56.6
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	05-JUN-14	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	22-APR-14	Finding:	9.9
Chemical:	MAGNESIUM	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	37.
Chemical:	SODIUM	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	2.5
Chemical:	POTASSIUM	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	24.5
Chemical:	CHLORIDE	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	59.6
Chemical:	SULFATE	Report units:	MG/L
Dir:	0.5		
Sample date:	22-APR-14	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	22-APR-14	Finding:	4.8
Chemical:	ARSENIC	Report units:	UG/L
Dir:	2.		
Sample date:	22-APR-14	Finding:	64.2
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	22-APR-14	Finding:	318.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dir:	0.		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	22-APR-14	Finding:	2.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	22-APR-14	Finding:	0.11
Chemical:	BROMIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	570.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	22-APR-14	Finding:	3.12
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	22-APR-14	Finding:	1.41
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.437
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	1.04
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dlr:	1.		
Sample date:	22-APR-14	Finding:	0.559
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.2
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.368
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	22-APR-14	Finding:	0.306
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.47
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	22-APR-14	Finding:	65.3
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	204.
Chemical:	HARDNESS (TOTAL) AS CaCO3	Report units:	MG/L

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dir:	0.		
Sample date:	22-APR-14	Finding:	216.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	177.
Chemical:	ALKALINITY (TOTAL) AS CaCO <sub>3</sub>	Report units:	MG/L
Dir:	0.		
Sample date:	22-APR-14	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dir:	0.		
Sample date:	22-APR-14	Finding:	546.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dir:	0.		
Sample date:	22-APR-14	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dir:	0.		
Sample date:	22-APR-14	Finding:	0.2
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dir:	0.1		
Sample date:	02-APR-14	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-FEB-14	Finding:	0.45
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	04-DEC-13	Finding:	70.
Chemical:	MANGANESE	Report units:	UG/L
Dir:	20.		
Sample date:	04-DEC-13	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-NOV-13	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	11-SEP-13	Finding:	0.55
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	01-AUG-13	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	28-JUN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	24-APR-13	Finding:	3.2
Chemical:	NITRATE (AS NO <sub>3</sub> )	Report units:	MG/L
Dir:	2.		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample date:	24-APR-13	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	24-APR-13	Finding:	730.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	10-APR-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	06-MAR-13	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	30-JAN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	08-JAN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	05-DEC-12	Finding:	0.58
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	30-MAY-12	Finding:	0.6
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	02-MAY-12	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	02-MAY-12	Finding:	910.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dir:	0.4		
Sample date:	02-MAY-12	Finding:	4.02
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dir:	2.		
Sample date:	04-APR-12	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	29-FEB-12	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	08-FEB-12	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		
Sample date:	04-JAN-12	Finding:	0.65
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dir:	0.1		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

<b>A6</b> <b>ENE</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083002920T		<b>AQUIFLOW</b>	<b>68233</b>
	Groundwater Flow: SW			
	Shallow Water Depth: 5			
	Deep Water Depth: 8			
	Average Water Depth: Not Reported			
	Date: 07/26/1995			

<b>A7</b> <b>ENE</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083000718T		<b>AQUIFLOW</b>	<b>66460</b>
	Groundwater Flow: Not Reported			
	Shallow Water Depth: Not Reported			
	Deep Water Depth: Not Reported			
	Average Water Depth: 7.75			
	Date: 08/26/1992			

<b>B8</b> <b>NNW</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083002183T		<b>AQUIFLOW</b>	<b>68190</b>
	Groundwater Flow: SW			
	Shallow Water Depth: 3.12			
	Deep Water Depth: 6.92			
	Average Water Depth: Not Reported			
	Date: 10/15/1997			

<b>B9</b> <b>NNW</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083001957T		<b>AQUIFLOW</b>	<b>68214</b>
	Groundwater Flow: Varies			
	Shallow Water Depth: Not Reported			
	Deep Water Depth: Not Reported			
	Average Water Depth: 10			
	Date: 09/04/1992			

<b>B10</b> <b>NNW</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083002183T		<b>AQUIFLOW</b>	<b>68189</b>
	Groundwater Flow: SW			
	Shallow Water Depth: 3.12			
	Deep Water Depth: 6.92			
	Average Water Depth: Not Reported			
	Date: 10/15/1997			

<b>11</b> <b>NNE</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	Site ID: 083001501T		<b>AQUIFLOW</b>	<b>38612</b>
	Groundwater Flow: SSW			
	Shallow Water Depth: Not Reported			
	Deep Water Depth: Not Reported			
	Average Water Depth: 8			
	Date: 02/10/1992			

<b>C12</b> <b>East</b> <b>1/2 - 1 Mile</b> <b>Higher</b>			<b>CA WELLS</b>	<b>CADWR8000005596</b>
---	--	--	-----------------	------------------------

State Well #:	04S11W27D001S
Well Name:	Not Reported
Well Type:	Unknown
Basin Name:	Coastal Plain Of Orange County
Well Completion Rpt #:	Not Reported

Station ID:	28324
Well Use:	Unknown
Well Depth:	0

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

**13**  
**SSW**  
**1/2 - 1 Mile**  
**Lower**

**CA WELLS CADWR8000005539**

State Well #:	04S11W28N001S	Station ID:	39310
Well Name:	Not Reported	Well Use:	Unknown
Well Type:	Unknown	Well Depth:	0
Basin Name:	Coastal Plain Of Orange County		
Well Completion Rpt #:	Not Reported		

**C14**  
**East**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS USGS40000138297**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	004S011W27D001S	Type:	Well
Description:	Not Reported	HUC:	18070201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	900
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	85	Level reading date:	1986-09-02
Feet below surface:	65.33	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1986-05-06	Feet below surface:	52.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-02-20	Feet below surface:	46.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-11-05	Feet below surface:	59.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-08-17	Feet below surface:	61.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-05-07	Feet below surface:	46.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-04-15	Feet below surface:	38.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-02-14	Feet below surface:	34.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-11-01	Feet below surface:	57.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-10-09	Feet below surface:	56.71

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-09-06	Feet below surface:	61.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-08-07	Feet below surface:	60.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-07-03	Feet below surface:	56.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-06-04	Feet below surface:	51.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-05-07	Feet below surface:	36.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-04-02	Feet below surface:	33.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-03-07	Feet below surface:	30.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-02-16	Feet below surface:	27.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-11-03	Feet below surface:	46.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-10-13	Feet below surface:	48.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-09-01	Feet below surface:	58.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-08-02	Feet below surface:	57.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-07-05	Feet below surface:	55.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-06-09	Feet below surface:	50.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-05-12	Feet below surface:	42.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-05-03	Feet below surface:	41.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-02-10	Feet below surface:	41.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-11-04	Feet below surface:	56.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-07-28	Feet below surface:	59.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-04-29	Feet below surface:	45.30
Feet to sea level:	Not Reported	Note:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1982-01-29	Feet below surface:	38.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-11-03	Feet below surface:	53.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-07-28	Feet below surface:	57.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-05-07	Feet below surface:	41.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-02-05	Feet below surface:	40.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-10-28	Feet below surface:	53.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-08-26	Feet below surface:	54.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-06-10	Feet below surface:	48.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-02-07	Feet below surface:	46.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-11-15	Feet below surface:	54.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-08-01	Feet below surface:	49.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-05-02	Feet below surface:	48.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-02-05	Feet below surface:	47.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-11-03	Feet below surface:	60.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-09-25	Feet below surface:	62.41
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-13	Feet below surface:	60.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-28	Feet below surface:	65.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-05	Feet below surface:	62.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-09	Feet below surface:	51.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-06	Feet below surface:	58.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-31	Feet below surface:	66.10
Feet to sea level:	Not Reported	Note:	Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1975-08-29	Feet below surface:	65.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-26	Feet below surface:	65.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-18	Feet below surface:	46.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-03	Feet below surface:	50.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-30	Feet below surface:	57.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-29	Feet below surface:	75.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-02	Feet below surface:	62.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-30	Feet below surface:	47.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-18	Feet below surface:	50.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-23	Feet below surface:	47.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-31	Feet below surface:	60.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-06	Feet below surface:	61.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-03	Feet below surface:	61.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-09	Feet below surface:	47.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-01	Feet below surface:	48.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-04	Feet below surface:	48.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-31	Feet below surface:	54.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-11	Feet below surface:	58.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-29	Feet below surface:	54.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-28	Feet below surface:	45.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-28	Feet below surface:	40.50
Feet to sea level:	Not Reported	Note:	Not Reported



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Level reading date:	1971-11-01	Feet below surface:	43.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-30	Feet below surface:	43.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-07	Feet below surface:	41.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-07	Feet below surface:	42.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-29	Feet below surface:	36.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-12	Feet below surface:	36.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-02	Feet below surface:	31.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-09	Feet below surface:	43.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-29	Feet below surface:	44.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-01	Feet below surface:	43.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-29	Feet below surface:	41.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-29	Feet below surface:	35.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-28	Feet below surface:	27.70
Feet to sea level:	Not Reported	Note:	Not Reported

**1G  
NNE  
1/2 - 1 Mile  
Lower**

Site ID:	083001501T
Groundwater Flow:	SSW
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	8
Date:	02/10/1992

**AQUIFLOW 38612**

**2G  
NNW  
1/2 - 1 Mile  
Lower**

Site ID:	083002183T
Groundwater Flow:	SW
Shallow Water Depth:	3.12
Deep Water Depth:	6.92
Average Water Depth:	Not Reported
Date:	10/15/1997

**AQUIFLOW 68190**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

<b>3G</b> <b>NNW</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083001957T Varies Not Reported Not Reported 10 09/04/1992	<b>AQUIFLOW</b>	<b>68214</b>
--	---	--	-----------------	--------------

<b>4G</b> <b>NNW</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083002183T SW 3.12 6.92 Not Reported 10/15/1997	<b>AQUIFLOW</b>	<b>68189</b>
--	---	--	-----------------	--------------

<b>5G</b> <b>ENE</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083002920T SW 5 8 Not Reported 07/26/1995	<b>AQUIFLOW</b>	<b>68233</b>
--	---	--	-----------------	--------------

<b>6G</b> <b>ENE</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083000718T Not Reported Not Reported Not Reported 7.75 08/26/1992	<b>AQUIFLOW</b>	<b>66460</b>
--	---	--	-----------------	--------------

<b>7G</b> <b>ESE</b> <b>1/8 - 1/4 Mile</b> <b>Lower</b>	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083000585T Varies 4.75 7.13 Not Reported 03/31/1999	<b>AQUIFLOW</b>	<b>68297</b>
--	---	--	-----------------	--------------

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: CA Radon

### Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
90720	34	0

Federal EPA Radon Zone for ORANGE 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 ORANGE COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.763 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 and Wildlife

Telephone: 916-445-0411

## **HYDROGEOLOGIC INFORMATION**

### AQUIFLOW<sup>R</sup> 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.

#### California Earthquake Fault Lines

Source: California Division of Mines and Geology

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.

### RADON

#### State Database: CA Radon

Source: Department of Public Health

Telephone: 916-210-8558

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.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### 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.

### 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

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

## Previous Phase I ESA



DCI Environmental Services

---

# **PHASE I ENVIRONMENTAL SITE ASSESSMENT**

for

## **Commercial Property**

*APN's #241-091-22, 23, 24, 25 & 26*

*Cypress, CA. 90630*

Prepared For:

**Walter K. Bowman Real Estate**

**9922 Walker Street, Suite A**

**Cypress, Ca. 90630**

**August 10<sup>th</sup>, 2006**

**DCI Project No.: 23528**



## **TABLE OF CONTENTS**

1. Executive Summary
2. Introduction
  - 2.1. Purpose
  - 2.2. Detailed Scope of Services
  - 2.3. Significant Assumptions
  - 2.4. Limitations and Exceptions
  - 2.5. Special Terms and Conditions
  - 2.6. User Reliance
3. Site Description
  - 3.1. Location and Legal Description
  - 3.2. Site and Vicinity Characteristics
  - 3.3. Current Use of Property
  - 3.4. Descriptions of Structures, Roads, Other Improvements on the Site
  - 3.5. Current Uses of Adjoining Properties
4. User Provided Information
  - 4.1. Title Records
  - 4.2. Environmental Liens or Activity and Use Limitations
  - 4.3. Specialized Knowledge
  - 4.4. Valuation Reduction for Environmental Issues
  - 4.5. Owner, Property Manager, and Occupant Information
  - 4.6. Reason for Performing Phase I
  - 4.7. Other
5. Records Review
  - 5.1. Standard Environmental Record Sources
  - 5.2. Additional Environmental Record Sources
  - 5.3. Physical Setting Sources
  - 5.4. Historical Use Information on the Property and Adjoining Properties
6. Site Reconnaissance
  - 6.1. Methodology and Limiting Conditions
  - 6.2. General Site Setting
  - 6.3. Exterior Observations
  - 6.4. Interior Observations
7. Interviews
  - 7.1. Interview with Site Representative
  - 7.2. Interview with Site Manager
  - 7.3. Interviews with Occupants

7.4. Interviews with Local Government Officials

7.5. Interviews with Others

8. Findings and Opinions

9. Conclusions

10. Deviations

11. Additional Services

12. References

13. Signature(s) of Environmental Professional(s)

14. Qualification(s) of Environmental Professional(s)

Appendices

A. Site Vicinity Map

B. Site Permits

C. Site Photographs

D. Historical Research Documentation

E. Regulatory Records Documentation

F. Environmental Contractors Certification

## 1. Executive Summary

Walter K. Bowman Real Estate retained DCI Services to perform a Phase I Environmental Site Assessment on the Subject Property, located at APN's #241-091-22, 23, 24, 25 & 26 (northwest corner Katella Avenue and Winners Circle), in Cypress, California.

The purpose of this due diligence investigation was to assess the Subject Property for evidence of hazardous waste contamination and the possibility of underground storage tanks, in an effort to minimize the exposure of the Subject Property owner to liability pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), known generally as the "Innocent Landowner Defense". A rigorous records review and environmental database survey of the Subject Property and surrounding properties were performed. In addition, a site reconnaissance survey was conducted on July 28<sup>th</sup>, 2006.

Based on prior site usage, interviews with persons having knowledge of the Subject Property, review of available records, and a physical site inspection, it does not appear that the Subject Property, located at APN's #241-091-22, 23, 24, 25 & 26, in Cypress, California, is adversely impaired by hazardous substances or underground storage tanks. The Subject Property is used as a parking lot with no history of any building improvements. There are no hazardous substances present that pose a threat to the environmental integrity of the Subject Property. Any incidental spills or leaks from vehicles parked onsite should diminish with time through natural attenuation processes. Properties under remediation for soil and/or groundwater contamination in the vicinity of the site appear unlikely to impact the Subject Property. DCI Services has no recommendations for further environmental investigations of the Subject Property at this time.

## **2. Introduction**

Walter K. Bowman Real Estate retained DCI Environmental Services to perform a Phase I Environmental Site Assessment (ESA) at the Subject Property located at APN's #241-091-22, 23, 24, 25 & 26, in Cypress, California.

### **2.1. Purpose**

The purpose of this environmental site assessment was intended to identify, to the extent feasible pursuant to the processes prescribed by ASTM E 1527-00, "recognized environmental conditions" in connection with the Subject Property. Recognized environmental conditions include, but are not limited to, the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. This investigation was performed in an effort to minimize the exposure of the Subject Property owner to liability pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and should constitute "appropriate inquiry" for purposes of CERCLA "innocent landowner defense" as defined in 42 USC § 9601 *et seq.*

### **2.2. Detailed Scope of Services**

DCI Environmental Services will attempt to obtain all reasonably ascertainable information related to the Subject Property that may help identify recognized environmental conditions in connection with the property. As per ASTM E 1527-00, a Phase I ESA includes four components. The first component of the Phase I is a records review, which typically includes the standard Federal and State environmental record sources, additional Regional and Local environmental record sources, physical setting sources, and historical use information.

The second component is the site reconnaissance, which may include, but is not limited to observations of current and past uses of the Subject Property and adjoining properties, visible hydrogeologic and topographic conditions, structures, roads, and water systems. The site reconnaissance attempts to make observations regarding the presence of hazardous substances and petroleum products, storage tanks, polychlorinated biphenols (PCB's), and other potentially hazardous substances or materially threatening practices.

The third component of the Phase I ESA comprises interviews with the Subject Property's owner, key management personnel, commercial occupants, and relevant government officials. The fourth component is a report summarizing the findings of the records review, site reconnaissance, and interviews, and presenting a professional opinion regarding the existence of any recognized environmental conditions in connection with the Subject Property.

### **2.3. Significant Assumptions**

The only significant assumptions made during this investigation were that the information DCI obtained from outside sources (environmental and historical records) was accurate and up-to-date at the time this report was prepared, and that no information was withheld from DCI by any persons with actual knowledge of recognized environmental conditions associated with the Subject Property.

### **2.4. Limitations and Exceptions**

This environmental site assessment report was prepared in accordance with ASTM E 1527-00, and generally accepted practices and principles. The ASTM E 1527-00 standard states, that no environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of a Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, while recognizing the limits of time and cost. No sampling or analysis of soil, water, building materials, or air is conducted as part of this assessment. This study is not intended to be a definitive investigation of recognized environmental conditions at the Subject Property and is not inclusive of all possibilities. Opinions expressed herein reflect conditions existing at the time of our investigation, and may change at any time.

### **2.5. Special Terms and Conditions**

In accordance with ASTM E 1527-00, this report is considered to be valid up to 180 calendar days from the date it was finished. Any use of this report after such time is not recommended by DCI and is not in accordance with the appropriate standards and practices. All information in this report is considered to be privileged and confidential. DCI shall release the report only to the client. DCI shall not release the report, or make disclosures or notifications to any others, including government agencies, unless so authorized by the client in writing. DCI does not authorize the use of the report or portions thereof by any third party.

### **2.6. User Reliance**

The opinions expressed in this report are based on all reasonable ascertainable information obtained through a rigorous records review, site reconnaissance, and personal interviews. Although DCI believes that the information contained herein is reliable, no guarantee can be made as to the accuracy of information provided to DCI by others.

### **3. Site Description**

#### **3.1. Site Location and Legal Description**

The Subject Property, located at APN's #241-091-22, 23, 24, 25 & 26, in Cypress, California, is on the northwest corner of Katella Avenue and Winners Circle. The Subject Property can be located on Thomas Brothers Map (Orange County) page 769, grid J-1. A Site Location Map is included in Appendix A.

#### **3.1. Site Vicinity and Characteristics**

The overall character of the surrounding neighborhood is a mixture of commercial and residential developments. Commercial buildings surround the Subject Property (see Site Location Map - Appendix A).

#### **3.2. Current Use of Property**

The Subject Property has no building improvements or other permanent structures. The site is used as a parking lot for the adjacent quarter horse racetrack (Los Alamitos Racetrack). The racetrack business has occupied the site since the 1960's.

#### **3.3. Descriptions of Structures, Roads, Other Improvements on the Site**

The exterior lot is improved with asphalt pavement, decorative landscaping, and cement sidewalks. Overhead lighting illuminates the lot and two below grade drains direct surface water flows onto Katella Avenue. No aboveground or underground storage tanks, clarifiers, or other substantial sources of hazardous wastes are located on-site. Also, no spills, heavy staining, or illegal dumping of hazardous materials were present. All municipal services — including sewer, water, telephone, gas, and electric are available. Site photographs are included in Appendix C.

#### **3.4. Current Uses of Adjoining Properties**

The sites directly adjacent to the Subject Property are described below:

North: A parking lot and horse racetrack (Los Alamitos Racetrack) located at 4961 Katella Avenue.

South: Across Katella Avenue are commercial offices located at 5212 Katella Avenue.

East: Across Winners Circle is a wholesale discount store (Costco).

West: A driveway for the adjacent racetrack (Los Alamitos Racetrack).

#### **4. User Provided Information**

The user provided the following information to DCI Environmental Services regarding the Subject Property.

##### **4.1. Title Records**

Title record documents were not provided for review by DCI from the user. These records would most likely indicate that the Subject Property was developed from vacant land subdivided from a larger agricultural parcel prior to completion of the parking lot in the late 1960's.

##### **4.2. Environmental Liens or Activity and Use Limitations**

No information regarding environmental liens on the Subject Property was provided to DCI. Further, there are no known activity or use limitations in connection with the property.

##### **4.3. Specialized Knowledge**

According to ASTM E 1527-00, if the user is aware of any specialized knowledge or experience that is material to recognized environmental conditions in connection with the Subject Property, it is the user's responsibility to communicate any information based on such specialized knowledge or experience to DCI prior to the site reconnaissance. The user has not communicated any specialized knowledge to DCI.

##### **4.4. Valuation Reduction for Environmental Issues**

In a transaction involving the purchase of a parcel of real estate, if a user has actual knowledge that the purchase price of the property is significantly less than the purchase price of comparable properties, the user should attempt to identify an explanation for the lower price and to make a written record of such explanation. If the information in this report concludes that there are recognized environmental conditions connected to the Subject Property, such information may be used to explain a valuation reduction of the property.

##### **4.5. Owner, Property Manager, and Occupant Information**

The manager of the Subject Property was identified to DCI Services as Mr. Frank Sherren. DCI Services contacted Mr. Sherren who provided the following information regarding the Subject Property:

- 1) Mr. Sherren indicated that there is no history of hazardous materials use, underground storage tanks, industrial wastewater discharges, or other substantial sources of hazardous wastes located at the Subject Property. Also, there are no regulated air-emissions or hazardous wastes on the Subject Property.

#### **4.6. Reason for Performing Phase I ESA**

It is assumed that the reason this Phase I Environmental Site Assessment was requested in order to qualify for the "innocent landowner defense" to CERCLA liability associated with a commercial real estate transaction. Another reason for performing a Phase I ESA might include the need to understand potential environmental conditions that could materially impact the operation of a business associated with the Subject Property.

### **5. Records Review**

#### **5.1. Standard Environmental Record Sources**

DCI Environmental Services obtained a report containing (at a minimum) all federal and state environmental databases required by ASTM E 1527-00 to determine any potential recognized environmental conditions connected to the Subject Property from onsite or in the vicinity of the Subject Property. The environmental databases are included in the Environmental Records Search (ERS) in Appendix E.

Several of the databases included in the ERS report contain information not relevant to this investigation, have duplicate information, or contain no sites within a one-mile radius of the Subject Property. Lists of concern are discussed below within their respective minimum search distances defined in ASTM E 1527-00 § 7.2.1.1.

##### ***5.1.1. Federal Environmental Record Sources***

###### **Federal NPL (within 1.0 miles)**

The United States Environmental Protection Agency (US EPA) has compiled this list from the designated CERCLIS list. The National Priority List (NPL) sites are prioritized as to their significant risk to human health and the environment. The list targets those sites to receive remedial funding under the Comprehensive Environmental Response Conservation and Liability Act (CERCLA). The NPL lists the nation's highest priority sites for remedial action. Only NPL sites can receive CERCLA funding. As of March 2006, the Subject Property and adjacent properties were not on the NPL list. There was no NPL site listing located within a one-mile radius of the Subject Property.



### **Federal CERCLIS (within 1.0 miles)**

The EPA has compiled this list of contaminated properties for designation under the Federal Superfund Program pursuant to the Comprehensive Environmental Response Conservation and Liability Act (CERCLA). These sites represent environmental concern for the discharge of hazardous materials by hazardous waste generators, treatment and storage facilities, and hazardous waste disposal sites. As of March 2006, the Subject Property and adjacent properties were not on the CERCLIS list. There was no CERCLIS site listing located within a one-mile radius of the Subject Property.

### **Federal CERCLIS NFRAP (property and adjoining properties)**

As of February 1995, CERCLIS sites designated 'No Further Remedial Action Planned' NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed these NFRAP sites from CERCLIS to lift unintended barriers to the redevelopment of these properties. As of March 2006, the Subject Property and adjacent properties were not on the NFRAP list.

### **Federal RCRA CORRACTS (within 1.0 mile)**

The Resource Conservation and Recovery Act of 1976 provides for "cradle to grave" regulation of hazardous wastes. RCRA requires regulation of hazardous waste generators, transporters, and storage/treatment/disposal sites. Evaluations of potential violations ranging from manifest requirements to hazardous waste discharges are typically conducted by the US EPA. This database is also known as Corrective Action Report (CORRACTS). If enforcement action is required it is typically delegated to a State Agency. As of March 2006, the Subject Property and adjacent properties were not on the CORRACTS list. There was no CORRACTS site listing located within a one-mile radius of the Subject Property.

### **Federal RCRA-D non-CORRACTS TSD (within 1.0 miles)**

The Environmental Protection Agency regulates the treatment, storage and disposal of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste TSD facilities are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form as well as part A (EPA form 8700-23) and Part B of their Hazardous Waste Permit Application. As of March 2006, the Subject Property and adjacent properties were not on the RCRA-D list. There was no RCRA-D site listing located within a one-mile radius of the Subject Property.

### **Federal RCRA-G Generators (within 0.25 miles)**

The Environmental Protection Agency regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. The notification form provides basic identification information and specific waste activities. As of March 2006, the Subject Property was not on the RCRA-G list. There are six RCRA-G site listings located within a one-quarter mile radius of the Subject Property. The nearest RCRA-G site listing is at Los Alamitos Race Track (4961 Katella Ave.), adjacent to the north side of the Subject Property. Based on observations of the Subject Property, it is unlikely that any RCRA-G site listing has impacted the environmental integrity of the Subject Property.

### **Federal ERNS (within 0.25 miles)**

The Emergency Response Notification System (ERNS) list is a database of reported releases of oil or other hazardous materials. As of 2005, the Subject Property and adjacent properties were not on the ERNS list. There was no ERNS site listing located within a one-quarter mile radius of the Subject Property.

## ***5.1.2. State Environmental Record Sources***

### **California Annual Work Plan (within 1.0 miles)**

The California Health and Safety code, as amended by AB 129, requires the California Environmental Protection Agency to develop a site-specific expenditure plan as the basis for an appropriation of California Hazardous Substance Cleanup Bond Act of 1984 funds. The Agency is also required to update the report annually and report any significant adjustments to the Legislature on an ongoing basis. The plan identifies California hazardous waste sites targeted for cleanup by responsible parties, the California and the Federal Environmental Protection Agency over the next five years. As of January 2006, the Subject Property and adjacent properties were not on the AWP list. There is no AWP site listing located within a one-mile radius of the Subject Property.

### **California CALSITES (within 1.0 miles)**

The State of California CALSITES list combines the former Abandoned Site Program Information System (ASPIS) and the Bond Expenditure Plan databases. CALSITES is the state equivalent to the CERCLIS list and is a compilation of known potential hazardous waste sites. As of January 2006, the Subject Property and adjacent properties were not on the CALSITES list. There was no CALSITE listing located within a one-mile radius of the Subject Property.

### **California SWIS (within 1.0 miles)**

The California Waste Management Board maintains this list pursuant to the Solid Waste Management and Resource Recovery Act of 1972. The list contains the most current inventory of active, inactive, and closed solid waste disposal and transfer facilities. As of January 2006, the Subject Property and adjacent properties were not on the SWIS list. There is one SWIS site listing within a one-mile radius of the Subject Property. However, there is no SWIS site listing within one-half mile of the Subject Property. Considering the current status and distance from the Subject Property, it is unlikely that any SWIS site listing has impacted the environmental integrity of the Subject Property.

### **California LUST (within 0.5 miles)**

The California Water Resources Control Board's Leaking Underground Storage Tank (LUST) database identifies properties with possible environmental hazards. According to the State of California's WRCB LUST list, as of February 2006, the Subject Property and adjacent properties were not on the LUST list. There are seven LUST site listings located within a one-half mile radius of the Subject Property. However, there is only one active LUST site listing within one-quarter mile of the Subject Property. The nearest active LUST site listing is at Los Alamitos Racetrack (477 N. Jefferson St.) approximately 750 feet northeast of the Subject Property. A surface spill released gasoline fuel that impacted soil only. Considering the current status and distance from the Subject Property, it is unlikely that any LUST site listing has impacted the environmental integrity of the Subject Property.

### **California UST (within 0.25 miles)**

The California Water Resources Control Board also provides a list of all permitted underground tanks containing hazardous substances (UST). This database provides information on all registered underground storage tanks. According to information provided, the Subject Property and adjacent properties were not on the UST site list. There are sixteen permitted / registered underground storage tank listings located within a one-half mile radius of the Subject Property. The nearest UST site listing is at Hyster Company (3650 E. Miraloma Ave.) approximately 300 feet southwest of the Subject Property. This UST site listing is not reported as leaking on the LUST database. Considering the current status and distance from the Subject Property, it is unlikely that any UST site listing has impacted the environmental integrity of the Subject Property.

## **5.2. Additional Environmental Record Sources**

Several sources of environmental records, in addition to those required by ASTM E 1527-00 § 7.2.1.1, were obtained by DCI and are described below.

### **5.2.1. Federal**

### **FEDFAC Federal Facilities**

As part of the CERCLA program, federal facilities with known or suspected environmental problems, the Federal Facilities Hazardous Waste Compliance Docket is tracked separately to comply with a Federal Court order. As of March 2006, the Subject Property and adjacent properties were not on the FEDFAC list.

### **Site Enforcement Tracking System (SETS)**

When expanding Superfund monies at a CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) Site, EPA must conduct a search to identify parties with potential financial responsibility for remediation of uncontrolled hazardous waste sites. EPA regional Superfund Waste Management Staff issue a notice letter to the potentially responsible party (PRP). The status field contains the EPA ID number and name of the site where the actual pollution occurred. As of December 2005, the Subject Property and adjacent properties were not on the SETS list.

### **Enforcement Docket System (DOCKET)/Consent Decree Tracking System (CDETS)**

DOCKET tracks civil judicial cases against environmental polluters, while CDETS processes court settlements, called consent decrees. As of March 2006, the Subject Property and adjacent properties were not on the DOCKET list.

### **Criminal Docket System (C-DOCKET)**

The Criminal Docket System is a comprehensive automated system for tracking criminal enforcement actions. C-Docket handles data for all environmental statutes and tracks enforcement actions from the initial stages of investigations through conclusion. As of March 2006, the Subject Property and adjacent properties were not on the C-DOCKET list.

### **Federal Enforcement Dockets**

The US EPA, Office of Enforcement, maintains a list of sites under enforcement by the US EPA. As of March 2006, the Subject Property and adjacent properties were not on the FED list.

#### ***5.2.2. State***

### **CALSITES - No Further Action**

This section includes the sites on the CALSITES list, which have been flagged for no further action by the California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in accordance with Section 25359.6 of the California Health and Safety Code. As of January 2006, the Subject Property and adjacent properties were not on the NFA CALSITES list.

### **State of California Office of Planning and Research (CORTESE)**

This database is a consolidation of information from various sources. It is maintained by the State Office of Planning and Research and lists potential and confirmed hazardous waste or substances sites. Facilities that have been reported elsewhere in this report will not be included in the listing below. As of January 2006, the Subject Property and adjacent properties were not on the CORTESE list.

### **Well Investigation Program (WIP)**

The Well Investigation Program (AB1803) identifies groundwater that is already contaminated and empowers the California Department of Health Services and local health officers to order ongoing monitoring programs. The focus of this program is to monitor and protect drinking water. The Subject Property and adjacent properties were not on the WIP list.

### **Drinking Water Program**

In order to provide for the orderly and efficient delivery of safe drinking water the California State Department of Health Services collect information on the quality of public drinking water wells under the California Drinking Program. Below, the latest and maximum analyses of contaminants are reported (only positive readings are included). The Subject Property and adjacent properties were not on the WQ list.

#### ***5.2.3. Regional***

The Regional Sources list consists of sites tracked by the State of California Water Resources Control Board and the Regional Water Quality Control Board for program tracking and inventory of waste management units.

### **Toxic Releases**

The California Regional Water Quality Control Boards or local Department of Health Services keeps track of toxic releases to the environment. These lists are known as Unauthorized Releases, Spill, Leaks, Investigations and Cleanups (SLIC), Non-Tank Releases, Toxics List or similar, depending on the local agency. The Subject Property and adjacent properties were not on the SLIC list.

### **Toxic Pits**

The Toxic Pits Clean-Up Act (Katz Bill) places strict limitations on the discharge of liquid hazardous wastes into surface impoundment, toxic ponds, pits and lagoons. Regional Water Quality Control Boards are required to inspect all surface impoundment annually; in addition, every facility was required to file a Hydrogeological Assessment Report. Recent legislation

allows the Department of Health Services to exempt facilities that closed on or before December 31, 1985, if a showing is made that no significant environmental risk remains (AB1046). Special exemption provisions have been created for surface impoundments that receive mining wastes. As of January 2006, the Subject Property and adjacent properties were not on the TP list.

#### **Solid Waste Assessment Test (SWAT)**

This program, provided for under the Calderon legislation (Section 13273 of the Water Code), requires that disposal sites with more than 50,000 cubic yards of waste provide sufficient information to the regional water quality control board to determine whether or not the site has discharged hazardous substances which will impact the environment.

Site operators are required to file Solid Waste Assessment Test reports on a staggered basis. Operators of the 150 highest ranking (Rank 1) sites were required to submit Solid Waste Assessment Tests by July 1, 1987, Rank 2 in 1988 and so on.

Operators submit water quality tests to the Regional Water Quality Control Board, describing surface and groundwater quality and supply; and the geology within 1 mile of the site. Air quality tests are submitted to the local Air Quality Management District or Air Pollution Control District. As of January 2003, the Subject Property and adjacent properties were not on the SWAT list.

#### ***5.2.4. Federal and State Operating Permits***

Various agencies issue operating permits or regulate the handling, movements, storage and disposal of hazardous materials and require mandatory reporting. The inclusion in this section does not imply that an environmental problem exists presently or has in the past. The sources referenced below have been searched within half a mile radius, unless otherwise stated, of the Subject Property.

#### **SARA Title III, section 313 (TRIS)**

Title III of the Superfund Amendments and Reauthorization Act, Section 313, also known as Emergency Planning and Community Right-to-Know Act of 1986 requires owners or operators of facilities with more than 10 employees and are listed under Standard Industrial Classification (SIC) Codes 20 through 39 to report the manufacturing, processing or use of more than a threshold of certain chemical or chemical categories listed under section 313. This database is also known as Toxic Release Information System (TRIS). As of 2005, the Subject Property and adjacent properties were not on the SARA list.

#### **Nuclear Regulatory Commission Licensees**

The Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards has been mandated (10 CFR Ch 1.42) to protect the public health and safety, the common defense

and security, and the environment by licensing, inspection, and environmental impact assessment for all nuclear facilities and activities, and for the import and export of special nuclear material. As of January 2006, the Subject Property and adjacent properties were not on the NRC list.

#### **PCB Waste Handlers Database**

The U.S. Environmental Protection Agency tracks generators, transporters, commercial stores and/or brokers and disposers of PCB's in accordance with the Toxic Substance Control Act. As of January 2006, the Subject Property and adjacent properties were not on the PCB Waste list.

#### **Permit Compliance System (PCS)**

PCS contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS was developed by The U.S. Environmental Protection Agency to meet the information needs of the NPDES program under the Clean Water Act. The PCS tracks permits, compliance and enforcement statues of NPDES facilities. As of January 2006, the Subject Property and adjacent properties were not on the PCS list.

#### **AIRS Facility System**

AFS contains emissions and compliance data on air pollution point sources tracked by the U.S. EPA and state and local environmental regulatory agencies. There are seven "criteria pollutants" for which data must be reported to EPA and stored in AIRS: PM10 (particulate matters less than 10 microns in size), carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, reactive volatile organic compounds (VOC), and ozone. AFS replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aeromatic Data (SAROAD). As of January 2006, the Subject Property and adjacent properties were not on the AIRS list.

#### **Section Seven Tracking System (SSTS)**

SSTS evolved from the FIFRA and TSCA Enforcement System (FATES). SSTS tracks the registration of all pesticide producing establishments and tracks annually the types and amounts of pesticides, active ingredients, and devices that are produced, sold or distributed each year. As of January 2006, the Subject Property and adjacent properties were not on the SSTS list.

#### **FIFRA/TSCA Tracking System/ National Compliance Database (FTTS/NCDB)**

NCDB supports implementation of the Federal Insecticide, Fungicide and Rodenticide Control Act (FIFRA) and the Toxic Substance Control Act (TSCA). As of January 2006, the Subject Property and adjacent properties were not on the FIFRA/TSCA list.

### **Federal Facilities Information System (FFIS)**

Federal Facilities Information System (FFIS) contains a list of all Treatment Storage and Disposal Facilities (TSDs) owned and operated by federal agencies. As of January 2006, the Subject Property and adjacent properties were not on the FFIS list.

### **Chemicals in Commerce Information System (CICIS)**

Chemicals in Commerce Information System (CICIS) contains an inventory of chemicals manufactured in commerce or imported for Toxic Substances Control Act regulated commercial purposes. CICIS allows EPA to maintain a comprehensive listing of over 70,000 chemical substances that are manufactured or imported and are regulated under TSCA. As of January 2006, the Subject Property and adjacent properties were not on the CICIS list.

### **FINDS EPA Facility Index System**

The U.S. Environmental Protection Agency maintains an index system of all facilities, which are regulated or have been assigned an identification number for other purposes. Facilities that have been reported elsewhere in this report will not be included in the listing below. As of January 2006, the Subject Property and adjacent properties were not on the FINDS list.

### **Hazardous Waste Information System (HWIS)**

The Department of Toxic Substance Control, California Environmental Protection Agency, maintains a database keeping track of the movement and disposal of hazardous waste. The data is used to support the Tanner legislation, AB 2948. As of 2005, the Subject Property and contiguous properties were not on the HWIS list.

#### ***5.2.5. Other Regional and Local Sources***

##### **City of Cypress – Building Permit Department**

DCI requested building permits for the Subject Property for information concerning the past use of the property and for the possible installation of UST's, clarifiers and other substantial sources of hazardous wastes that could have impacted soil and groundwater. According to City of Cypress Building Department, Technician Mr. Joel Watson, there is no permit information available in file under Assessor Parcel Numbers. Orange County Assessor Records identify the Subject Property as being completed as part of the Los Alamitos Race Course.

##### **City of Cypress – Planning Department**

Records indicate that the Subject Property is approved for commercial use.



### CSUN Library

DCI reviewed available Historical Topographic Maps, Sanborn Fire Insurance Rate Maps, and Aerial Photographs to establish and historical use of the Subject Property. Historic Topographic Maps produced in 1939 identify the Subject Property and surrounding properties as vacant or developed agriculturally. Sanborn Fire Insurance Rate Map coverage was not available due to the limited commercial and industrial developments. In an aerial photograph taken in 1952, the Subject Property appears to be part of a larger agricultural field. In an aerial photograph taken in 1989, the parking lot is present with commercial developments surrounding the vicinity of the Subject Property.

### Orange County Fire Authority

DCI requested records at the Orange County Fire Authority, for information concerning hazardous materials use records, underground storage tanks and posted violations for the Subject Property. According to personnel, records with the Orange County Fire Authority are filed by postal address. There is no record of hazardous materials use, underground storage tanks or outstanding violations for the Subject Property located at APN's #241-091-22, 23, 24, 25 & 26, in the City of Cypress, California.

### Orange County Environmental Health Care Agency

DCI requested records at the Orange County Environmental Health Care Agency for information concerning hazardous materials use and underground storage tanks located at the Subject Property. A request letter with a self-addressed envelope has been submitted however, at this time this agency has not responded to our request. Based on information from the Orange County Health Care Agency Source Control Lists, there is no record of underground storage tanks or industrial site cleanups for the Subject Property located at APN's #241-091-22, 23, 24, 25 & 26, in the City of Cypress, California.

### State of California, Department of Health Services

Records indicate that the Subject Property is not licensed through this agency.

### Munger Map Book – California-Alaksa Oil & Gas Fields

The Subject Property is not located within any oil field boundary - see Appendix D. Also, there is no identified producing and/or abandoned oil well located within 1,500 feet of the Subject Property.

## **5.3. Physical Setting Sources**

The physical setting of the Subject Property and vicinity is described in terms of topographic, geologic, and hydrogeologic features in the following text.

### **5.3.1. Topographic Features**

DCI reviewed current USGS 7.5 Minute Topographic maps to establish the historical use of the Subject Property. On a Historic Topographic Map produced in 1939, the Subject Property and adjacent properties are vacant land or agriculturally improved. In a topographic map produced in 1964, Katella Avenue appears to be a main thoroughfare. The Los Alamitos Race Course is located to the north and the Los Alamitos Armed Forces Reserve Center is approximately one-quarter mile south of the Subject Property. On a map dated 1981 (Orange map) the Subject Property appears to be fully developed. Adjacent properties appear to be commercial and residential developments. See Topographic Map in Appendix D.

### **5.3.2. Geologic Features**

The Subject Property is located within the Orange County Groundwater Basin at an elevation of approximately 30 feet above mean seal level. The natural materials underlying the site consist of Quaternary age alluvium overlying Pleistocene age and Tertiary age semi-consolidated sedimentary rocks, which overlie Mesozoic age igneous and metamorphic rocks of the basement complex at a depth of about 2,500 feet below ground surface. The underlying alluvium consists primarily of sand, gravel, silts and clay. Also, there appears to be no fill material placed on the Subject Property. The alluvium overlies late Pleistocene and Upper Miocene age sediments. Tertiary sediments underlying the Subject Property are semi-consolidated (non-water bearing) sedimentary rocks. Mesozoic age igneous and metamorphic rocks of the basement underlie the Tertiary age rocks.

### **5.3.3. Groundwater Hydrogeology**

Groundwater flow direction and depth have been determined through groundwater monitoring wells located on the Subject Property. Local groundwater flow direction follows the surface topography, which generally appears to be in a southerly direction. Based on information provided by the California Department of Water Resources, the depth to shallow groundwater in the vicinity of Subject Property was measured at approximately 26 feet above mean sea level. However, this well is over one-quarter mile northwest of the Subject Property. Based on monitoring wells at nearby locations, depth to groundwater beneath the Subject Property is assumed to be over 10 feet below ground surface.

## **5.4. Historical Use Information of the Property and Adjoining Properties**

### **5.4.1. Aerial Photographs**

In an ASCS-USDA aerial photograph taken in 1938, the Subject Property appears to be vacant land as part of a larger parcel. Katella Avenue is constructed. Fairchild Collection aerial photographs taken in 1947 identify the Subject Property as vacant land adjacent to vacant land and fallow agricultural fields. A dirt racetrack and agricultural field are to the west and the Los Alamitos Armed Forces Center is present to the south. Agricultural crops appear to be located across Katella Avenue south from the Subject Property in ASCS-USDA

aerial photographs taken in 1952. The dirt track has some additional buildings, residential dwellings are located to the southwest, and the Los Alamitos Armed Forces Center has extended the airstrip runway. The Subject Property appears to be vacant land adjacent to a parking lot for the Los Alamitos Race Course in a Fairchild Collection aerial photograph taken in 1960. Teledyne Collection aerial photographs taken in 1968 seem to show agricultural fields located at the Subject Property. The Subject Property appears to be a developed parking lot for the Los Alamitos Race Course in Teledyne Collection aerial photographs taken in 1977. There were no apparent changes to the Subject Property or contiguous properties in AMI Collection aerial photographs taken in 1983, USGS aerial photographs taken in 1990 and 1994. In an USGS aerial photograph taken in 2002, the subject property appears to be developed similar to present.

#### ***5.4.2. Fire Insurance Maps***

Sanborn Fire Insurance Rate Map coverage was not available due to the lack of commercial and/or industrial developments.

#### ***5.4.3. Property Tax Files***

DCI did not research Property Tax Files for the Subject Property based on the limited history of use.

#### ***5.4.4. Recorded Land Title Records***

DCI did not research Land Title Records for the Subject Property based on the limited history of use.

#### ***5.4.5. USGS 7.5 Minute Topographic Maps***

DCI reviewed current USGS 7.5 Minute Topographic maps to establish the historical use of the Subject Property. On a Historic Topographic Map produced in 1939, the Subject Property and adjacent properties are vacant land or agriculturally improved. In a topographic map produced in 1964, Katella Avenue appears to be a main thoroughfare. Los Alamitos Race Course is located to the north and the Los Alamitos Armed Forces Reserve Center is approximately one-quarter mile south of the Subject Property. On a map dated 1981 (Orange map) the Subject Property appears to be fully developed. Adjacent properties appear to be commercial and residential developments. See Topographic Map in Appendix D.

#### ***5.4.6. Local Street Directories***

DCI did not research Historic Street Directories for the Subject Property located at APN's #241-091-22, 23, 24, 25 & 26, in Cypress, California. Prior to construction of the present development, there was no business tenant identified on the Subject Property.

#### **5.4.7. Building Department Records**

DCI requested copies of building permits for the Subject Property for information concerning the past use of the property and for the possible installation of UST's, clarifiers and other substantial sources of hazardous wastes that could have impacted soil and groundwater. According to City of Cypress Building Department, Technician Mr. Joel Watson, there is no permit information available in file under Assessor Parcel Numbers. Orange County Assessor Records identify the Subject Property as being completed as part of the Los Alamitos Race Course.

#### **5.4.8. Zoning/Land Use Records**

Records indicate that the Subject Property is zoned for mixed commercial use.

### **6. Site Reconnaissance**

A site reconnaissance of the Subject Property was conducted to look for signs of any recognized environmental conditions at the Subject Property and its adjoining properties.

#### **6.1. Methodology and Limiting Conditions**

A site reconnaissance generally consists of a brief meeting onsite with the property owner (or owner's representative), a walk through visual inspection of the property itself, and a visual inspection of the interior and exterior of any existing onsite structures. Conclusions drawn from the site reconnaissance regarding recognized environmental conditions are only based on surface evidence. This conclusion does not apply if surface evidence was concealed from view or altered beyond recognition. A subsurface investigation to detect the presence of UST's, hazardous substances, or petroleum products was not part of this investigation.

#### **6.2. General Site Setting**

All sides of the parcels are open to vehicular traffic. The Subject Property is level terrain currently developed as a parking lot. The site is improved with asphalt pavement, decorative landscaping, and cement sidewalks. There are no hazardous substances present that pose a threat to the environmental integrity of the Subject Property. Also, no spills, heavy staining, or illegal dumping activities were observed on the Subject Property or adjacent parcels. See Appendices.

#### **6.3. Exterior Observations**

DCI found no adverse environmental impact due to hazardous materials use and storage on the Subject Property. The exterior lot is covered with asphalt composition, cement slab, and decorative landscaping that appears to be in good condition overall. No significant evidence

of releases, such as large stains or corrosion, was observed at the Subject Property. Migration of hazardous substances from off-site sources does not appear to be a concern.

#### ***6.3.1. Hazardous Substances and Petroleum Products (Containers)***

Hazardous substances are not permitted for use at the Subject Property. There was no evidence of illegal dumping of chemicals or suspicious containers identified on the Subject Property.

#### ***6.3.2. Underground Storage Tanks***

During the site reconnaissance, exposed and accessible areas of the Subject Property were visually inspected for signs of underground storage tanks. After an interview with the representative of the Subject Property, records search with local authorities, and visual inspection completed, there appeared to be no underground storage tanks at the Subject Property.

#### ***6.3.3. Polychlorinated Byphenols (PCBs)***

No private transformer is located on the Subject Property. Transformers are a concern because of the presence of PCB's in the coolant of some earlier models. Current (new) transformers utilize mineral oil as the insulating or cooling fluid exclusively. In a recent statistically-valid test of over 20,000 distribution transformers, it was determined that the concentration of PCB's in mineral oil was less than fifty parts per million in over ninety-six percent of the transformer units tested.

#### ***6.3.4. Pits, Ponds, or Lagoons***

DCI did not locate any pits, ponds, or lagoons on the Subject Property and directly adjacent properties currently present or in past historical data.

#### ***6.3.5. Stained Soil or Pavement***

DCI did not observe any stained soils on the Subject Property and adjacent properties currently present or in past historical data.

#### ***6.3.6. Stressed Vegetation***

DCI did not observe distressed vegetation on the Subject Property and adjacent properties currently present or in past historical data.

#### ***6.3.7. Solid Waste***

No solid waste dump container was observed on the Subject Property. No spills, staining, odors, or suspicious containers suggestive of the improper disposal of hazardous materials were

present. DCI Services observed no vegetative stress or staining suggestive of illegal hazardous materials dumping.

#### **6.3.8. *Wastewater Treatment / Discharge***

DCI did not observe any industrial wastewater discharge sources, such as clarifiers or sumps, on the Subject Property and adjacent properties. No industrial waste discharge permit is on file with the Orange County Health Care Agency.

#### **6.3.9. *Septic Systems***

DCI did not observe any septic tanks located on the Subject Property. Local sewers permits are available through the City of Cypress Building Department.

#### **6.3.10. *Wells***

DCI did not observe any Wells (monitoring, water, oil and/or gas) located on the Subject Property and adjacent properties.

### **6.4. *Interior Observations***

DCI did not observe any buildings located on the Subject Property.

#### **6.4.1. *Heating / Cooling (gas, electric, steam boiler with furnace, etc.)***

Natural gas fueled appliances are not located on the Subject Property.

#### **6.4.2. *Stains or Corrosion***

DCI did not observe any heavy staining or corrosion located on the Subject Property.

#### **6.4.3. *Drains and Sumps***

DCI did observe two subsurface drains located on the Subject Property. Surface flows in the parking lot are directed southwest onto Katella Avenue.

#### **6.4.4. *Asbestos Containing Materials (ACM's)***

Sampling for Asbestos Containing Materials (ACM's) was not a part of the scope of services for this report. It should be noted that both friable and non-friable forms of ACM might be present in building materials used prior to 1976. Based on the lack of construction, ACM's are unlikely to be present.

## **7. Interviews**

### **7.1. Interview with Owner**

The owner's representative of the Subject Property was identified to DCI Services as Mr. Frank Sherren. Mr. Sherren indicated that he is responsible for the day-to-day management of the Subject Property.

### **7.2. Interview with Site Representative**

The site representative (Walter) was interviewed on the Subject Property. Walter stated that; "hazardous substances are not permitted for use at the Subject Property".

### **7.3. Interviews with Occupants**

There were no occupants to interview located on the Subject Property.

### **7.4. Interviews with Local Government Officials**

Cypress City Technician Mr. Joel Watson assisted DCI personnel with file research on past development for the Subject Property. Mr. Watson indicated that there is no building permit information in-file for the Subject Property located at APN's #241-091-22, 23, 24, 25 & 26.

## **8. Findings and Opinions**

Based on prior site usage, interviews with persons having knowledge of the Subject Property, review of available records, and a physical site inspection, it does not appear that the Subject Property, located at APN's #241-091-22, 23, 24, 25 & 26, in Cypress, California, is adversely impaired by hazardous substances or underground storage tanks. The Subject Property is used as a parking lot with no history of any building improvements. There are no hazardous substances present that pose a threat to the environmental integrity of the Subject Property. Any incidental spills or leaks from vehicles parked onsite should diminish with time through natural attenuation processes. Properties under remediation for soil and/or groundwater contamination in the vicinity of the site appear unlikely to impact the Subject Property. DCI Services has no recommendations for further environmental investigations of the Subject Property at this time.

## **9. Conclusions**

We have performed a Phase I Environmental Site Assessment, in conformance with the scope and limitations of ASTM Practice E 1527, at APN's #241-091-22, 23, 24, 25 & 26, in Orange, California. Any exceptions to, or deletions from, this practice are described in Section 10 of this report. This assessment has revealed no recognized environmental conditions in connection with the Subject Property.

## **10. Deviations**

Any additions, deletions, or deviations from the standard practice outlined in ASTM E 1527-00 are noted here.

## **11. Additional Services**

No additional services outside the Detailed Scope of Services described in Section 2.2 were employed.



## 12. References

1. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. ASTM E1527-00, ASTM Committee E-50 (July, 2000).
2. *GeoFinder* Version 3.1e for Windows by Thomas Brothers Maps (1996).
3. *TopoUSA* Version 2.0 for Windows 95/98 by Delorme (1999).
4. State of California, Department of Oil, Gas and Geothermal Resources, Wildcat Map W1-6
5. Planert, M. and Williams, J.S. *USGS Ground Water Atlas of the United States - Segment 1 California/Nevada*, Online Version (<http://ca.water.usgs.gov/gwatlas/>).
6. City of Cypress, Building Department
7. City of Cypress, Fire Department
8. City of Cypress, Planning Department
9. County of Orange, Assessor Records Department
10. County of Orange, Environmental Health Care Agency
11. U.S. Department of Interior, Geological Survey, *aerial photographs*

## 13. Signature(s) of Environmental Professionals



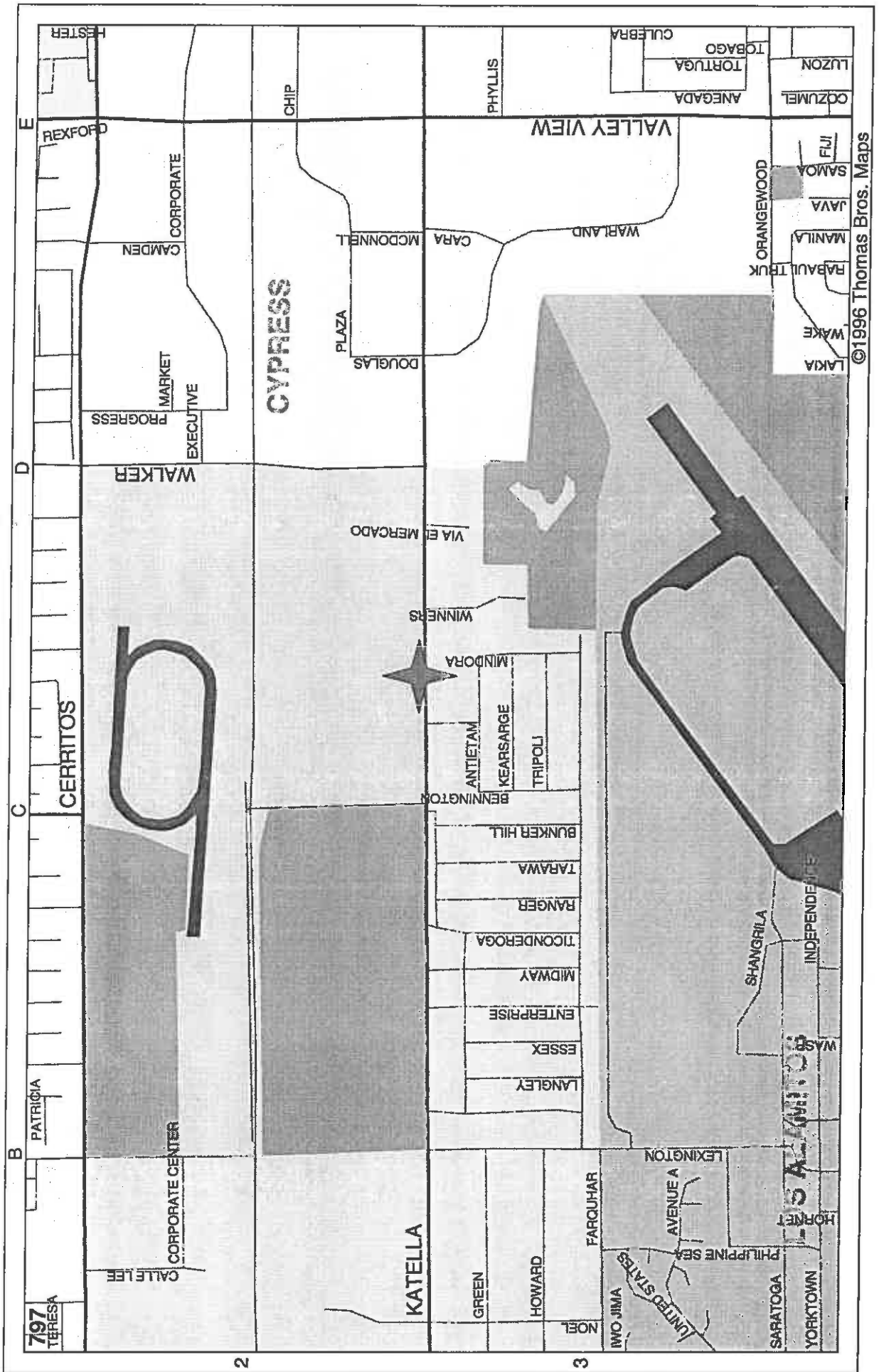
Brett Herion  
Project Manager  
R.E.A. #7603

Dated: August 10<sup>th</sup>, 2006

## 14. Qualification(s) of Environmental Professional(s)

California Registered Environmental Assessor Number 7603

**Appendix A**  
**Site Vicinity Map**



## **Appendix B**

### **Site Permits**

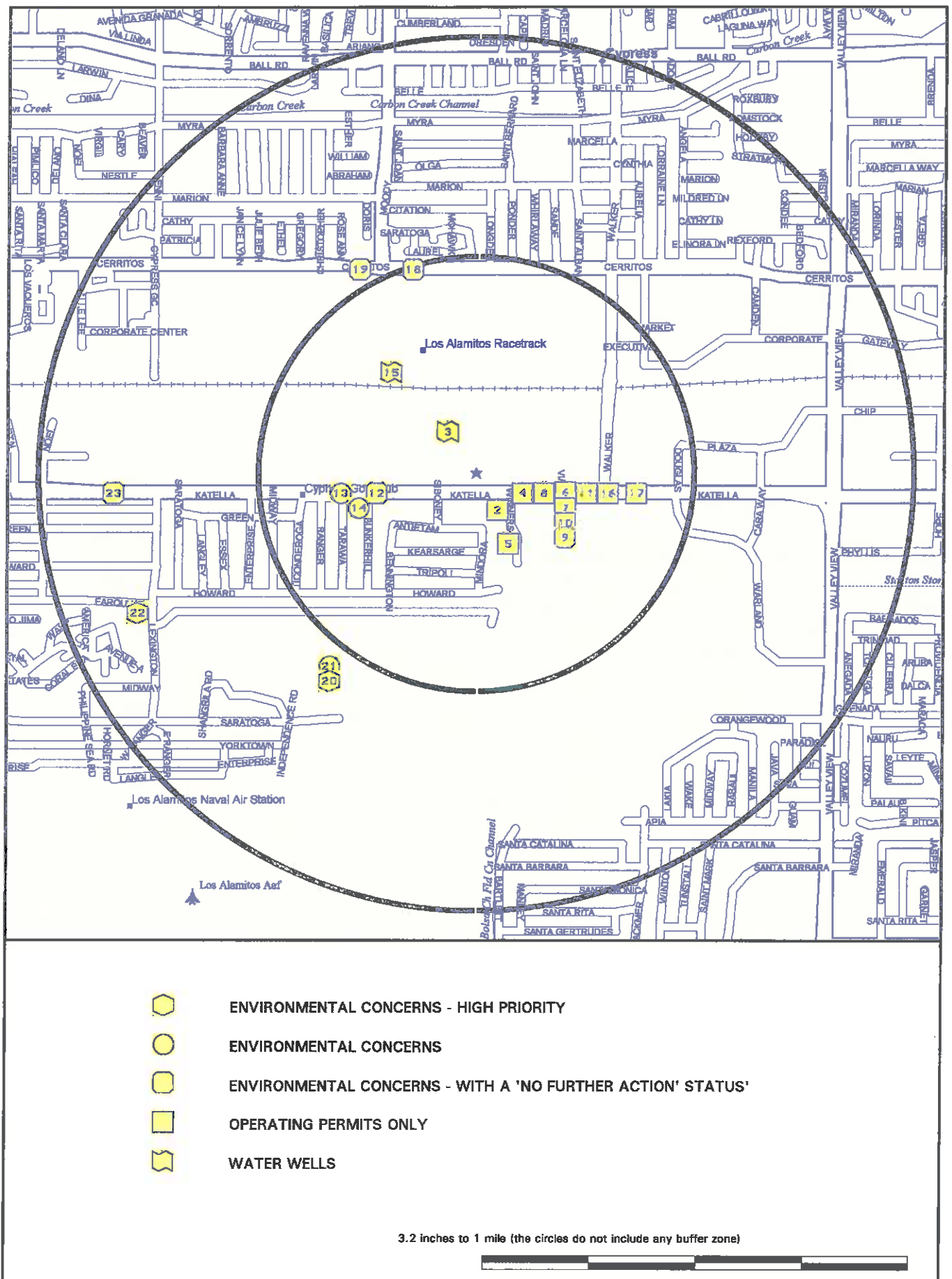
**Appendix C**  
**Site Photographs**



## **Appendix D**

### **Historical Research Documentation**

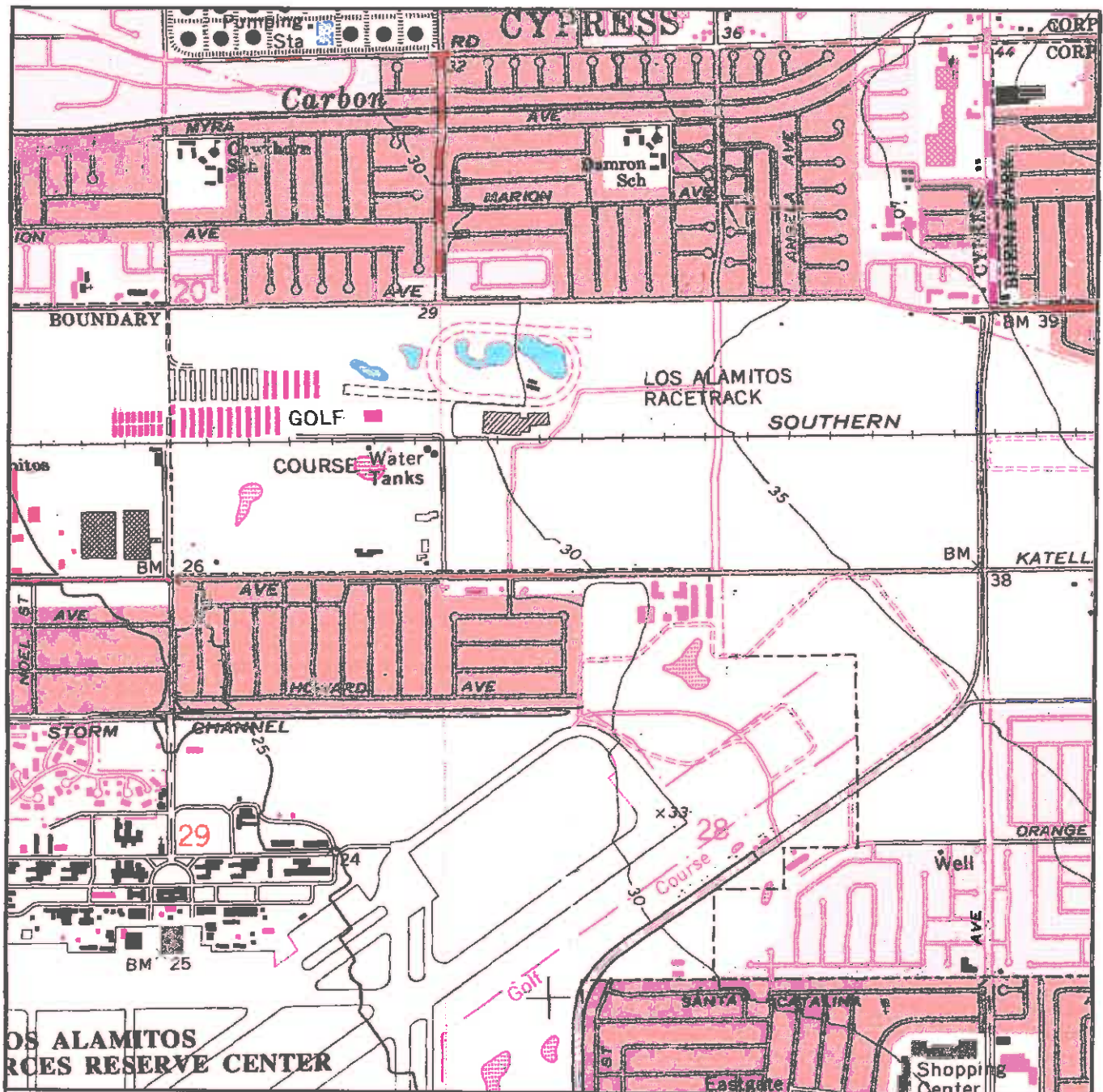
- **Listed Environmental Sites Map**
- **Topographic Maps**
- **Fire Insurance Maps**
- **Aerial Photos**
- **Other Maps & Documents**



APPROXIMATE LOCATION OF IDENTIFIED SITES IN THE VICINITY OF SUBJECT SITE  
AT VACANT LAND N SIDE OF KATELLA AVE, CYPRESS



2. K&A IMPORTS	11061 WINNERS CIR
3. WELL 01 dhs3	LOS ALAMITOS RACE COURSE
4. TILOS EUROPEAN AUTOHAUS	5300 KATELLA AVE
5. ILLUMINATION TECHNOLOGY INC	11132 WINNERS CIR,SUITE 100
6. AERO TRACE	11021 VIA EL MERCADO
7. WESTERN SHIRT LINE	11041 VIA EL MERCADO
8. COSTCO WHOLESALE NO 748	5401 KATELLA AVE
9. M.M.I.	11222 VIA EL MERCADO
10. ABOVEBOARD SIGN COMPANY	11052 VIA EL MERCADO
11. ACE SAW & SUPPLY	5420 KATELLA AVE
12. LOS ALAMITOS RACE TRACK	4861 KATELLA AVE
13. CYPRESS GOLF CLUB	4821 KATELLA AVE
14. UNOCAL SERVICE STATION #5511	5100 KATELLA AVE
15. LOS ALAMITOS RACE COURSE/	WELL 01 DOMESTIC WELL
16. JIM COOK RACING INC	5450 KATELLA AVE
17. POWER LITE RENTALS	5480 KATELLA AVE,SUITE 206
18. HRAKO SERVICE CENTER	5001 CERRITOS AVE
19. ORANGE CO FIRE STATION # 17	4891 CERRITOS AVE
20. LOS ALAMITOS AFRC	AFRC LOS ALAMITOS
21. AFRC POST HEADQUARTERS	AFRC LOS ALAMITOS BLD #57
22. ARMED FORCES RESERVE CTR LF	LEXINGTON & FARQUHART
23. FEDERAL-MOGUL CORP ARROWHEAD P	4411 KATELLA AVE
UNKNOWN LOCATIONS	
CITY OF LOS ALAMITOS	CERRITOS AVE
FLUOROCARBON MECH SL	PO BOX 520
CYPRESS AUTO CENTER	WALKER ST



longitude: -118° 2' 28.5"  
latitude: 33° 48' 12.8"

utm easting: 403616 meters  
utm northing: 3740669 meters  
utm zone: NAD 11

1.8 inches to 1/2 mile

Universal Transverse Mercator North is straight up

#### AREA RADON ESTIMATES

<2	pCi/L	96.8%
2-4	pCi/L	3.2 %
4-8	pCi/L	0.0 %
8-20	pCi/L	0.0 %
4-8	pCi/L	0.0 %
8-20	pCi/L	0.0 %
20 >	pCi/L	0.0%

U.S. Dept of Interior, Geological Survey

LOS ALAMITOS ( 1964 1981)

TOPOGRAPHIC MAP OF THE VICINITY OF THE SUBJECT SITE LOCATED AT  
VACANT LAND N SIDE OF KATELLA AVE, CYPRESS



6-11-2002





6-1-1994



9-6-1990



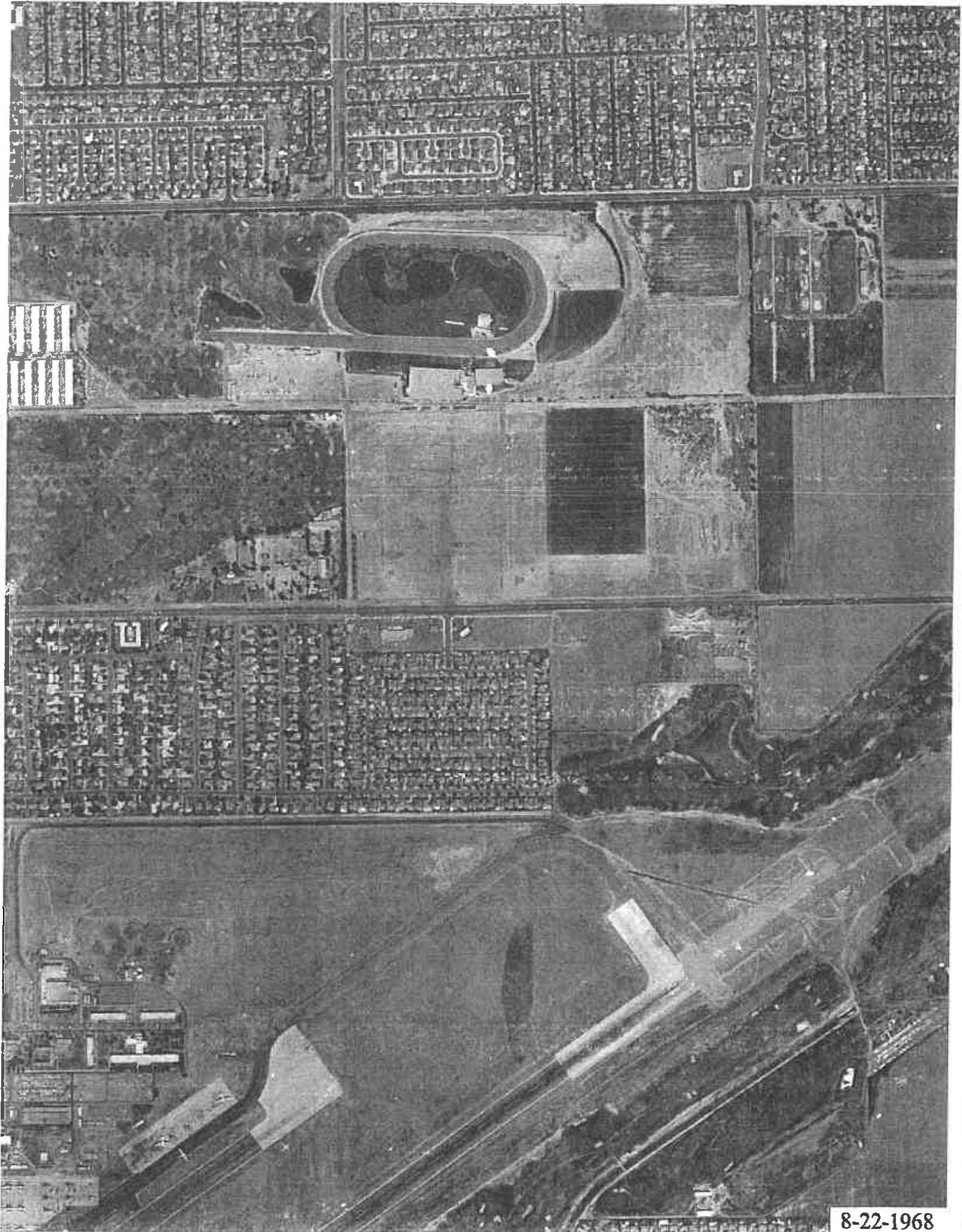


6-18-1983



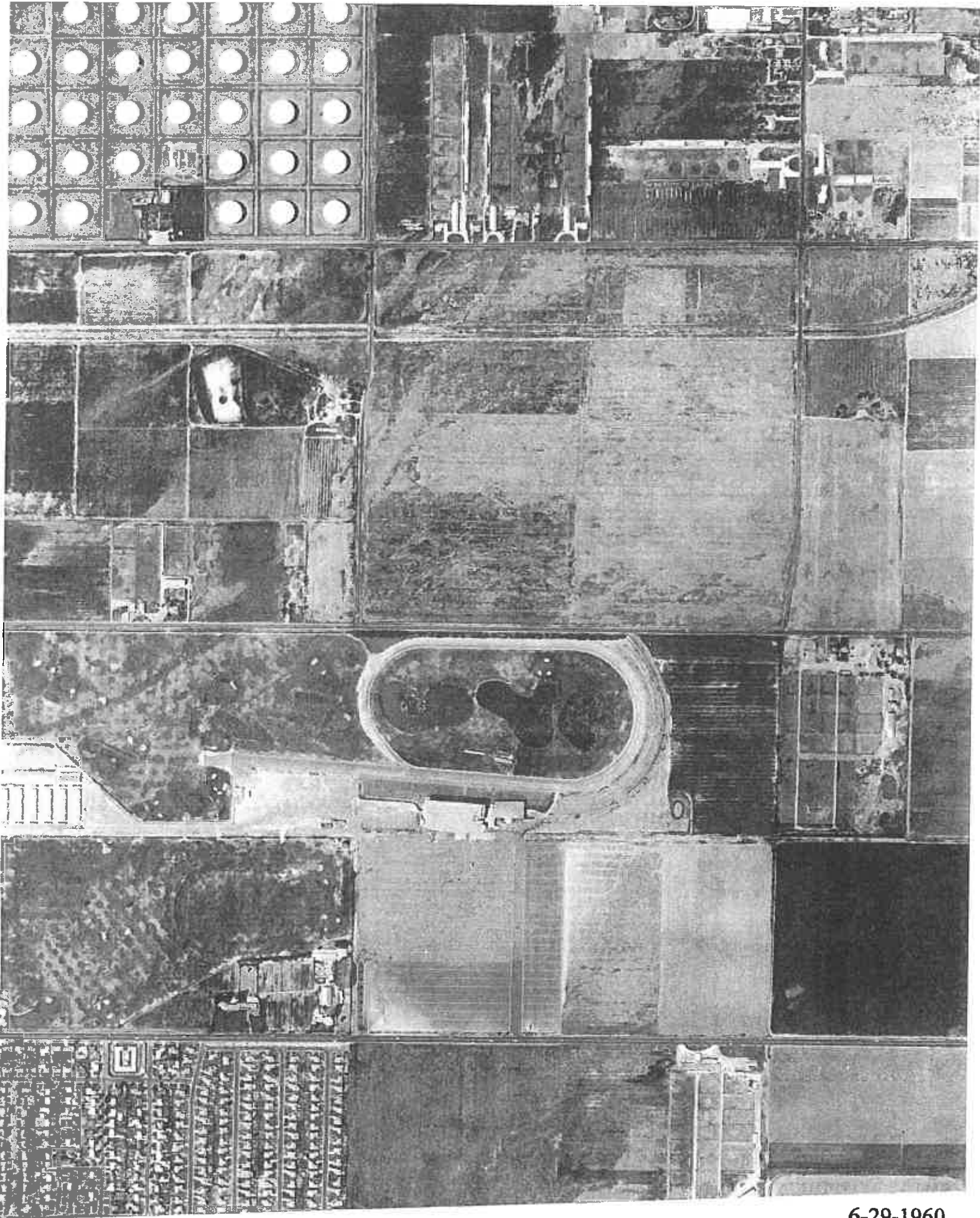
5-20-1977



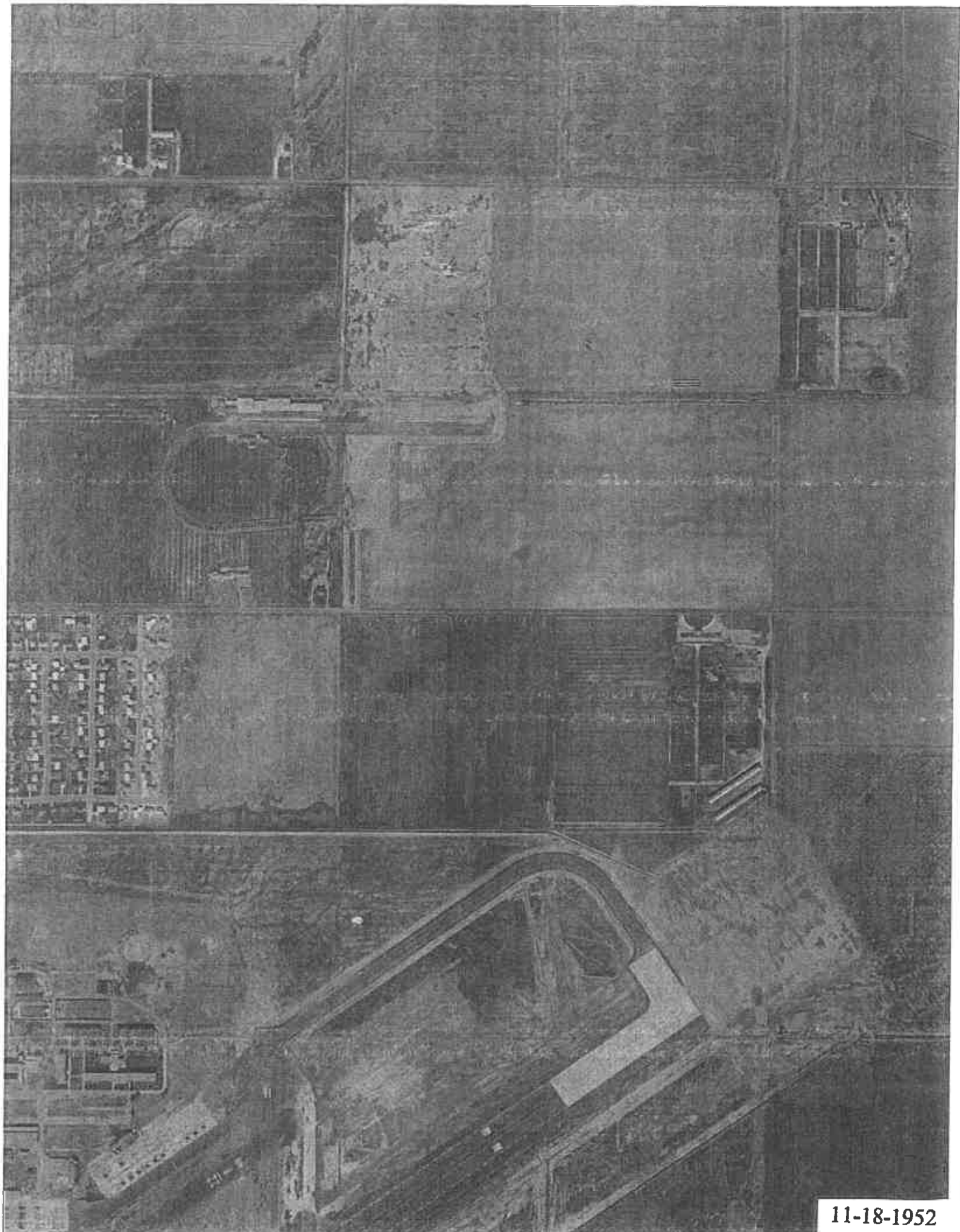


8-22-1968





6-29-1960

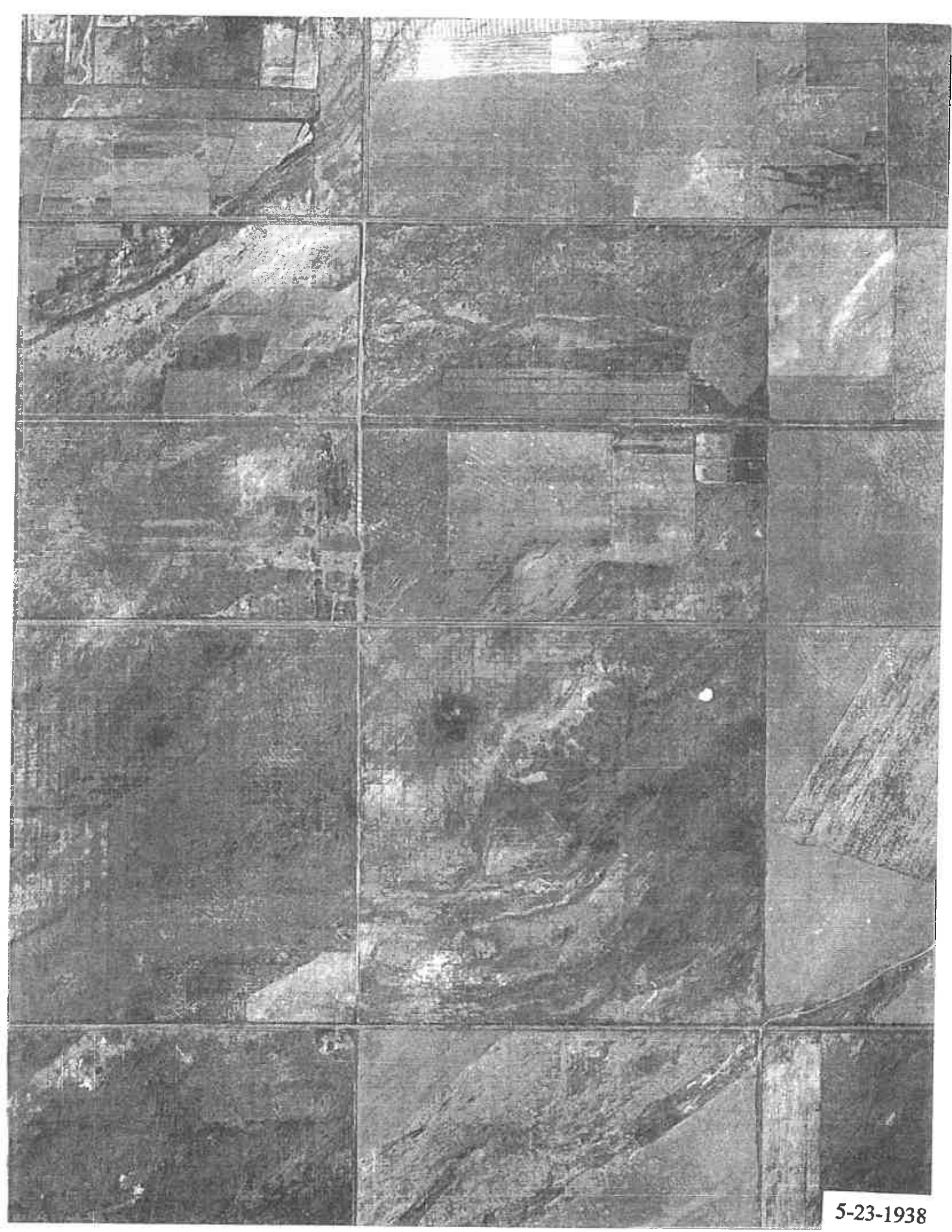


11-18-1952





6-17-1947



5-23-1938





Longitude: -118° 2' 28.5"  
Latitude: 33° 48' 12.8"

UTM Easting: 403616 meters  
UTM Northing: 3740669 meters  
UTM Zone: NAD 11

County: ORANGE

Project: URBAN  
Quadrangle:  
Date: 3/29/2004  
Film Type: Black & White

Scale: 1 inch to 528 feet



UTM North is straight up

Source: U.S. Dept of Interior, Geological Survey

AERIAL PHOTOGRAPH OF THE VICINITY OF THE SUBJECT SITE LOCATED AT  
VACANT LAND N SIDE OF KATELLA AVE, CYPRESS



**Primary Owner:** LOS ALAMITOS RACE COURSE; CATHY CHAVEZ

**Secondary Owner:**

**Mail Address:** 4961 KATELLA AVE  
LOS ALAMITOS CA 90720

**Site Address:**  
90630

**Assessor Parcel Number:** 241-091-26

**Phone:** - -

**Census Tract:** 1101.13

**Housing Tract Number:**

**Lot Number:**

**Page Grid:**

**Legal Description:** Abbreviated Description: PM 298-13 PAR 7 POR OF PAR

**Property Characteristics:**

**Bedrooms :**    **Year Built :**    **Square Feet :**

**Bathrooms :**    **Garage :**    **Lot Size :**

**Total Rooms :**    **Fireplace :**    **Number of Units : 0**

**Zoning :**    **Pool :**    **Use Code : Commercial Building, Mail Order, Show Room (non-auto), Commercial Whse**

**No of Stories:**

**Sale & Loan Information**

**Transfer Date :** 00/00/1998    **Seller :** N/A

**Transfer Value :** N/A    **Document # :** 1998-00119859BK-PG: -    **Cost/Sq. Feet :** N/A

**First Loan Amount :** N/A    **Lender :** N/A MTG

**Assessment & Tax Information**

<b>Assessed Value :</b> \$880,911	<b>Percent Improvement :</b> 13.95%	<b>Homeowner Exemption :</b>
<b>Land Value :</b> \$757,994	<b>Tax Amount :</b> \$18,333.60	<b>Tax Rate Area :</b> 19-005
<b>Improvement Value :</b> \$122,917	<b>Tax Account ID :</b>	<b>Tax Status :</b> Current
<b>Market Improvement Value :</b>	<b>Market Land Value :</b>	<b>Market Value:</b>

Data Deemed Reliable, But Not Guaranteed.



**Primary Owner:** LOS ALAMITOS RACE COURSE; CATHY CHAVEZ

**Secondary Owner:**

**Mail Address:** 4961 KATELLA AVE  
LOS ALAMITOS CA 90720

**Site Address:**  
90630

**Assessor Parcel Number:** 241-091-25

**Phone:** - -

**Census Tract:** 1101.13

**Housing Tract Number:**

**Lot Number:**

**Page Grid:**

**Legal Description:** Abbreviated Description: PM 298-13 PAR 7 POR OF PAR

**Property Characteristics:**

**Bedrooms :**    **Year Built :**    **Square Feet :**

**Bathrooms :**    **Garage :**    **Lot Size :**

**Total Rooms :**    **Fireplace :**    **Number of Units : 0**

**Zoning :**    **Pool :**    **Use Code : Commercial Building, Mall Order, Show Room (non-auto), Commercial Whse**

**No of Stories:**

**Sale & Loan Information**

**Transfer Date :** 00/00/1998    **Seller :** N/A

**Transfer Value :** N/A    **Document # :** 1998-00119859BK-PG:    **Cost/Sq. Feet :** N/A

**First Loan Amount :** N/A    **Lender :** N/A MTG

**Assessment & Tax Information**

**Assessed Value :** \$312,727    **Percent Improvement :** 11.71%    **Homeowner Exemption :**

**Land Value :** \$276,100    **Tax Amount :** \$6,609.70    **Tax Rate Area :** 19-031

**Improvement Value :** \$36,627    **Tax Account ID :**    **Tax Status :** Current

**Market Improvement Value :**    **Market Land Value :**    **Market Value:**

Data Deemed Reliable, But Not Guaranteed.



**Primary Owner:** LOS ALAMITOS RACE COURSE; CATHY CHAVEZ

**Secondary Owner:**

**Mail Address:** 4961 KATELLA AVE  
LOS ALAMITOS CA 90720

**Site Address:**  
90630

**Assessor Parcel Number:** 241-091-24

**Phone:** - -

**Census Tract:** 1101.13

**Housing Tract Number:**

**Lot Number:**

**Page Grid:**

**Legal Description:** Abbreviated Description: P BK 298 PG 13 PAR 8

**Property Characteristics:**

**Bedrooms :**    **Year Built :**    **Square Feet :**

**Bathrooms :**    **Garage :**    **Lot Size :**

**Total Rooms :**    **Fireplace :**    **Number of Units : 0**

**Zoning :**    **Pool :**    **Use Code : Commercial Building, Mail Order, Show Room (non-auto), Commercial Whse**

**No of Stories:**

**Sale & Loan Information**

**Transfer Date :** 00/00/1998    **Seller :** N/A

**Transfer Value :** N/A    **Document # :** 1998-00119859BK-PG: -    **Cost/Sq. Feet :** N/A

**First Loan Amount :** N/A    **Lender :** N/A MTG

**Assessment & Tax Information**

**Assessed Value :** \$1,241,756    **Percent Improvement :** 11.72%    **Homeowner Exemption :**

**Land Value :** \$1,096,276    **Tax Amount :** \$26,153.40    **Tax Rate Area :** 19-031

**Improvement Value :** \$145,480    **Tax Account ID :**    **Tax Status :** Current

**Market Improvement Value :**    **Market Land Value :**    **Market Value:**

Data Deemed Reliable, But Not Guaranteed.





**Primary Owner:** LOS ALAMITOS RACE COURSE; CATHY CHAVEZ

**Secondary Owner:**

**Mail Address:** 4961 KATELLA AVE  
LOS ALAMITOS CA 90720

**Site Address:**  
90630

**Assessor Parcel Number:** 241-091-23

**Phone:** - -

**Census Tract:** 1101.13

**Housing Tract Number:**

**Lot Number:**

**Page Grid:**

**Legal Description:** Abbreviated Description: PM 298-13 PAR 9 POR OF PAR

**Property Characteristics:**

**Bedrooms :**    **Year Built :**    **Square Feet :**

**Bathrooms :**    **Garage :**    **Lot Size :**

**Total Rooms :**    **Fireplace :**    **Number of Units : 0**

**Zoning :**    **Pool :**    **Use Code : Commercial Building, Mail Order, Show Room (non-auto), Commercial Whse**

**No of Stories:**

**Sale & Loan Information**

**Transfer Date :** 00/00/1998    **Seller :** N/A

**Transfer Value :** N/A    **Document # :** 1998-00119859BK-PG: -    **Cost/Sq. Feet :** N/A

**First Loan Amount :** N/A    **Lender :** N/A MTG

**Assessment & Tax Information**

**Assessed Value :** \$2,505,282    **Percent Improvement :** 14.50%    **Homeowner Exemption :**

**Land Value :** \$2,142,058    **Tax Amount :** \$38,171.20    **Tax Rate Area :** 19-005

**Improvement Value :** \$363,224    **Tax Account ID :**    **Tax Status :** Current

**Market Improvement Value :**    **Market Land Value :**    **Market Value:**

Data Deemed Reliable, But Not Guaranteed.



**Primary Owner:** LOS ALAMITOS RACE COURSE

**Secondary Owner:**

**Mail Address:** 4961 KATELLA AVE  
LOS ALAMITOS CA 90720

**Site Address:**  
90630

**Assessor Parcel Number:** 241-091-22

**Phone:** - -

**Census Tract:** 1101.13

**Housing Tract Number:**

**Lot Number:**

**Page Grid:**

**Legal Description:** Abbreviated Description: PM 298-13 PAR 9 POR OF PAR

**Property Characteristics:**

Bedrooms : Year Built : Square Feet :  
Bathrooms : Garage : Lot Size :  
Total Rooms : Fireplace : Number of Units : 0  
Zoning : Pool : Use Code : Commercial Building, Mail Order, Show Room (non-auto),  
Commercial Whse  
No of Stories:

**Sale & Loan Information**

Transfer Date : 00/00/1998 Seller : N/A  
Transfer Value : N/A Document # : 1998-00119859BK-PG: - Cost/Sq. Feet : N/A  
First Loan Amount : N/A Lender : N/A MTG

**Assessment & Tax Information**

Assessed Value : \$4,201,818	Percent Improvement : 11.73%	Homeowner Exemption :
Land Value : \$3,709,137	Tax Amount : \$64,628.80	Tax Rate Area : 19-031
Improvement Value : \$492,681	Tax Account ID :	Tax Status : Current
Market Improvement Value :	Market Land Value :	Market Value:

Data Deemed Reliable, But Not Guaranteed.



## Nearby Neighbors

, 90630-  
APN: 241-091-26 ORANGE COUNTY

JJSD LLC,  
10711 WALKER ST  
CYPRESS CA 90630

APN: 241-081-16

Bedrooms:

Square Feet:

Year Built:

Tel: - -

Bathrooms:

Lot Size:

Garage:

NINETY FIVE TEN  
10700 WALKER ST  
CYPRESS CA 90630

APN: 241-114-10

Bedrooms:

Square Feet: 12360 SF

Year Built: 1978

Tel: - -

Bathrooms:

Lot Size: 34,920 SF

Garage:

NING, STANLEY; NING, NANCY  
10721 WALKER ST  
CYPRESS CA 90630

APN: 241-081-17

Bedrooms:

Square Feet:

Year Built:

Tel: - -

Bathrooms:

Lot Size:

Garage:

KANG, IAN  
10602 WALKER ST  
CYPRESS CA 90630

APN: 241-112-07

Bedrooms:

Square Feet: 5915 SF

Year Built: 1979

Tel: - -

Bathrooms:

Lot Size: 16,800 SF

Garage:

EPIX LTD,  
10731 WALKER ST  
CYPRESS CA 90630

APN: 241-081-18

Bedrooms:

Square Feet:

Year Built:

Tel: - -

Bathrooms:

Lot Size:

Garage:

CYPRESS CORPORATE PARK LLC  
10741 WALKER ST  
CYPRESS CA 90630

APN: 241-081-19

Bedrooms:

Square Feet:

Year Built:

Tel: - -

Bathrooms:

Lot Size:

Garage:

LEE, HUIDAE; LEE, BOKSOON KIM  
10582 WALKER ST  
CYPRESS CA 90630

APN: 241-112-06

Bedrooms:

Square Feet: 5679 SF

Year Built: 1979

Tel: - -

Bathrooms:

Lot Size: 16,800 SF

Garage:

WELLMAN, MICHAEL S; PUTNAM, MACRAE  
WELLMAN  
10742 WALKER ST  
CYPRESS CA 90630

APN: 241-114-09

Bedrooms:

Square Feet: 9790 SF

Year Built: 1978

Tel: - -

Bathrooms:

Lot Size: 25,228 SF

Garage:

WOOLSTON, NEAL A  
10562 WALKER ST  
CYPRESS CA 90630

APN: 241-112-05

Bedrooms:

Square Feet: 5196 SF

Year Built: 1979

Tel: - -

Bathrooms:

Lot Size: 16,800 SF

Garage:

BAKER, ANNA F (TR) (SURVIVORS)  
10542 WALKER ST  
CYPRESS CA 90630

APN: 241-112-04

Bedrooms:

Square Feet: 5602 SF

Year Built: 1979

Tel: - -

Bathrooms:

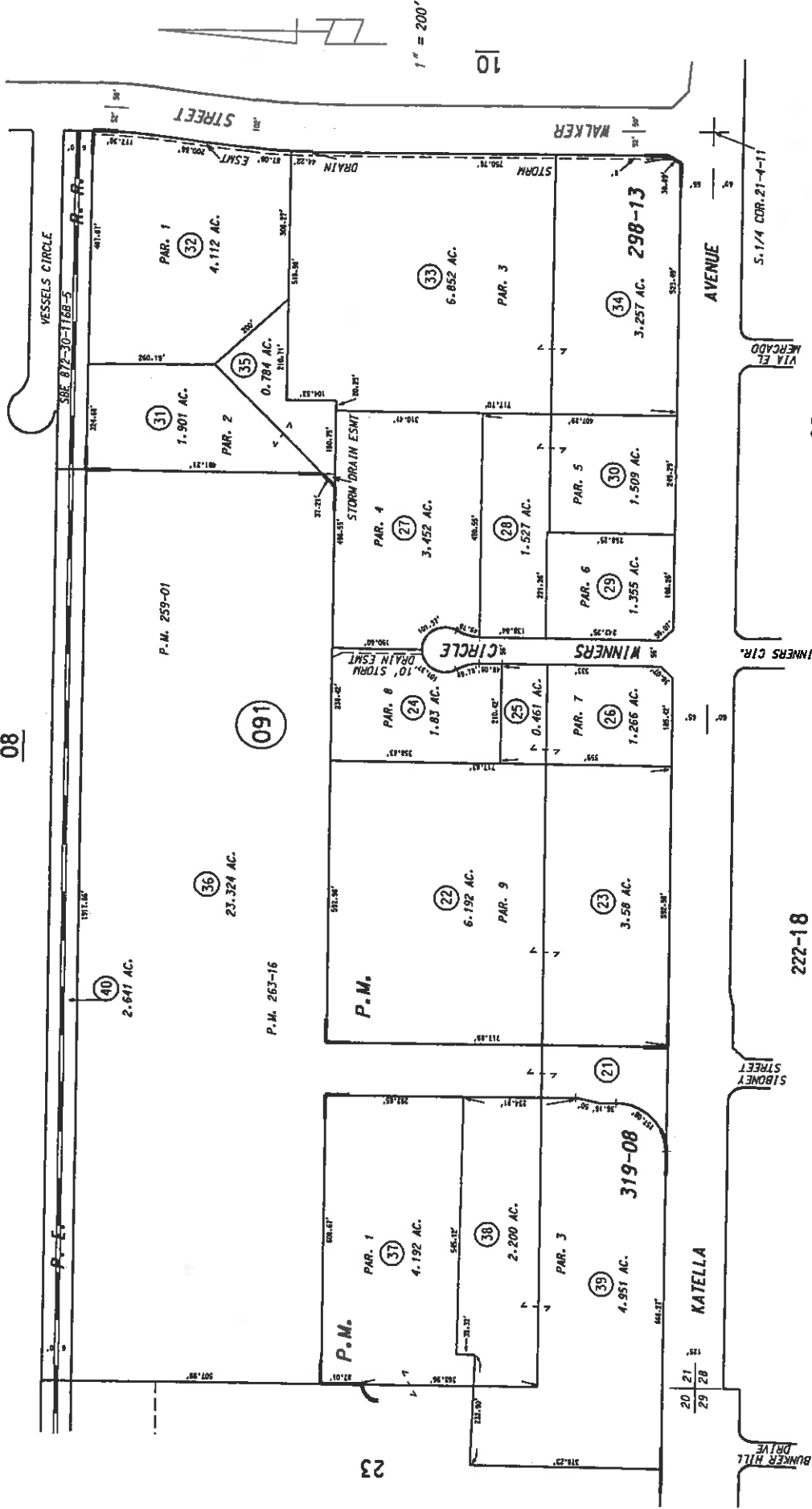
Lot Size: 16,800 SF

Garage:

PUR. S 1/2, SW 1/4, SEC. 21, T 4 S, R 11 W

241-09

08



MARCH 1969

PARCEL MAP P.M. 259-01, 298-13, 319-08

222-18

222-02

NOTE - ASSESSOR'S BLOCK & PARCEL NUMBERS SHOWN IN CIRCLES

ASSESSOR'S MAP BOOK 241 PAGE 09 COUNTY OF ORANGE

## **Appendix E**

### **Regulatory Records Documentation**

ENVIRONMENTAL RECORD SEARCH  
SUMMARY

KNOWN ENVIRONMENTAL CONCERNS  
23528  
VACANT LAND N SIDE OF KATELLA AVE, CYPRESS CA

Page: 1  
Job : DCIS7833  
Date: 07-26-2006

ADDRESS	CITY	LOCATION	SOU- RCE	STA- TUS	PAGE	MAP LOC	DIR
<b>KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/4 MILE OF THE SUBJECT SITE</b>							
		LOS ALAMITOS RACE COURSE	04S/11W-20R02 S	WELL 01	dhs3	WIP	13 <b>3</b> NW
11222	VIA EL MERCADO	LOS ALAMITOS	M.M.I.	CS-nfa	NFA	7	<b>9</b> SE
4961	KATELLA AVE	LOS ALAMITOS	LOS ALAMITOS RACE TRACK	LUST	9	10	<b>12</b> W
		LOS ALAMITOS RACE TRACK	LUST	9		10	
		LOS ALAMITOS RACE TRACK	HWIS			21	
		LOS ALAMITOS RACE TRACK	HWIS			21	
		LOS ALAMITOS RACE TRACK	RCRA	S		17	
		LOS ALAMITOS RACE TRACK	FIFRA			20	
		KOHLER CO	HWIS			21	
		LOS ALAMITOS RACE TRACK	UST	9598A		24	
		LOS ALAMITOS RACE TRACK	FCS			19	
		LOS ALAMITOS RACE COURSE	HWIS			21	
4921	KATELLA AVE	CYPRESS	CYPRESS GOLF CLUB	LUST	3B	10	<b>13</b> W
		CYPRESS GOLF CLUB	HWIS			21	
5100	KATELLA AVE	LOS ALAMITOS	UNOCAL SERVICE STATION #5511	LUST	7	10	<b>14</b> W
		UNOCAL SVC STA #5511	RCRA			17	
		UNOCAL SVC STA #5511	HWIS			22	
		CIRCLE K STORES INC STATION #5	HWIS			22	
		INNABI UNION 76 #1	UST	87&A9		24	
		INNABI UNION 76 #1	UST	87&B3		24	
		TOSCO 05680	RCRA	L		17	
		TOSCO #5680	UST	2005		24	
		WELL 01 DOMESTIC WELL	04S/11W-20R02 S	LOS ALAMITOS RACE COURSE/	WQ	AU	14 <b>15</b> NW
<b>KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/4 - 1/2 MILE OF THE SUBJECT SITE</b>							
5001	CERRITOS AVE	CYPRESS	HRAKO SERVICE CENTER	LUST	9	9	<b>18</b> N
<b>KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/2 - 3/4 MILE OF THE SUBJECT SITE</b>							
4991	CERRITOS AVE	CYPRESS	ORANGE CO FIRE STATION # 17	LUST	9	8	<b>19</b> NW
	AFRC LOS ALAMITOS	LOS ALAMITOS	LOS ALAMITOS AFRC	TP		18	<b>20</b> SW
			AFRC BLDG 27,34,158,43,25,2,37	LUST	5C	8	
	AFRC LOS ALAMITOS BLD #57	LOS ALAMITOS	AFRC POST HEADQUARTERS	LUST	INACT	8	<b>21</b> SW
	AFRC LOS ALAMITOS BLD#201	LOS ALAMITOS	AFRC FUEL FARM #89	LUST	3B	8	<b>21</b> SW
	AFRC LOS ALAMITOS BLD#244	LOS ALAMITOS	AFRC BUILDING 244	LUST	1	8	<b>21</b> SW
<b>KNOWN ENVIRONMENTAL CONCERNS, WITHIN 3/4 - 1 MILE OF THE SUBJECT SITE</b>							
	LEXINGTON & FARQUHART	LOS ALAMITOS	ARMED FORCES RESERVE CTR LF	SWIS		13	<b>22</b> W
4411	KATELLA AVE	LOS ALAMITAS	FEDERAL-MOGUL CORP ARROWHEAD P	NFRAP	NFA	2	<b>23</b> W

## OPERATING PERMITS ONLY

23528

VACANT LAND N SIDE OF KATELLA AVE, CYPRESS CA

Page: 2

Job : DCIS7833

Date: 07-26-2006

ADDRESS	CITY	LOCATION	SOURCE	STATUS	PAGE	MAP LOC	DIR
<b>OPERATING PERMITS ONLY, WITHIN 1/4 MILE OF THE SUBJECT SITE</b>							
11061	WINNERS CIR	LOS ALAMITOS	K&A IMPORTS	HWIS	23	<b>2</b>	SE
			K&A IMPORTS	RCRA	18		
			K & A IMPORT SERVICES	HWIS	23		
			K & A IMPORT SERVICES	RCRA	18		
5300	KATELLA AVE	LOS ALAMITOS	TILOS EUROPEAN AUTOHAUS	RCRA	17	<b>4</b>	E
			TILOS EUROPEAN AUTO	HWIS	22		
			TILOS EUROPEAN AUTOHAUS	HWIS	22		
11132	WINNERS CIR,SUITE 100	LOS ALAMITOS	ILLUMINATION TECHNOLOGY INC	HWIS	24	<b>5</b>	SE
11021	VIA EL MERCADO	LOS ALAMITOS	AERO TRACE	HWIS	23	<b>6</b>	E
			AERO TRACE	RCRA	17		
11041	VIA EL MERCADO	LOS ALAMITOS	WESTERN SHIRT LINE	HWIS	23	<b>7</b>	E
5401	KATELLA AVE	CYPRESS	COSTCO WHOLESALE NO 748	RCRA	17	<b>8</b>	E
11052	VIA EL MERCADO	LOS ALAMITOS	ABOVEBOARD SIGN COMPANY	HWIS	23	<b>10</b>	E
5420	KATELLA AVE	LOS ALAMITOS	ACE SAW & SUPPLY	HWIS	22	<b>11</b>	E
5450	KATELLA AVE	LOS ALAMITOS	JIM COOK RACING INC	HWIS	22	<b>16</b>	E
			WIRE TECH EDM INC	HWIS	22		

## OPERATING PERMITS ONLY, WITHIN 1/4 - 1/2 MILE OF THE SUBJECT SITE

5480	KATELLA AVE,SUITE 206	LOS ALAMITOS	POWER LITE RENTALS	HWIS	23	<b>17</b>	E
------	-----------------------	--------------	--------------------	------	----	-----------	---

## SITES WITH UNKNOWN OR NON-SPECIFIC LOCATION

GERRITOS AVE	CYPRESS	CITY OF LOS ALAMITOS	HWIS	21
PO BOX 520	LOS ALAMITOS	FLUOROCARBON MECH SL	HWIS	23
WALKER ST	CYPRESS	CYPRESS AUTO CENTER	HWIS	23



## REFERENCED SOURCES

Job : DCIS7833  
Date: 07-26-2006

### FEDERAL SOURCES

NPL NATIONAL PRIORITY LIST (3/29/06)  
CERCLA CERCLIS (3/29/06)  
NFRAP NFRAP (3/29/06)  
FedFac FEDERAL FACILITIES (3/29/06)  
ERNS EMERGENCY RESPONSE NOTIFICATION SYSTEM  
HM HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM (2005)  
SETS SITE ENFORCEMENT TRACKING SYSTEM (2005)  
CDETS ENFORCEMENT DOCKET (DOCKET/CDETS) (3/29/06)  
CD C-DOCKET (3/29/06)  
RV RCRA VIOLATORS LIST (03/06)  
TSD RCRA - TSD FACILITIES (03/06)  
I Incinerator D Land Disposal T Storage/Treatment  
FD FEDERAL ENFORCEMENT DOCKETS

### CALIFORNIA STATE SOURCES

AnnWrk ANNUAL WORK PLAN (01/18/06)  
BKLK Backlog DLST Delisted from the AWP AWP Active AWP site  
REFRW Referred to the RWQB COM Certified, maint mode REFRG Referred to RCRA  
CERT Certified after remediation  
CalSite CALSITES (1/18/06)  
VC VOLUNTARY CLEANUP PROGRAM (1/18/06)  
FE PROPERTIES NEEDING FURTHER EVALUATION (1/18/06)  
RF REFERRED UNCONFIRMED PROPERTIES (1/18/06)  
CS-nfa CALSITES - NO FURTHER ACTION (1/18/06)  
CS CORTESE (1/06)  
LUST LEAKING UNDERGROUND STORAGE TANKS (02/06)  
0 No action 3B Prel site assmnt underway 7 Remedial action underway  
1 Leak being confirmed 5C Pollution characterization 8 Post remedial action monitoring  
3A Site workplan submitted 5R Remediation plan 9 Case closed  
SWIS SOLID WASTE INFORMATION SYSTEM (1/06)  
WIP WELL INVESTIGATION PROGRAM  
WQ DRINKING WATER PROGRAM (2002)  
SC SCHOOL PROPERTY EVALUATION PROGRAM (1/18/06)

### REGIONAL SOURCES

NT TOXIC RELEASES (01/06)  
TP TOXIC PITS (01/06)  
SR SOLID WASTE ASSESSMENT TEST - REGIONAL (01/03)

### OPERATING PERMITS

RCRA RCRA GENERATORS (03/06)  
L Large Generator T Transporter S Small Generator  
SARA SARA TITLE III, SECTION 313 (TRIS) (2005)  
Nucl NUCLEAR REGULATORY COMMISSION LICENSEES (01/06)  
PCB PCB WASTE HANDLERS DATABASE (01/06)  
PCS PERMIT COMPLIANCE SYSTEM (PCS) (01/06)  
AFS AIRS FACILITY SYSTEM (AFS) (01/06)  
PE SECTION SEVEN TRACKING SYSTEM (01/06)  
FIFRA FIFRA/TSCA TRACKING SYSTEM (01/06)  
FIS FEDERAL FACILITIES INFORMATION SYSTEM (FFIS) (01/06)  
CICIS CHEMICALS IN COMMERCE INFORMATION SYSTEM (01/06)  
FN FINDS EPA FACILITY INDEX SYSTEM (01/06)  
HWIS HAZARDOUS WASTE INFORMATION SYSTEM (1984-2005)  
UST UNDERGROUND STORAGE TANKS

ENVIRONMENTAL RECORD SEARCH  
LISTED BY SOURCE

## INTRODUCTION

BBL has used its best effort but makes no claims as to the completeness or accuracy of the referenced government sources or the completeness of the search. Our records are frequently updated but only as current as their publishing date and may not represent the entire field of known or potential hazardous waste or contaminated sites. To ensure complete coverage of the subject property and surrounding area, sites may be included in the list if there is any doubt as to the location because of discrepancies in map location, zip code, address, or other information in our sources. For additional information call 858 793-0641.

In accordance with ASTM E-1527-05, the following government sources have been searched for sites at the street address, unless otherwise stated, of the subject location.

## FEDERAL SOURCES

### NPL National Priority List

EPA has prioritized sites with significant risk to human health and the environment. These sites receive remedial funding under the Comprehensive Environmental Response Conservation and Liability Act (CERCLA).

*No listings within 1 mile radius of the subject site.*

### CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS is a database used by the EPA to track activities conducted under the Comprehensive Environmental Response and Liability Act CERCLA (1980) and the amendment the Superfund Amendments and Reauthorization Act SARA (1986).

Sites to be included are identified primarily by the reporting requirements of hazardous substances Treatment, Storage and Disposal (TSD) facilities and releases larger than specific Reportable Quantities (RQ), established by EPA.

Using the National Oil and hazardous Substance Pollution Contingency Plan(National Contingency Plan) the EPA set priorities for cleanup.

The EPA rates National Contingency Plan sites according to a quantitative Hazard Ranking System (HRS) based on the potential health risk via any one or more pathways: groundwater, surface water, air, direct contact, and fire/explosion.

The EPA and state agencies seek to identify potentially responsible parties(PRP) and ultimately Responsible Parties (RP) who can be required to finance cleanup activities, either directly or through reimbursement of federal Superfund expenditures.

*No listings within 1 mile radius of the subject site.*

**NFRAP**      No Further Remedial Action Planned sites (CERCLIS)

As of February 1995, CERCLIS sites designated 'No Further Remedial Action Planned' NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

EPA has removed these NFRAP sites from CERCLIS to lift unintended barriers to the redevelopment of these properties. This policy change is part of EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens promote economic redevelopment of unproductive urban sites.

This list has been researched within 1 mile radius of the subject site.

Site:            FEDERAL-MOGUL CORP ARROWHEAD P  
Address:       4411 KATELLA AVE  
City:           LOS ALAMITAS  
Map Loc:      23 - about .79 mile W of the subject  
Status:        EPA ID#: CAD008302002

Discovery of this Hazardous Waste site was brought to EPA's attention on 12/01/87. The Preliminary Assessment, consisting of collecting and documenting existing information about the source and nature of the site hazard was completed on 03/22/90. On 06/07/91, a screening Site Inspection was completed, collecting site data and samples to characterize the severity of the hazard to support the ranking and enforcement of the clean-up required.

**FEDFAC**      Federal Facilities

As part of the CERCLA program, federal facilities with known or suspected environmental problems, the Federal Facilities Hazardous Waste Compliance Docket is tracked separately to comply with a Federal Court order.

*No listings within 1 mile radius of the subject site.*

**ERNS**        Emergency Response Notification System

The ERNS is a national computer database used to store information on unauthorized releases of oil and hazardous substances. The program is a cooperative effort of the Environmental Protection Agency, the Department of Transportation Research and Special Program Administration's John Volpe National Transportation System Center and the National Response Center.

There are primarily five Federal statutes that require release reporting the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 103; the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304; the Clean Water Act of 1972(CWA) section 311(b)(3); and the Hazardous Material Transportation Act of 1974(HMTA section 1808(b).

*No listings within a quarter of a mile radius of the subject site.*

HMIRS Hazardous Material Incident Report System

The Hazardous Material Report Incident Report Subsystem HMIRS of the Research and Special Programs Administration (RSPA) Hazardous Material Information System was established in 1971 to fulfill the requirements of the Federal hazardous material transportation law. Part 171 of Title 49, Code of Federal Regulations (49 CFR) contains the incident reporting requirements of carriers of hazardous materials. An unintentional release of hazardous materials meeting the criteria set forth in Section 171.16, 49 CFR, must be reported on DOT Form 5800.1. The data from the reports received are subsequently entered in the HAZMAT database.

*No listings within the street address of the subject site.*

SETS Site Enforcement Tracking System (SETS)

When expanding Superfund monies at a CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) Site, EPA must conduct a search to identify parties with potential financial responsibility for remediation of uncontrolled hazardous waste sites. EPA regional Superfund Waste Management Staff issue a notice letter to the potentially responsible party (PRP). The status field contains the EPA ID number and name of the site where the actual pollution occurred.

*No listings within a quarter of a mile radius of the subject site.*

DO Enforcement Docket System (DOCKET)/Consent Decree Tracking System (CDETS)

DOCKET tracks civil judicial cases against environmental polluters, while CDETS processes court settlements, called consent decrees.

*No listings within a quarter of a mile radius of the subject site.*

CD Criminal Docket System (C-DOCKET)

The Criminal Docket System is a comprehensive automated system for tracking criminal enforcement actions. C-Docket handles data for all environmental statutes and tracks enforcement actions from the initial stages of investigations through conclusion.

---

*No listings within a quarter of a mile radius of the subject site.*

RCRA RCRA Violators List (CORRACTS)

The Resource Conservation and Recovery Act of 1976 provides for "cradle to grave" regulation of hazardous wastes. RCRA requires regulation of hazardous waste generators, transporters, and storage/treatment/disposal sites. Evaluation to potential violations, ranging from manifest requirements to hazardous waste discharges, is typically conducted by the US EPA. This database is also known as Corrective Action Report (CORRACTS)

If enforcement is required, it is typically delegated to a state agency.

*No listings within half of a mile radius of the subject site.*

RCRA-D Resource Conservation and Recovery Information System - Treatment, Storage & Disposal

The Environmental Protection Agency regulates the treatment, storage and disposal of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste TSD facilities are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form as well as part A (EPA form 8700-23) and Part B of their Hazardous Waste Permit Application.

Status Codes: I	Incinerator
T	Storage/Treatment facility other than Incinerator
D	Land Disposal Facility

*No listings within 1 mile radius of the subject site.*

FD Federal Enforcement Dockets

The US EPA, Office of Enforcement, maintains a list of sites under enforcement by the US EPA.

*No listings within a quarter of a mile radius of the subject site.*

## CALIFORNIA STATE SOURCES

AW Annual Work Plan (previously known as Bond Expenditure Plan)

The California Health and Safety code, as amended by AB 129, requires the California Environmental Protection Agency to develop a site-specific expenditure plan as the basis for an appropriation of California Hazardous Substance Cleanup Bond Act of 1984 funds.

The Agency is also required to update the report annually and report any significant adjustments to the Legislature on an ongoing basis. The plan identifies California hazardous waste sites targeted for cleanup by responsible parties, the California and the Federal Environmental Protection Agency over the next five years.

Status Codes:	BKLG	Backlog, Potential Annual Work Plan Site
	AWP	Active Annual Work Plan site
	COM	Certified, but still in Operation & Maintenance mode
	CERT	Certified after remediation
	DLST	Delisted from the AWP
	REFRC	Former AWP site referred to RCRA
	REFRW	Former AWP site referred to the Regional Water Quality Board

*No listings within 1 mile radius of the subject site.*

#### CALS CALSITES

The Site Mitigation and Brownfields Reuse Database (CALSITES) identifies certain potential hazardous waste sites. The identification of these sites were generally not made via sampling and site characterization, they were made as a result of file searches and windshield surveys. Some of the sites may have had a site inspection with sampling.

The information has been compiled into this database by the California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in accordance with Section 25359.6 of the California Health and Safety Code.

This database was previously known as The Abandoned Sites Program Information System ASPIS.

Status Codes:	PEARL	Preliminary Endangerment Assessment Required,Low priority
	PEARM	Preliminary Endangerment Assessment Required,Medium priority
	PEARH	Preliminary Endangerment Assessment Required,High priority
	SSR	Site Screening Required
	HRR	Hazard Ranking Required
	PRPR	Potential Responsible Party Search Required
	EPA	EPA is the lead agency
	RCRA	Mitigated under the RCRA permitting program
	RWQCB	Mitigated under the lead of the Regional Water Quality Board
	CNTY	County lead
	OAL	Other Agency lead

*No listings within half of a mile radius of the subject site.*

#### VCP Voluntary Cleanup Program

This category contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Status Codes:	VCP	Property with either confirmed or unconfirmed releases and project proponents have requested that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSCs costs.
	VCOMP	The scope of work in the VCP Agreement has been completed.
	PEAP	Preliminary Endangerment Assessment in Progress.
	NFA	No Further Action Required
	VTerm	VCP agreement Terminated was terminated prior to the completion of the scope of work in the agreement.
	BZHW	Border Zone/Hazardous Waste Properties chapter 6.5 of the Health and Safety Code, commencing with section 25220.
	COM	Certified, but still in Operation & Maintenance mode
	CERT	Certified after remediation
	HWDLU	Hazardous Waste Disposal Land Use with a voluntary deed restrictions.
	NA	CalMortgage Properties. DTSC is conducting a Phase I Assessment

*No listings within half of a mile radius of the subject site.*

#### FE Properties Needing Further Evaluation

This category of The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process.

Status Codes:	PEAP	Preliminary Endangerment Assessment (PEA) in Progress
	PEAR	Preliminary Endangerment Assessment (PEA) is Required
	RR	Removal Action Required

*No listings within half of a mile radius of the subject site.*

#### REF Referred Unconfirmed Properties

This category of The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Status Codes:	REFRW	Referred to Regional Water Quality Control Board
	REFRC	Referred to DTSC's Hazardous Waste Program (RCRA).
	REFOA	Referred to other agencies.

*No listings within half of a mile radius of the subject site.*

#### CALS CALSITES - No Further Action

This section includes the sites on the Calsite list, which have been flagged for no further action by the California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in accordance with Section 25359.6 of the California Health and Safety Code.



Status Codes: NFA No Further Action for DTSC  
RED Closed Case marked for removal from list

This list has been researched within a quarter of a mile radius of the subject site.

Site: M.M.I.  
Address: 11222 VIA EL MERCADO  
City: LOS ALAMITOS  
Map Loc: 9 - about .22 mile SE of the subject  
Status: id: 3030008905181987 30C 00 00  
FACILITY DRIVE-BY FIBERGLASS FIRM - HAS A DISCERNIBLE ODOR OF KETO FACILITY IDENTIFIED  
DRIVEBY (06/17/82)  
FINAL STRATEGY SITE REFERRED) TO A.Q.M.D. ENFORCEMENT (08/01/82) SITE SCREENING DONE  
PA RECOM DUE TO LACK OF INFO ABOUT ENFORCEMENT H)  
ISTORY (05/18/87)  
NE SOLVENT. 18 55-GAL. DRUMS OF POLYESTER RESIN IN A FENCED YARD. INDUSTRIAL PROCESS  
OCCURS OUTDOORS. (06/18/82)

#### CORTESE State of California Office of Planning and Research

This database is a consolidation of information from various sources. It is maintained by the State Office of Planning and Research and lists potential and confirmed hazardous waste or substances sites.

Facilities that have been reported elsewhere in this report will not be included in the listing below.

Status Codes: WRCBT Tank leaks.  
Compiled by Water Resource Control Board  
DHS1 Abandoned hazardous waste site.  
Compiled by Toxic Substance Control Div. of DHS  
DHS2 Contaminated public water drinking wells serving less than 200 connections.  
Compiled by Env. Health Div. of DHS  
DHS3 Contaminated public water drinking wells serving more than 200 connections  
DHS5 Sites pursuant to section 25356 of the Health and Safety Code (see BEP)  
CWMB Solid waste disposal sites with known migration of hazardous waste

*No listings within half of a mile radius of the subject site.*

#### LUST Leaking Underground Storage Tanks - California State

The Leaking Underground Storage Tanks Information System is maintained by the State Water Resource Board pursuant to Section 25295 of the Health and Safety Code.

Status Codes: 0 No action  
1 Leak being confirmed  
3A Prel site assessment workplan submitted  
3B Prel site assessment underway  
5C Pollution characterization

5R	Remediation plan
7	Remedial action underway
8	Post remedial action monitoring
9	Case closed
P	Case purged from agency list

This list has been researched within half of a mile radius of the subject site.

Site: AFRC BLDG 27,34,158,43,25,2,37  
Address: AFRC LOS ALAMITOS  
City: LOS ALAMITOS  
Map Loc: 20 - about .55 mile SW of the subject  
Status: 5C - Pollution characterization.  
It was discovered during tank closure. The aquifer is potentially impacted. The case, 05900572, is managed by the Regional Water Quality Board.

EMGR. GENERATOR FUEL SUPPLY TANK, 1-2,000 GAL STEEL, UST REMOVED AND SITE RESTORED TO GR

Site: AFRC POST HEADQUARTERS  
Address: AFRC LOS ALAMITOS BLD #57  
City: LOS ALAMITOS  
Map Loc: 21 - about .55 mile SW of the subject  
Status: INACT -

Site: AFRC FUEL FARM #89  
Address: AFRC LOS ALAMITOS BLD#201  
City: LOS ALAMITOS  
Map Loc: 21 - about .55 mile SW of the subject  
Status: 3B - Prelim Site Assessment underway.  
The aquifer is potentially impacted. The free product floating on the water table will be removed. The site is remediated by vacuum extracting by means of pump or blowers. The case, 05900553, is managed by the Regional Water Quality Board.

FORMER JP-4 & AV GAS TANK FARM, 3 REMOVED-210,000 GAL USTS 87(A), 88(B) & 89(C)

Site: AFRC BUILDING 244  
Address: AFRC LOS ALAMITOS BLD#244  
City: LOS ALAMITOS  
Map Loc: 21 - about .55 mile SW of the subject  
Status: 1 - Leak being confirmed.  
It was discovered during tank closure. Only the soil is impacted. The case, 05901297, is managed by the Regional Water Quality Board.

GASOLINE STATION, 3-10,000 GAL. FIBERGLASS USTS & 500 GAL. WASTE UST

Site: ORANGE CO FIRE STATION # 17  
Address: 4991 CERRITOS AVE  
City: CYPRESS  
Map Loc: 19 - about .53 mile NW of the subject  
Status: 9 - Case Closed.  
A release from a tank, of Diesel was reported. It was, and stopped by closing the tank. The case, 05902092, is managed by a Local agency.

Monitoring well: MW-1 active  
lat/long: 33.78910780/-117.94130970  
depth to gw: 5.75 - 5.75

Monitoring well: MW-1 active  
lat/long: 33.78910780/-117.94130970  
depth to gw: 4.04 - 6.76

Monitoring well: MW-2 active  
lat/long: 33.81070240/-118.04639190  
depth to gw: 3.77 - 6.13  
sample data: EBZ ND 0 UG/L 2004-03-11 (max 4.9 UG/L 2002-06-19)  
GRO 72 UG/L 2004-03-11 (max 333 UG/L 2002-06-19)  
MTBE 35.7 UG/L 2004-03-11  
TBA ND 0 UG/L 2004-03-11 (max 15.6 UG/L 2003-06-23)  
XYLENES ND 0 UG/L 2004-03-11 (max 11.3 UG/L 2002-06-19)

Monitoring well: MW-3 active  
lat/long: 33.81076040/-118.04638680  
depth to gw: 4.17 - 6.49  
sample data: BZ ND 0 UG/L 2004-03-11 (max 1.6 UG/L 2002-12-18)  
GRO 79 UG/L 2004-03-11 (max 324 UG/L 2003-06-23)  
MTBE 46.4 UG/L 2004-03-11

Monitoring well: MW-4 active  
lat/long: 33.810656/-118.04639250  
depth to gw: 3.99 - 6.3  
sample data: GRO ND 0 UG/L 2004-03-11 (max 321 UG/L 2003-06-23)  
MTBE ND 0 UG/L 2004-03-11 (max 337 UG/L 2003-06-23)  
TBA ND 0 UG/L 2004-03-11 (max 14 UG/L 2003-09-11)

Monitoring well: MW-5 active  
lat/long: 33.81044310/-118.04638860  
depth to gw: 3.7 - 6.08

Monitoring well: MW-6 active  
lat/long: 33.81069660/-118.04632440  
depth to gw: 4.37 - 6.62  
sample data: GRO ND 0 UG/L 2004-03-11 (max 1520 UG/L 2003-06-23)  
MTBE ND 0 UG/L 2004-03-11 (max 1120 UG/L 2003-06-23)

Monitoring well: MW-7 active  
lat/long: 33.81081160/-118.04634370  
depth to gw: 4.46 - 6.81  
sample data: GRO ND 0 UG/L 2004-03-11 (max 342 UG/L 2003-12-09)  
MTBE ND 0 UG/L 2004-03-11 (max 333 UG/L 2003-12-09)

Monitoring well: MW-8 active  
lat/long: 33.81076810/-118.04650360  
depth to gw: 4.14 - 6.45  
sample data: MTBE ND 0 UG/L 2004-03-11 (max 4.6 UG/L 2003-06-23)

Site: HRAKO SERVICE CENTER  
Address: 5001 CERRITOS AVE  
City: CYPRESS  
Map Loc: 18 - about .49 mile N of the subject  
Status: 9 - Case Closed.

A release from a tank, of Gasoline was reported. It was discovered during tank closure, and stopped by closing the tank. The case, 05901416, is managed by a Local agency.

Monitoring well: EW-2 active  
lat/long: 33.67657580/-117.75886360  
depth to gw: 4.08 - 4.08

Monitoring well: EW-5 active  
lat/long: 33.67657580/-117.75886360  
depth to gw: 3.84 - 3.84

Monitoring well: MW-1 active  
lat/long: 33.67657580/-117.75886360  
depth to gw: 6.56 - 6.56

Monitoring well: MW-10 active  
lat/long: 33.67657580/-117.75886360  
depth to gw: 5.12 - 5.12  
sample data: MTBE 2.3 UG/L 2001-12-11

Monitoring well: MW-5 no access  
lat/long: 33.67657580/-117.75886360  
depth to gw: 0 - 0

Monitoring well: MW-9 active  
lat/long: 33.67657580/-117.75886360  
depth to gw: 4.42 - 4.42

Site: CYPRESS GOLF CLUB  
Address: 4921 KATELLA AVE  
City: CYPRESS  
Map Loc: 13 - about .26 mile W of the subject  
Status: 3B - Prelim Site Assessment underway.  
A release from a tank, of Gasoline was reported. It was discovered during tank closure, and stopped by closing the tank. The case, 05997341, is managed by a Local agency.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: 9 - Case Closed.  
A release from a tank, of Gasoline was reported. It was discovered during tank closure, and stopped by closing the tank. Only the soil is impacted. The case, 05902069, is managed by a Local agency.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: 9 - Case Closed.  
A release from a tank, of Gasoline was reported. It was discovered during tank closure, and stopped by closing the tank. The case, 05900836, is managed by a Local agency.

Site: UNOCAL SERVICE STATION #5511  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject  
Status: 7 - Remedial Action underway.  
A release from a tank, of Gasoline was reported. It was discovered during tank closure, and stopped by installing a new tank. The case, 05900471, is managed by a Local agency.

Monitoring well: BC-1 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.12 - 6.55  
free product: -4 (2005-03-17 00:00:00)  
sample data: MTBE 33 UG/L 2003-11-20  
PHCG 93 UG/L 2003-11-20

Monitoring well: BC-10 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.95 - 7.51  
sample data: MTBE ND 0 UG/L 2003-11-20 (max 2.7 UG/L 2001-10-03)

Monitoring well: BC-11 no access  
lat/long: 33.71603670/-117.97229610  
depth to gw: 0 - 5.9  
sample data: BZ 27 UG/L 2003-04-25 (max 65 UG/L 2001-10-03)  
BZME 1.6 UG/L 2003-04-25 (max 2.6 UG/L 2001-10-03)  
EBZ 6 UG/L 2003-04-25 (max 21 UG/L 2001-10-03)  
MTBE 150 UG/L 2003-04-25 (max 580 UG/L 2002-01-07)  
PHCG 440 UG/L 2003-04-25 (max 680 UG/L 2001-10-03)  
TBA 320 UG/L 2003-04-25 (max 690 UG/L 2001-10-03)  
XYLENES 6.2 UG/L 2003-04-25 (max 9.6 UG/L 2001-10-03)

Monitoring well: BC-12 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 4.59 - 7.96  
sample data: DIPE ND 0 UG/L 2003-11-20 (max 1.5 UG/L 2001-10-03)

Monitoring well: BC-18 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.94 - 8.05

Monitoring well: BC-20 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 4.85 - 8.71  
sample data: MTBE ND 0 UG/L 2003-11-20 (max 15 UG/L 2002-01-07)  
PHCG ND 0 UG/L 2003-11-20 (max 140 UG/L 2002-07-12)  
TBA ND 0 UG/L 2003-11-20 (max 72 UG/L 2002-01-07)

Monitoring well: BC-23 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 4.07 - 7.41  
sample data: BZ 7.6 UG/L 2003-11-20  
BZME 3.3 UG/L 2003-11-20  
EBZ .6 UG/L 2003-11-20  
MTBE 65 UG/L 2003-11-20 (max 100 UG/L 2002-04-08)  
PHCG 140 UG/L 2003-11-20  
TBA 68 UG/L 2003-11-20 (max 550 UG/L 2001-10-03)  
XYLENES 2.9 UG/L 2003-11-20

Monitoring well: BC-24 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 4.48 - 7.61  
sample data: BZ 2.4 UG/L 2003-11-20  
BZME 1.3 UG/L 2003-11-20  
MTBE 28 UG/L 2003-11-20 (max 110 UG/L 2001-10-03)  
PHCG 180 UG/L 2003-11-20 (max 270 UG/L 2002-01-07)  
TBA 54 UG/L 2003-11-20 (max 240 UG/L 2001-10-03)  
XYLENES 1.4 UG/L 2003-11-20

Monitoring well: BC-25 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 2.6 - 7.39  
sample data: BZ 4.6 UG/L 2003-11-20  
BZME 3.5 UG/L 2003-11-20 (max 6.2 UG/L 2002-04-08)  
EBZ ND 0 UG/L 2003-11-20 (max .78 UG/L 2002-04-08)  
PHCG 110 UG/L 2003-11-20  
XYLENES 2.9 UG/L 2003-11-20 (max 4.1 UG/L 2002-04-08)

Monitoring well: BC-5 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 4.13 - 7.59  
sample data: BZ 56 UG/L 2003-11-20  
BZME 25 UG/L 2003-11-20  
DIPE ND 0 UG/L 2003-11-20 (max 2 UG/L 2001-10-03)  
EBZ 18 UG/L 2003-11-20  
MTBE .63 UG/L 2003-11-20 (max 1.2 UG/L 2003-04-25)  
PHCG 650 UG/L 2003-11-20  
XYLENES 54 UG/L 2003-11-20

Monitoring well: BC-7 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.25 - 7.43  
sample data: BZ 4.1 UG/L 2003-11-20 (max 14 UG/L 2001-10-03)  
BZME 1.2 UG/L 2003-11-20  
EBZ ND 0 UG/L 2003-11-20 (max .55 UG/L 2001-10-03)  
MTBE 2.7 UG/L 2003-11-20 (max 4.1 UG/L 2001-10-03)  
PHCG 120 UG/L 2003-11-20  
TBA 36 UG/L 2003-11-20 (max 74 UG/L 2002-07-12)  
XYLENES 2 UG/L 2003-11-20 (max 2.6 UG/L 2001-10-03)

Monitoring well: BC-9 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.54 - 7.91  
sample data: MTBE ND 0 UG/L 2003-11-20 (max 16 UG/L 2002-10-29)  
XYLENES ND 0 UG/L 2003-11-20 (max 1.4 UG/L 2001-10-03)

Monitoring well: MW-28 no access  
lat/long: 33.71603670/-117.97229610  
depth to gw: 0 - 4.75  
sample data: BZ 5300 UG/L 2003-04-25 (max 14000 UG/L 2002-07-12)  
BZME 1500 UG/L 2003-04-25 (max 4600 UG/L 2002-04-08)  
EBZ 620 UG/L 2003-04-25 (max 810 UG/L 2002-10-29)  
MTBE 25000 UG/L 2003-04-25 (max 38000 UG/L 2002-01-07)  
PHCG 65000 UG/L 2003-04-25 (max 110000 UG/L 2001-10-03)  
TAME 38 UG/L 2003-04-25 (max 62 UG/L 2001-10-03)  
TBA 21000 UG/L 2003-04-25 (max 52000 UG/L 2002-01-07)  
XYLENES 2900 UG/L 2003-04-25 (max 8100 UG/L 2001-10-03)

Monitoring well: MW-29 no access  
lat/long: 33.71603670/-117.97229610  
depth to gw: 0 - 5.35  
sample data: BZ 1900 UG/L 2003-04-25 (max 9100 UG/L 2002-07-12)  
BZME 210 UG/L 2003-04-25 (max 2700 UG/L 2001-10-03)  
EBZ 18 UG/L 2003-04-25 (max 210 UG/L 2002-10-29)  
MTBE 1800 UG/L 2003-04-25 (max 14000 UG/L 2002-07-12)  
PHCG 12000 UG/L 2003-04-25 (max 33000 UG/L 2002-01-07)  
TBA 38000 UG/L 2003-04-25  
XYLENES 1000 UG/L 2003-04-25 (max 4000 UG/L 2001-10-03)

Monitoring well: MW-30 no access  
lat/long: 33.71603670/-117.97229610  
depth to gw: 0 - 5.5  
sample data: BZ 22000 UG/L 2003-04-25 (max 23000 UG/L 2002-07-12)  
BZME 13000 UG/L 2003-04-25  
EBZ 1300 UG/L 2003-04-25 (max 1700 UG/L 2002-10-29)  
MTBE 56000 UG/L 2003-04-25 (max 63000 UG/L 2002-07-12)  
PHCG 100000 UG/L 2003-04-25 (max 140000 UG/L 2002-10-29)  
TBA 72000 UG/L 2003-04-25 (max 81000 UG/L 2002-01-07)  
XYLENES 14000 UG/L 2003-04-25

Monitoring well: MW-31 active  
lat/long: 33.71603670/-117.97229610  
depth to gw: 3.4 - 7.7  
sample data: MTBE ND 0 UG/L 2003-11-20 (max 1.8 UG/L 2001-10-03)

Monitoring well: MW-32 active

lat/long: 33.71603670/-117.97229610  
depth to gw: 2.45 - 6.56

Monitoring well: MW-33 no access

lat/long: 33.71603670/-117.97229610

depth to gw: 0 - 6.02

sample data:	BZ	6700 UG/L 2003-04-25 (max 8600 UG/L 2002-07-12)
	BZME	1100 UG/L 2003-04-25 (max 1500 UG/L 2002-01-07)
	EBZ	520 UG/L 2003-04-25 (max 580 UG/L 2002-01-07)
	MTBE	1000 UG/L 2003-04-25 (max 2500 UG/L 2002-07-12)
	PHCG	23000 UG/L 2003-04-25 (max 36000 UG/L 2002-01-07)
	TBA	3200 UG/L 2003-04-25 (max 6300 UG/L 2002-01-07)
	XYLENES	2000 UG/L 2003-04-25 (max 3700 UG/L 2002-01-07)

#### SWIS Solid Waste Information System

As legislated under the Solid Waste Management and Resource Recovery Act of 1972, the California Waste Management Board maintains lists of certain facilities, i.e. Active solid waste disposal sites, Inactive or Closed solid waste disposal sites and Transfer facilities.

This list has been researched within 1 mile radius of the subject site.

Site: ARMED FORCES RESERVE CTR LF  
Address: LEXINGTON & FARQUHART  
City: LOS ALAMITOS  
Map Loc: 22 - about .79 mile W of the subject  
Status: id: 30-AB-0029

Unit: 01  
Activity: SOLID WASTE DISPOSAL SITE  
Status: CLOSED (Operational)  
PERMITTED (Regulatory)  
Inspection: QUARTERLY

Waste: CONSTRUCTION/DEMOLITION, GREEN MATERIALS, INDUSTRIAL, INERT, METALS, MIXED MU

MUNICIPAL TIRES

Acreage: 19 (total)  
Closure: 12/31/88 ESTIMATED  
Owner: CALIFORNIA ARMY NATIONAL GUARD  
4216 CONSTITUTION AVENUE  
LOS ALAMITOS CA  
562-7952821

#### WIP Well Investigation Program

The Well Investigation Program (AB1803) identifies groundwater that is already contaminated and empowers the California Department of Health Services and local health officers to order ongoing monitoring programs. The focus of this program is to monitor and protect drinking water.

This list has been researched within 1 mile radius of the subject site.

Site: WELL 01 dhs3  
Address: LOS ALAMITOS RACE COURSE  
City: 04S/11W-20R02 S  
Map Loc: 3 - about .11 mile NW of the subject

Status: 4.0 ppb of CHLOROFORM (action level 100.0) was reported on 09/24/87 by DHS-AB1803.

WQ Drinking Water Program

The California Health and Safety Code section 116275-116300 stipulates that it is the intent of the Legislature to improve laws governing drinking water quality to improve upon the minimum requirements of the federal Safe Drinking Water Act Amendments of 1986, to establish primary drinking water standards that are at least as stringent as those established under the federal Safe Drinking Water Act, and to establish a program under this chapter that is more protective of public health than the minimum federal requirements.

In order to provide for the orderly and efficient delivery of safe drinking water the State Department of Health Services collect information on the quality of public drinking water wells under the California Drinking Program.

Below, the latest and maximum analysis of contaminants are reported (only positive reading are included). MCL is the Maximum Contaminant Level or enforceable drinking water standard. RPHL is the Recommended Public Health Level. Additional information is available upon request.

This list has been researched within half of a mile radius of the subject site.

Owner: LOS ALAMITOS RACE COURSE/  
Well: WELL 01 DOMESTIC WELL  
WellNo: 04S/11W-20R02 S  
Map Loc: 15 - about .29 mile NW of the subject  
Status: AU - Active Untreated

WATER QUALITY:

	units	latest	maximum	MCL/RPHL
SPECIFIC CONDUCTANCE	US	526 3/1/100	526 3/1/100	2200/-
PH, LABORATORY		8 3/1/100	8.5 5/8/97	
ALKALINITY (TOTAL) AS CaCO3	MG/L	183 3/1/100	183 3/1/100	
BICARBONATE ALKALINITY	MG/L	223 3/1/100	223 3/1/100	
CARBONATE ALKALINITY	MG/L	1.7 5/8/97	1.7 5/8/97	
NITRITE (AS N)	UG/L	2 1/10/1	2 1/10/1	1000/-
HARDNESS (TOTAL) AS CaCO3	MG/L	222 11/13/1	222 11/13/1	
CALCIUM	MG/L	64.4 11/13/1	64.4 11/13/1	
MAGNESIUM	MG/L	14.9 11/13/1	14.9 11/13/1	
SODIUM	MG/L	38.8 11/13/1	38.8 11/13/1	
POTASSIUM	MG/L	2.9 11/13/1	3 3/1/100	
CHLORIDE	MG/L	23 3/1/100	23 3/1/100	600/-
SULFATE	MG/L	50 3/1/100	50 3/1/100	600/-
FLUORIDE (TEMP DEPENDENT)	MG/L	.33 5/8/97	.33 5/8/97	1.7/-
ARSENIC	UG/L	4 3/1/100	8.2 5/8/97	50/-
BORON	UG/L	250 11/13/1	250 11/13/1	
IRON	UG/L	160 11/13/1	200 3/1/100	300/-
GROSS ALPHA	PCI/L	8.55 12/16/98	8.55 12/16/98	15/-
GROSS ALPHA COUNTING ERROR	PCI/L	1.55 12/16/98	1.74 5/13/94	
URANIUM (PCI/L)	PCI/L	4.35 12/16/98	4.35 12/16/98	20/-
CHLOROFORM (THM)	UG/L	4 9/24/87	4 9/24/87	100/-
TOTAL DISSOLVED SOLIDS	MG/L	312 3/1/100	312 3/1/100	1500/-
TURBIDITY, LABORATORY	NTU	.4 5/8/97	.4 5/8/97	5/-
URANIUM COUNTING ERROR	PCI/L	.98 12/16/98	.98 12/16/98	



SCH School Property Evaluation Program Properties

This category of The Site Mitigation and Brownfields Reuse Program Database (SMBRPD) 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.

Status Codes:	VCP	Active school property where DTSC has entered into a VCP Agreement.
	PEAR	Preliminary Endangerment Assessment (PEA) required.
	PEAP	Preliminary Endangerment Assessment (PEA) in Progress
	VCOMP	The scope of work in the VCP Agreement has been completed.
	NA	No Action - potential school property where a Phase I has been completed.
	NFA	The property does not pose a problem to the public health or the environment.
	CERT	The potential school property was previously identified as a confirmed release site and it has been subsequently certified by DTSC as having been remediated satisfactorily under DTSC oversight.

*No listings within a quarter of a mile radius of the subject site.*

REGIONAL SOURCES

NT Toxic Releases

The California Regional Water Quality Control Boards or local Department of Health Services keeps track of toxic releases to the environment. These lists are known as Unauthorized Releases, Spill, Leaks, Investigations and Cleanups (SLIC), Non-Tank Releases, Toxics List or similar, depending on the local agency.

*No listings within half of a mile radius of the subject site.*

TPC Toxic Pits

The Toxic Pits Clean-Up Act (Katz Bill) places strict limitations on the discharge of liquid hazardous wastes into surface impoundment, toxic ponds, pits and lagoons. Regional Water Quality Control Boards are required to inspect all surface impoundment annually, in addition, every facility was required to file a Hydrogeological Assessment Report. Recent legislation allows the Department of Health Services to exempt facilities that closed on or before December 31, 1985, if a showing is made that no significant environmental risk remains (AB1046).

Special exemption provisions have been created for surface impoundment that receive mining wastes.

---

This list has been researched within 1 mile radius of the subject site.

Site: LOS ALAMITOS AFRC  
Address: AFRC LOS ALAMITOS  
City: LOS ALAMITOS  
Map Loc: 20 - about .55 mile SW of the subject  
Status:

#### SWAT Solid Waste Assessment Test - Regional

This program, provided for under the Calderon legislation (Section 13273 of the Water Code), requires that disposal sites with more than 50,000 cubic yards of waste provide sufficient information to the regional water quality control board to determine whether or not the site has discharged hazardous substances which will impact the environment.

Site operators are required to file Solid Waste Assessment Test reports on a staggered basis. Operators of the 150 highest ranking (Rank 1) sites were required to submit Solid Waste Assessment Tests by July 1, 1987, Rank 2 in 1988 and so on.

Operators submit water quality tests to the Regional Water Quality Control Board, describing surface and groundwater quality and supply; and the geology within 1 mile of the site. Air quality tests are submitted to the local Air Quality Management District or Air Pollution Control District.

This program is currently not funded and thus not updated.

Status Codes: Facilities or sites are ranked within each region on a scale 1-15 according to priority.

*No listings within 1 mile radius of the subject site.*

## OPERATING PERMITS

Various agencies issue operating permits or regulate the handling, movements, storage and disposal of hazardous materials and require mandatory reporting. The inclusion in this section does not imply that an environmental problem exists presently or has in the past.

#### RCRA-G Resource Conservation and Recovery Information System - Generators

The Environmental Protection Agency regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. The notification form provides basic identification information and specific waste activities.

Status Codes: L - Generators who generate at least 1000 kg/mo of non-acutely hazardous waste  
(or 1 kg/mo of acutely hazardous waste).  
S - Generators who generate 100 kg/mo but less than 1000 kg/mo of non-acutely haz waste.  
T - Transporter.

This list has been researched within a quarter of a mile radius of the subject site.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: S - Small Generator  
Permit id#: CAD981684483  
Activities at this facility include:  
Racetracks  
Racetracks

Site: UNOCAL SVC STA #5511  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject  
Status: Permit id#: CAD981643919

Site: TOSCO 05680  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject  
Status: L - Large Generator  
Permit id#: CAL000169176  
Activities at this facility include:  
Other Gasoline Stations

Site: TILOS EUROPEAN AUTOHAUS  
Address: 5300 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 4 - about .13 mile E of the subject  
Status: N - Non Notifier  
Permit id#: CAR000078394

Site: COSTCO WHOLESALE NO 748  
Address: 5401 KATELLA AVE  
City: CYPRESS  
Map Loc: 8 - about .2 mile E of the subject  
Status: S - Small Generator  
Permit id#: CAR000160200  
Activities at this facility include:  
One-Hour Photofinishing  
Other Gasoline Stations

Site: AERO TRACE  
Address: 11021 VIA EL MERCADO  
City: LOS ALAMITOS  
Map Loc: 6 - about .2 mile E of the subject  
Status: Permit id#: CAD982316846

Site: K&A IMPORTS  
Address: 11061 WINNERS CIR  
City: LOS ALAMITOS  
Map Loc: 2 - about .11 mile SE of the subject  
Status: S - Small Generator  
Permit id#: CAD981443161

Site: K & A IMPORT SERVICES  
Address: 11061 WINNERS CIR  
City: LOS ALAMITOS  
Map Loc: 2 - about .11 mile SE of the subject  
Status: S - Small Generator  
Permit id#: CAD981445026

SARA SARA Title III,section 313 (TRIS)

Title III of the Superfund Amendments and Reauthorization Act,Section 313, also known as Emergency Planning and Community Right-to-Know Act of 1986 requires owners or operators of facilities with more than 10 employees and are listed under Standard Industrial Classification(SIC) Codes 20 through 39 to report the manufacturing, processing or use of more than a threshold of certain chemical or chemical categories listed under section 313. This data base is also known as Toxic Release Information System (TRIS).

Below summary information for the last five year period is reported grouping the releases into air, water, underground injection, land, public offsite treatment (potw) and transportation offsite.

*No listings within a quarter of a mile radius of the subject site.*

NC Nuclear Regulatory Commission Licensees

The Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards has been mandated (10 CFR Ch 1.42) to protect the public health and safety, the common defense and security, and the environment by licensing, inspection, and environmental impact assessment for all nuclear facilities and activities, and for the import and export of special nuclear material.

*No listings within a quarter of a mile radius of the subject site.*

PCB PCB Waste Handlers Database

The U.S. Environmental Protection Agency tracks generators, transporters, commercial stores and/or brokers and disposers of PCB's in accordance with the Toxic Substance Control Act.

*No listings within 1 mile radius of the subject site.*

PCS Permit Compliance System

PCS is a database which contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS was developed by The U.S. Environmental Protection Agency to meet the information needs of the NPDES program under the Clean Water Act. PCS tracks permit, compliance, and enforcement states of NPDES facilities.

This list has been researched within a quarter of a mile radius of the subject site.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: Permit id#: CAD981684483  
SIC Codes: 7948

AFS AIRS Facility System

AFS contains emissions and compliance data on air pollution point sources tracked by the U.S. EPA and state and local environmental regulatory agencies. There are seven "criteria pollutants" for which data must be reported to EPA and stored in AIRS: PM10 (particulate matters less than 10 microns in size), carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, reactive volatile organic compounds (VOC), and ozone.

AFS replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aeromatic Data (SAROAD).

*No listings within a quarter of a mile radius of the subject site.*

PE Section Seven Tracking System (SSTS)

SSTS evolved from the FIFRA and TSCA Enforcement System (FATES). SSTS tracks the registration of all pesticide producing establishments and tracks annually the types and amounts of pesticides, active ingredients, and devices that are produced, sold or distributed each year.

*No listings within a quarter of a mile radius of the subject site.*

FIFRA FIFRA/TSCA Tracking System/ National Compliance Database (FTTS/NCDB)

NCDB supports implementation of the Federal Insecticide, Fungicide and Rodenticide Control Act (FIFRA) and the Toxic Substance Control Act (TSCA).

This list has been researched within a quarter of a mile radius of the subject site.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: Permit id#: CAD981684483  
SIC Codes: 7948

FFIS Federal Facilities Information System (FFIS)

Federal Facilities Information System (FFIS) contains a list of all Treatment Storage and Disposal Facilities (TSDs) owned and operated by federal agencies.

*No listings within a quarter of a mile radius of the subject site.*

CICIS Chemicals in Commerce Information System (CICIS)

Chemicals in Commerce Information System contains an inventory of chemicals manufactured in commerce or imported for Toxic Substances Control Act regulated commercial purposes. CICIS allows EPA to maintain a comprehensive listing of over 70,000 chemical substances that are manufactured or imported and are regulated under TSCA.

*No listings within a quarter of a mile radius of the subject site.*

FINDS FINDS EPA Facility Index System

The U.S. Environmental Protection Agency maintains an index system of all facilities which are regulated or have been assigned an identification number for other purposes.

Facilities that have been reported elsewhere in this report will not be listed under this category.

*No listings within a quarter of a mile radius of the subject site.*

HWIS Hazardous Waste Information System

The Department of Toxic Substance Control, California Environmental Protection Agency, maintains a data base keeping track of the movement and disposal of hazardous waste. The data is used to support the Tanner legislation, AB 2948.

Status Codes: EPA Facility Permit Number

CAL - State permanent number

CAC - State provisional or emergency number

CAH - State prov or perm number for household hazardous waste collections

CAI - State permanent number for exotic pest detection

CAS - State permanent number issued by county for emergency response

CAE - State prov number for hazardous waste removal caused by natural disasters

CAX - State permanent or provisional number issued prior to 1987. No longer used.  
CLU - State permanent number issued by county for clandestine lab cleanup  
CAR - Federal permanent number  
CA - Federal permanent number  
CAD - Federal permanent or provisional number. State provisional before 1988.  
CAT - Federal permanent number  
CAP - Federal provisional or emergency number

This list has been researched within a quarter of a mile radius of the subject site.

Site: CITY OF LOS ALAMITOS  
Address: CERRITOS AVE  
City: CYPRESS  
Status: EPA ID#: CAD000318949

Site: CYPRESS GOLF CLUB  
Address: 4921 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 13 - about .26 mile W of the subject  
Status: EPA ID#: CAL000097796

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: EPA ID#: CAC001229736

		88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Waste oil and mixed oil	ton					4.17			

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: EPA ID#: CAD981684483

		88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Aq sol with org residues < 10%	ton						.06	.32	
Asbestos containing waste	ton		4.21						
Oxygenated solvents	ton	.35							

Site: KOHLER CO  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: EPA ID#: CAC001448696

Site: LOS ALAMITOS RACE COURSE  
Address: 4961 KATELLA AVE  
City: STANTON  
Map Loc: 12 - about .25 mile W of the subject  
Status: EPA ID#: CAD982349243

		88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Asbestos containing waste	ton		29.49						
Polychlorinated biphenyls	ton	.05							
Empty containers < 30 gal	ton			.5	33.71				
Liq with PCB > 50 mg/l	ton	4.95							

		88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Aq sol with org residues > 10%	ton					.23			
Aq sol with org residues < 10%	ton					.38			
Waste oil and mixed oil	ton			3.13					
Other organic solids	ton				2				
Contaminated soil	ton				.25				
Aq sol with org residues > 10%	ton				.94				

Site: WIRE TECH EDM INC  
Address: 5450 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 16 - about .3 mile E of the subject  
Status: EPA ID#: CAL000079694

		88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Other organic solids	ton								.22
Other organic solids	ton								.3
Other organic solids	ton								.4



Site: POWER LITE RENTALS  
Address: 5480 KATELLA AVE,SUITE 206  
City: LOS ALAMITOS  
Map Loc: 17 - about .35 mile E of the subject  
Status: EPA ID#: CAL000010675

Site: FLUOROCARBON MECH SL  
Address: PO BOX 520  
City: LOS ALAMITOS  
Status: EPA ID#: CAD079548335

Site: AERO TRACE  
Address: 11021 VIA EL MERCADO  
City: LOS ALAMITOS  
Map Loc: 6 - about .2 mile E of the subject  
Status: EPA ID#: CAD982316846

			88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Oil/water sludge	ton					1.67				

Site: WESTERN SHIRT LINE  
Address: 11041 VIA EL MERCADO  
City: LOS ALAMITOS  
Map Loc: 7 - about .2 mile E of the subject  
Status: EPA ID#: CAL000069336

Site: ABOVEBOARD SIGN COMPANY  
Address: 11052 VIA EL MERCADO  
City: LOS ALAMITOS  
Map Loc: 10 - about .22 mile E of the subject  
Status: EPA ID#: CAL000069340

Site: CYPRESS AUTO CENTER  
Address: WALKER ST  
City: CYPRESS  
Status: EPA ID#: CAC000122077

			88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Waste oil and mixed oil	ton		1.66							
Contaminated soil	ton		26.96							

Site: K&A IMPORTS  
Address: 11061 WINNERS CIR  
City: LOS ALAMITOS  
Map Loc: 2 - about .11 mile SE of the subject  
Status: EPA ID#: CAD981443161

			88/89	90/91	92/93	94/95	96/97	98/99	00/01	02
Unspecified aqueous solution	ton		.62	.45						
Unspec organic liquid mixture	ton				.92					

Site: K & A IMPORT SERVICES  
Address: 11061 WINNERS CIR  
City: LOS ALAMITOS  
Map Loc: 2 - about .11 mile SE of the subject  
Status: EPA ID#: CAD981445026

Site: ILLUMINATION TECHNOLOGY INC  
Address: 11132 WINNERS CIR, SUITE 100  
City: LOS ALAMITOS  
Map Loc: 5 - about .17 mile SE of the subject  
Status: EPA ID#: CAL000097605

UST Permitted Underground Storage Tanks - State Water Quality Control Board

The Corteses Bill (AB2013), enacted in 1983, required registration of all underground storage tanks (UST) with the State Water Quality Control Board by July 1, 1984. About 176,000 tanks and surface impounds were registered between 1984 and 1987. An amendment (AB 1413) was passed in 1987, effectively removing the State Board from the registration process starting January 1, 1988. The data reflects the information collected by the state between 1984 and 1987 as well as recent time and includes all tanks and surface impounds in use or closed after 1974.

Home and farm heating fuel tanks with capacities of 1,100 gallons or less and "structures such as sumps, separators, storm drains, catch basins, oil field gathering lines, refinery pipelines, lagoons, evaporation ponds, well cellars, separation sumps, lined and unlined pits, sumps and lagoons" except those defined as UST under HSWA or may be regulated to protect water quality under the Porter-Cologne Water Quality Control Act are excluded.

This list has been researched within a quarter of a mile radius of the subject site.

Site: LOS ALAMITOS RACE TRACK  
Address: 4961 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 12 - about .24 mile W of the subject  
Status: 30002483531 (199598A)

Site: INNABI UNION 76 #1  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject  
Status: 00000008023 (1987&A9)  
Activity: GAS STATION  
Tanks: 9940 gallon, single-walled, unlined, carbon steel tank (unleaded), installed in 1964  
9940 gallon, single-walled, unlined, carbon steel tank (premium), installed in 1964  
280 gallon, single-walled, unlined, carbon steel tank (waste oil), installed in 1964

Site: INNABI UNION 76 #1  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject  
Status: 00000056204 (1987&93)  
Activity: GAS STATION  
Tanks: 120 gallon, single-walled, unlined, concrete tank (waste oil), installed in 1965

Site: TOSCO #5680  
Address: 5100 KATELLA AVE  
City: LOS ALAMITOS  
Map Loc: 14 - about .27 mile W of the subject

23528  
VACANT LAND N SIDE OF KATELLA AVE, CYPRESS

Page: 25  
Date: 07-26-2006  
Job: DCIS7833

---

Status: 3000018767 (192005)

## **Appendix F**

### **Environmental Contractor's Certification**

## ENVIRONMENTAL CONTRACTOR'S CERTIFICATION

Contractor's Name: DCI Services

Contractor's Address: 9795 Cabrini Drive, Suite 104, Burbank, CA. 91504

1. Name and title of person performing the audit: Brett A. Herion, REA # 7603

- Attach a statement of how long the person has been performing environmental assessments and the education and training the person has received.

2. Identify any certifications and approvals issued to contractor pursuant to an official Federal, State, or local program or policy to conduct environmental assessments:

California Environmental Protection Agency REA # 7603

3. Describe the generally recognized standards which the contractor will use to perform the assessment.  
ASTM 1527-00

4. Disclose the nature of any previous environmental inspections contractor has ever performed for the seller of the property: None

Or the buyer of the property: None

5. Disclose the nature of any affiliation or association contractor now has or ever had, with the above referenced seller of the property, or the above referenced buyer of the property.

NA

6. Describe/Attach evidence of the liability insurance carried by contractor to cover claims in the event that it fails to discover adverse environmental conditions during an environmental inspection.

American Safety Casualty Insurance (policy #ENV011614-05-01)

(Please use attachments if needed).

The undersigned hereby certifies, under penalty of the criminal and/or civil penalties in 18 U.S.C.# 1001 for false statements to the United States Government, that the above information is true and correct.

8-10-06  
Date

Brett A. Herion  
Signature

## Historical Aerial Photographs



## **Not Reported**

Not Reported

Los Alamitos, CA 90720

Inquiry Number: 5646263.8

May 09, 2019

# **The EDR Aerial Photo Decade Package**



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## EDR Aerial Photo Decade Package

05/09/19

**Site Name:**

Not Reported  
Not Reported  
Los Alamitos, CA 90720  
EDR Inquiry # 5646263.8

**Client Name:**

Roux Associates  
402 Heron Drive  
Logan Township, NJ 08085-0000  
Contact: Angela Truong



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:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1989	1"=500'	Flight Date: August 22, 1989	USDA
1981	1"=500'	Flight Date: February 21, 1981	EDR Proprietary Brewster Pacific
1977	1"=500'	Flight Date: January 18, 1977	EDR Proprietary Brewster Pacific
1970	1"=500'	Flight Date: February 19, 1970	EDR Proprietary Brewster Pacific
1963	1"=500'	Flight Date: February 28, 1963	USGS
1952	1"=500'	Flight Date: November 18, 1952	USDA
1947	1"=500'	Flight Date: June 17, 1947	FAIR
1938	1"=500'	Flight Date: June 21, 1938	USDA
1928	1"=500'	Flight Date: January 01, 1928	FAIR

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

#### Disclaimer - Copyright and Trademark Notice

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 OF 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 or forecast 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.

Copyright 2019 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.





INQUIRY #: 5646263.8

YEAR: 2016

— = 500'







INQUIRY #: 5646263.8

YEAR: 2012

— = 500'







INQUIRY #: 5646263.8

YEAR: 2009

— = 500'







INQUIRY #: 5646263.8

YEAR: 2005

— = 500'







INQUIRY #: 5646263.8

YEAR: 1994

— = 500'







INQUIRY #: 5646263.8

YEAR: 1990

— = 500'







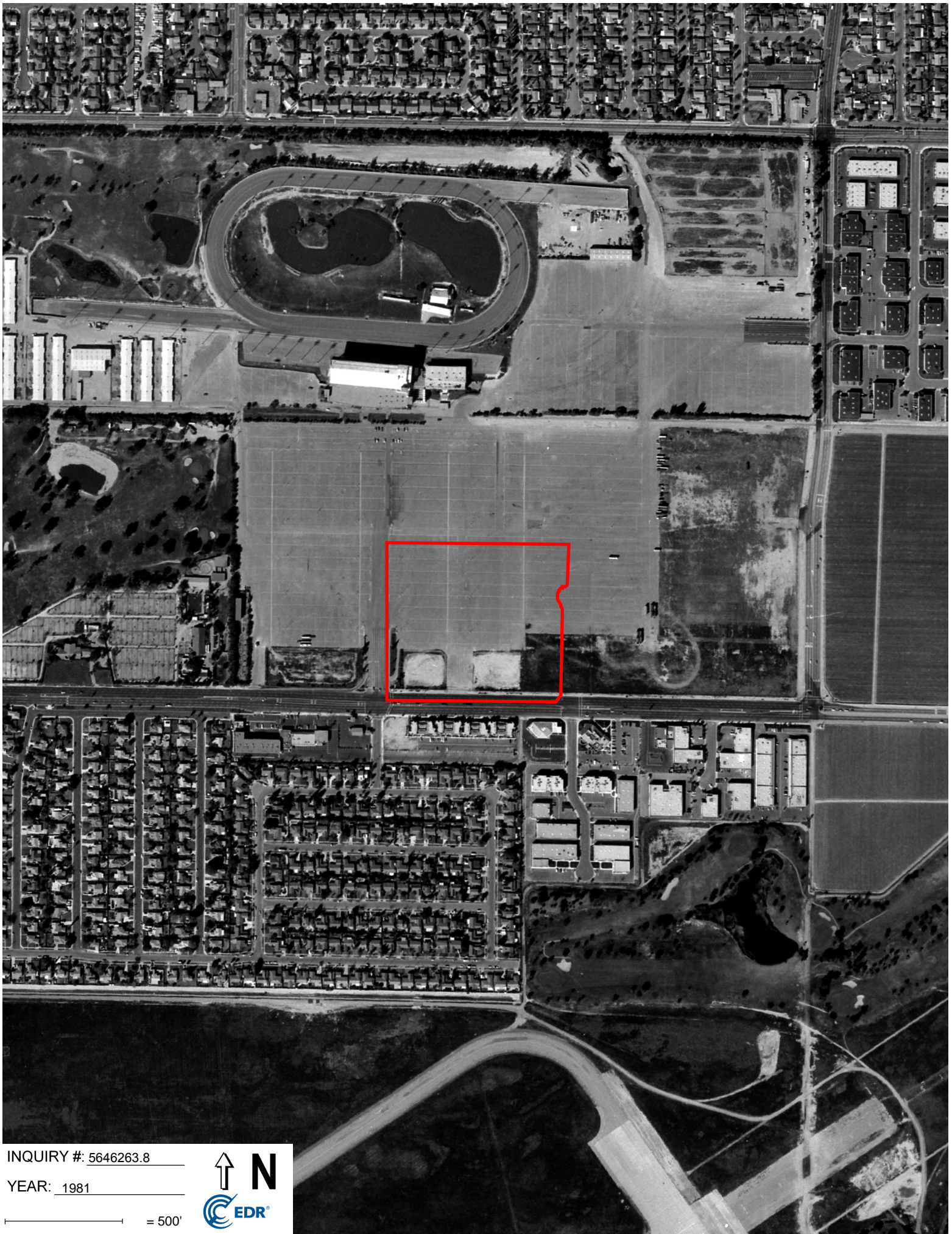
INQUIRY #: 5646263.8

YEAR: 1989

— = 500'







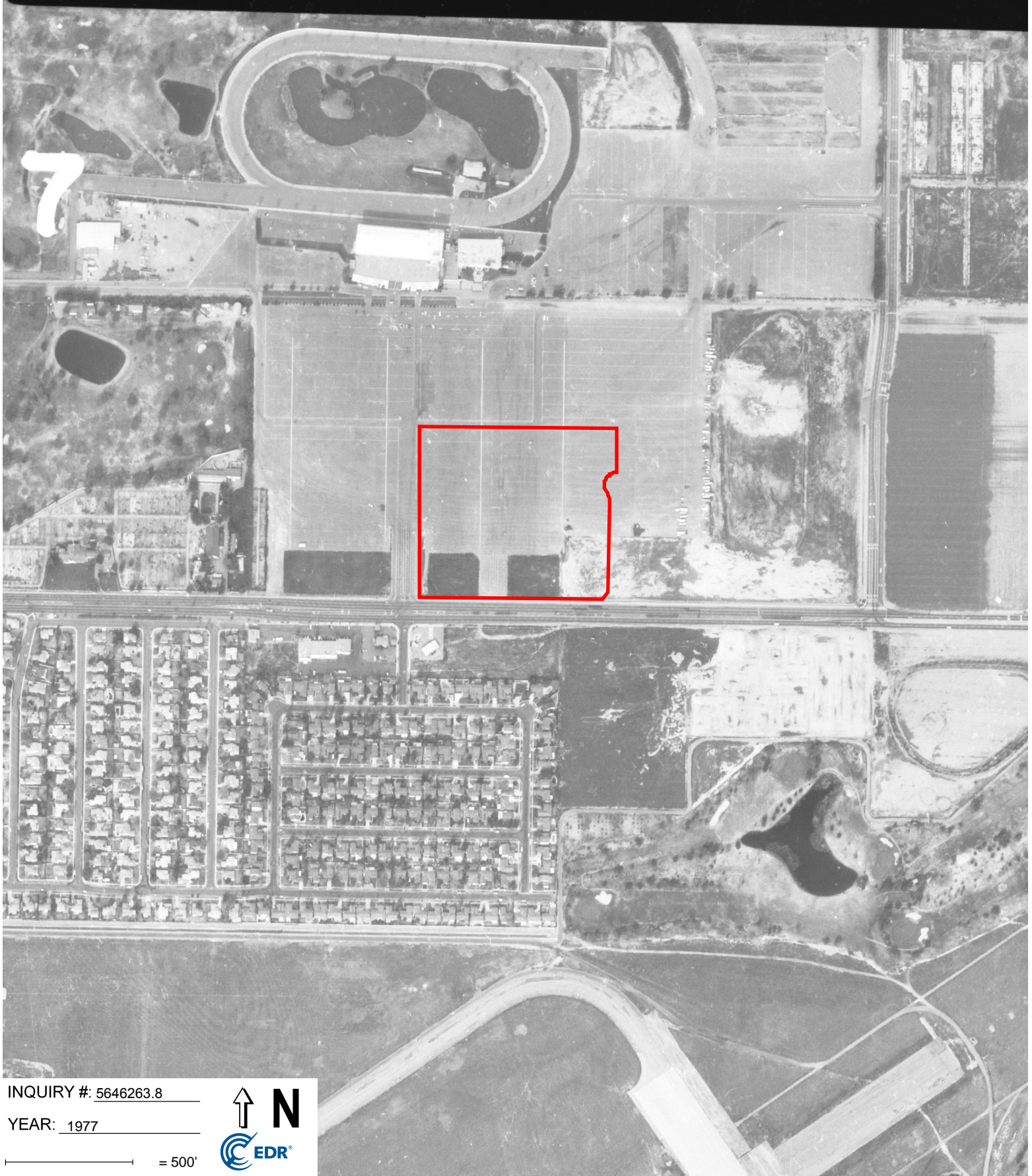
INQUIRY #: 5646263.8

YEAR: 1981

— = 500'







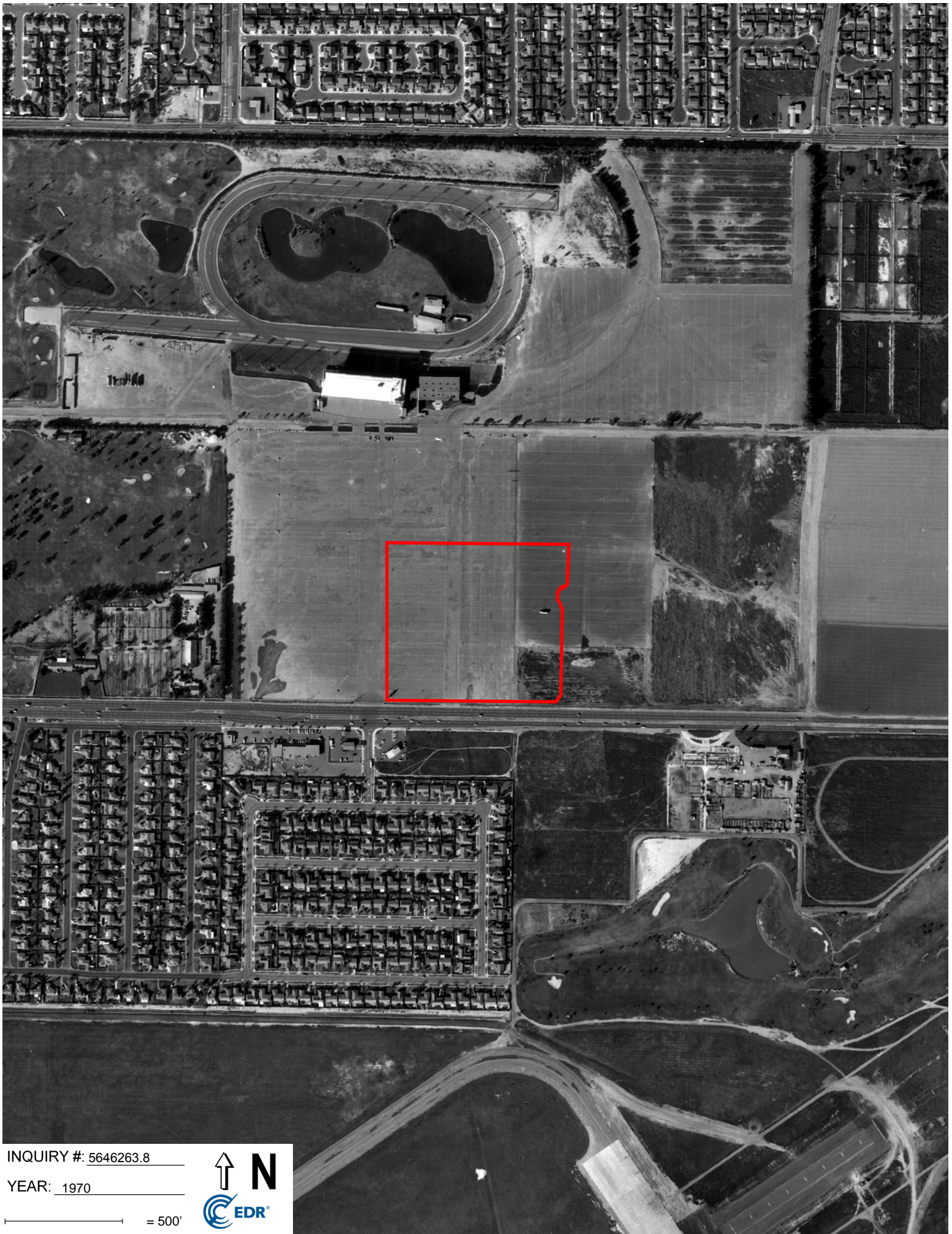
INQUIRY #: 5646263.8

YEAR: 1977

— = 500'







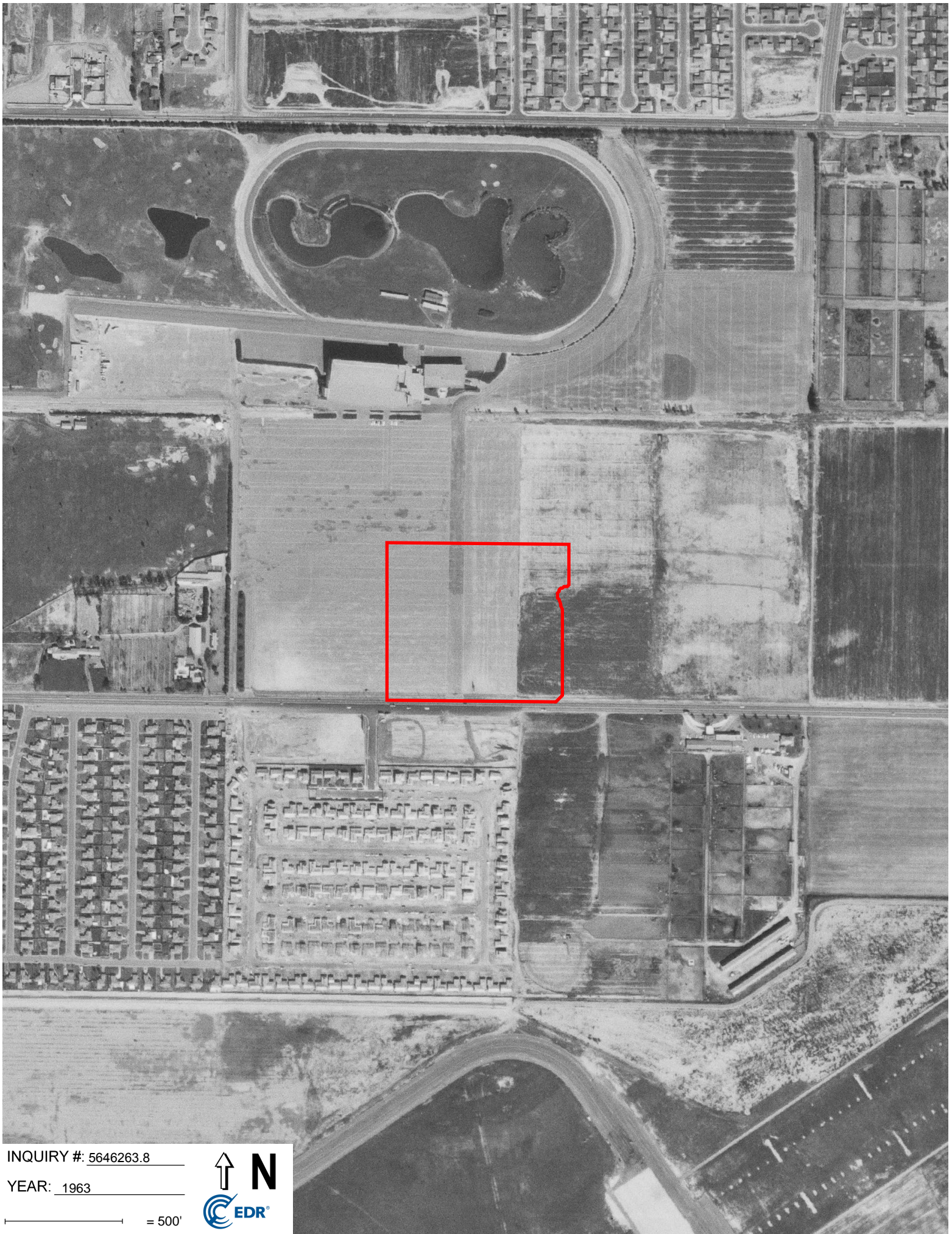
INQUIRY #: 5646263.8

YEAR: 1970

— = 500'







INQUIRY #: 5646263.8

YEAR: 1963

— = 500'







INQUIRY #: 5646263.8

YEAR: 1952

— = 500'





INQUIRY #: 5646263.8

YEAR: 1947

— = 500'







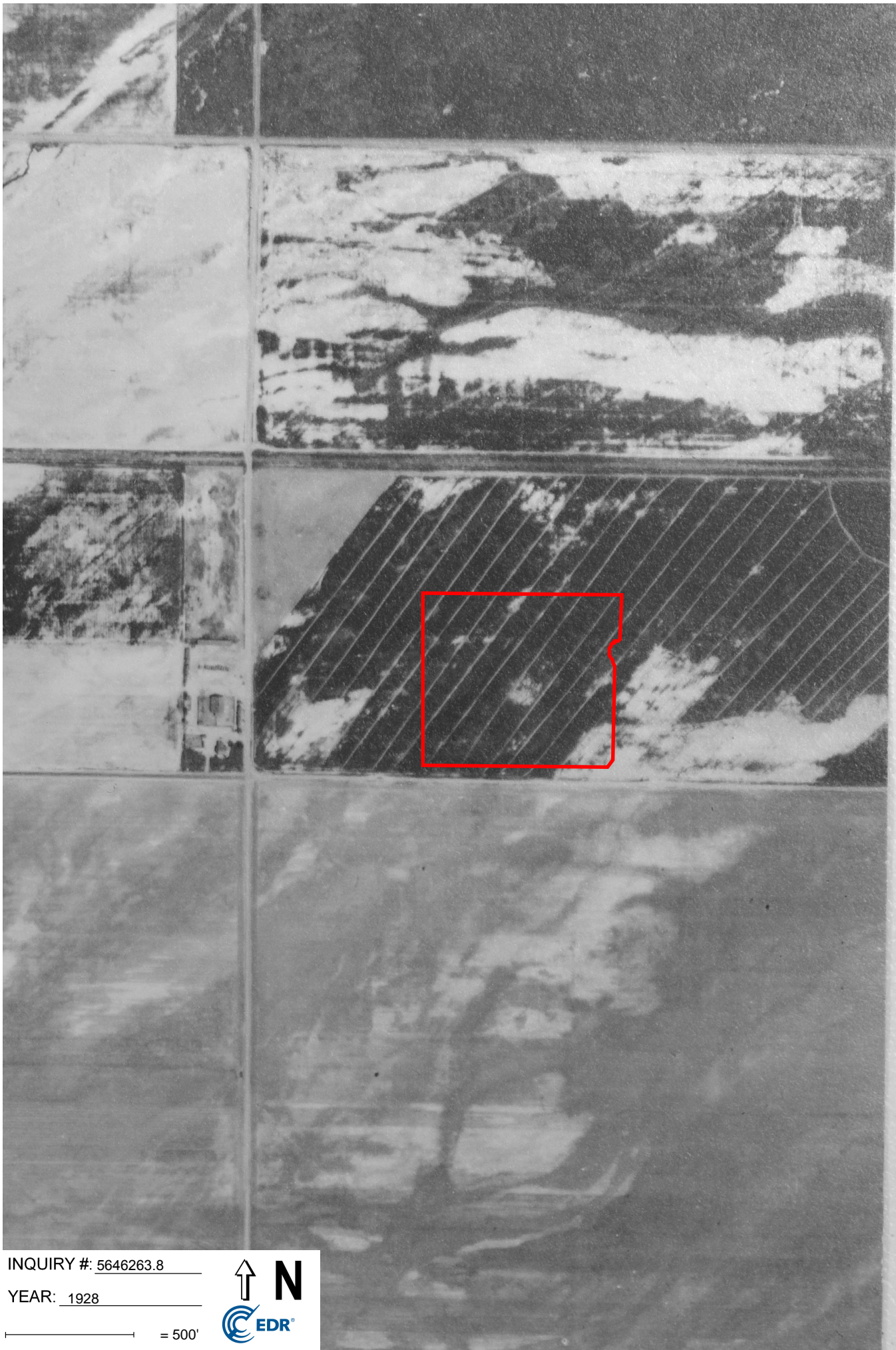
INQUIRY #: 5646263.8

YEAR: 1938

— = 500'







INQUIRY #: 5646263.8

YEAR: 1928

— = 500'



## City Directories



**Not Reported**

Not Reported  
Los Alamitos, CA 90720

Inquiry Number: 5646263.5  
May 13, 2019

## The EDR-City Directory Image Report



Environmental Data Resources Inc

6 Armstrong Road  
Shelton, CT 06484  
800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## TABLE OF CONTENTS

### **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.

### **Disclaimer - Copyright and Trademark Notice**

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 or forecast 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.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

## 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.

### RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

Data by

*infoUSA*<sup>®</sup>

Copyright©2008  
All Rights Reserved

### 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.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2005	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
1995	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
1992	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
1985	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1980	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1975	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1972	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1971	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1966	<input checked="" type="checkbox"/>	<input type="checkbox"/>	General Telephone Co

## FINDINGS

### TARGET PROPERTY STREET

Not Reported  
Los Alamitos, CA 90720

<u>Year</u>	<u>CD Image</u>	<u>Source</u>
-------------	-----------------	---------------

### KATELLA AVE

2014	pg A2	EDR Digital Archive
2010	pg A4	EDR Digital Archive
2005	pg A6	EDR Digital Archive
2000	pg A8	EDR Digital Archive
1995	pg A10	EDR Digital Archive
1992	pg A12	EDR Digital Archive
1985	pg A13	Haines Criss-Cross Directory
1985	pg A14	Haines Criss-Cross Directory
1985	pg A15	Haines Criss-Cross Directory
1980	pg A16	Haines Criss-Cross Directory
1980	pg A17	Haines Criss-Cross Directory
1975	pg A18	Haines Criss-Cross Directory
1975	pg A19	Haines Criss-Cross Directory
1972	pg A20	Haines Criss-Cross Directory
1971	pg A21	Haines Criss-Cross Directory
1971	pg A22	Haines Criss-Cross Directory
1966	pg A23	General Telephone Co

## FINDINGS

### CROSS STREETS

No Cross Streets Identified

## **City Directory Images**

# KATELLA AVE 2014

4921 RACE TRACK CHAPLAINCY  
 SEVENTH DAY ADVENTIST CHURCH  
 THREESXTYFIVE STDNT MINISTRIES  
 4931 MARRIOTT INTERNATIONAL INC  
 4951 24 HOUR FITNESS USA INC  
 4955 OFFICE DEPOT INC  
 4957 COLD STONE CREAMERY  
 PACIFIC PREMIER BANK  
 ROCKSTAR TAN LLC  
 4959 AROMA ITALIANO CAFE  
 CYPRESS SUBWAY  
 JV BEAUTY SYSTEMS INC  
 JV CRTIVE NILS SPA CNCEPTS LLC  
 LA SALSA FRESH MEXICAN GRILL  
 WHITE SANDS SALON & DAY SPA  
 4961 BURLINGTON HOLDINGS LLC  
 CALIFRANIA JOCKEYS WELFARE CORP  
 CAPTIVE DEVELOPMENT INC  
 COOPER JOHN  
 EDWARD C ALLRED FOUNDATION  
 HORSE RACING BOARD CALIFORNIA  
 LOS ALAMITOS RACE COURSE  
 LOS ALAMITOS RACING ASSN  
 PACIFIC COAST QRTER HORSE RCNG  
 PEGASUS COMMUNICATIONS INC  
 QUARTER HORSE RACING INC  
 T&R TACK & SUPPLY  
 WEHRLWIND MEDIA  
 5008 CLASSIC BURGER CAFE  
 KATELLA GARDEN INC  
 NIKOLAU ENTERPRISES INC  
 5010 FINAL TOUCH ELECTROLOGY CLINIC  
 5018 HEALING STORM A  
 MARTINEZ JOHN  
 5024 CALIFORNIA TACK  
 FOX FOX FOX TRAVEL  
 PFD ACADEMY  
 QUARTER HRSE BENVLNT CHRTY FND  
 SUMMIT LENDING  
 5028 CHAMBERLAIN THOMAS A DDS  
 5030 ACTION LEGAL NETWORK  
 ADAM INTELLIGENT TRAVEL SVC  
 BBC IMPORTS LLC  
 BOB MAW  
 CAR WASH BROKER  
 CLEARWATER MANAGEMENT SERVICES  
 COMPANION CARE SERVICES  
 DEW, OLIVER J  
 ELSAHHAR ASHRAF  
 GORYL GERARD MD

**KATELLA AVE****2014****(Cont'd)**

5030 INNOVATION SOLUTIONS INC  
LAW OFFICES SUSAN REGEIMBAL  
MANUFACTURING PROS LLC  
PETS CENTRAL EXPRESS PHARMACY  
REALITY HOUSE INC  
STANYO DAVID P  
UNITED RUBBER WKRS LOCAL 560  
UNITED STEELWORKERS 560L LOCAL



# KATELLA AVE 2010

4921	SEVENTH DAY ADVENTIST CHURCH
4931	MARRIOTT INTERNATIONAL INC
4951	24 HOUR FITNESS USA INC
4955	OFFICE DEPOT INC
	STEFAN BEAN
4957	COLD STONE CREAMERY
	CYNERGY INC
	PACIFIC PREMIER BANK
4959	CYPRESS SUBWAY
	JOO SON CORP
	JV BEAUTY SYSTEMS INC
	JV CRTIVE NILS SPA CNCEPTS LLC
	LA SALSA FRESH MEXICAN GRILL
	RAHE ENTERPRISES INC
	WHITE SANDS SALON & DAY SPA
4961	BAZELY TOM RACING STABLE
	BURLINGTON HOLDINGS LLC
	CALIFRANIA JOCKEYS WELFARE CORP
	CAPTIVE DEVELOPMENT INC
	COOPER JOHN
	EDWARD C ALLRED FOUNDATION
	FINISH LINE SELF INSURANCE GRP
	HALL CONNIE RACING STABLE
	HOBSONS SADDLERY
	HORSE RACING BOARD CALIFORNIA
	LEWIS EQUINE MANAGEMENT SERVIC
	LOS ALAMITOS RACE COURSE
	LOS ALAMITOS RACE TRACK
	LOS ALAMITOS RACING ASSN
	MCARTHUR RACING STABLES
	PACIFIC COAST QRTER HORSE RCNG
	PEGASUS COMMUNICATIONS INC
	QUARTER HORSE RACING INC
	SAN VICENTE HOSPITAL CORP
	SCOTWINC
	T&R TACK & SUPPLY
	WEHRLWIND MEDIA
5008	CLASSIC BURGER CAFE
	KATELLA GARDEN INC
	NIKOLAU ENTERPRISES INC
5010	FINAL TOUCH ELECTROLOGY CLINIC
	LASTING IMAGES
5014	GRAIN RESOURCE INC
	TELESIS NETWORK INC
5018	HEALING STORM A
	MARTINEZ JOHN
5020	MAX MUSCLE
5024	A & P DRYWALL
	AMERITEC INTERNATIONAL INC
	BRIDESHEAD LLC

## KATELLA AVE

2010

(Cont'd)

5024	CALIFORNIA TACK
	COASTAL INVESTMENT NETWORK
	DAN S ELECTRICAL SERVICE
	DAVISOLUTIONS
	PFD ACADEMY
	POST TIME INC
	PREPARING FOR A DEGREE INC
	PULAU ELECTRONICS
	QUARTER HRSE BENVLNT CHRTY FND
5028	CHAMBERLAIN THOMAS A DDS
5030	ADAM INTELLIGENT TRAVEL SVC
	BTM
	CAR WASH BROKER
	CLEARWATER MANAGEMENT SERVICES
	COMPANION CARE SERVICES
	ELSAHHAR ASHRAF
	GABRIEL MICHELLE R LAW OFFICES
	GOLD COAST DIABETES RESOURCE
	GOMEZ LANDSCAPING
	GUGA TOURS
	INNOVATION SOLUTIONS INC
	INTELLIGENT TRAVEL & TOURS
	JOHN KRISTIANSON
	LAW OFFICES SUSAN REGEIMBAL
	MANUFACTURING PROS LLC
	MAW BOB INSURANCE
	PAYROLL PROS INC
	PERFECT RATE INSURANCE AGENCY
	STANYO DAVID P
	UNITED RUBBER WKRS LOCAL 560
	UNITED STEELWORKERS 560L LOCAL

# KATELLA AVE 2005

4921 CYPRESS GC LLC  
 F B D ENTERPRISES USA INC  
 FJC USA INC  
 4931 MARRIOTT INTERNATIONAL INC  
 4951 24 HOUR FITNESS USA INC  
 24 HOUR FITNESS WORLDWIDE INC  
 CAL SELECT BUILDERS INC  
 VCC  
 4955 OFFICE DEPOT INC  
 4957 148 COFFEE BEAN & TEA LEAF  
 4959 ISLAND CLEANERS  
 RED PERSIMMON NAIL & SPA  
 WHITE SANDS SALON AND BASEBALL  
 4961 16835 ALGONQUIN CORPORATION  
 ARABIAN RACING ASSOC OF CALI  
 AUTOTOTE SYSTEMS INC  
 BASSETT RACING  
 BAZELY TOM RACING STABLE  
 CALIFORNIA OUTDOOR MARKET INC  
 COOPER JOHN  
 DENNY EKINS RACING STABLE  
 EG HIGH DESERT FARM  
 GOLDEN HORSE SHOE KITCHEN  
 HALL CONNIE RACING STABLE  
 HOBSON'S SADDLERY  
 HORSE RACING BOARD CALIFORNIA  
 HORSEMENS QRTER HRSE RACG ASSN  
 L M DUNCAN RACING STABLES  
 LOS ALAMITOS RACE COURSE  
 LOS ALAMITOS RACE TRACK  
 LOS ALAMITOS RACING ASSN  
 MC ELECTRIC  
 MCARTHUR RACING STABLES  
 MO MO INC  
 PACIFIC COAST QRTER HORSE RCNG  
 PAYNES RACING ARABIANS  
 PEGASUS COMMUNICATIONS INC  
 QUARTER HORSE RACING INC  
 SMITH VINCENT J  
 T&R TACK & SUPPLY  
 5008 KATELLA GARDEN INC  
 NIKOLAU ENTERPRISES INC  
 PARK HOUSTON K  
 SAINT PAULS PLACE  
 5010 FINAL TOUCH ELECTROLOGY CLINIC  
 LASTING IMAGES  
 5014 ORANGE COUNTY PC SOLUTION  
 5018 ACU-MED ACUPUNCTURE  
 5020 JOHNSON FORM TOOL & EDM INC  
 5024 ALL PRO ELECTRIC

## KATELLA AVE

2005

(Cont'd)

5024	CALIFORNIA TACK COASTAL INVESTMENT NETWORK DAVISOLUTIONS FURNITURE TRENDS WEST INC HART SECURITY LAWLER ROY MEDSERV TRANSCRIPTION PUB POST TIME INC PREPARING FOR A DEGREE INC QUARTER HORSE BENEVOLNT CHARTY SOUTHLAND DISTRIBUTION INC
5028	CHAMBERLAIN THOMAS A DDS CHAMBERLAIN THOMAS ARTHUR DDS TACHION INDUSTRIES
5030	A & A APPRAISALS INC A CREATIVE TOUCH ADAM INTELLIGENT TRAVEL SVC CAR WASH BROKER CITA PAYROLL CORRECTIONAL SYSTEMS INC GOLANTY LORRIEE M ATTY AT LAW GOMEZ LANDSCAPING GUGA TOURS I&M INSURANCE LAWLER, ROY LEAP ELIZABETH H MAMDOUH ABOUSHOLLSHA MAW BOB INSURANCE MAX MUSCLE OF LOS ALAMITOS MFG PROS LLC MYKONOS RESTAURANT PEPSI COLA FEDERAL CREDIT UN SATURN INSURANCE COMPANY SENTENCING CONCEPTS INC SHAW & WEITZ SHAW, JOHN R UNITED RUBBER WKRS LOCAL 560 VENEY, F VENTURA JIM

# KATELLA AVE 2000

4772 INVISION STUDIOS INC  
MINNA DAVID A MD  
R D H ASSOCIATES  
4782 HUDZIETZ DON  
HUDZIETZ DON INCOME TAX SVC  
INCOME TAXES SERVICE  
RAY MICHAEL INCOME TAX & FIN  
4784 WORTHINGTON & ASSOCIATES  
4921 F B D ENTERPRISES USA INC  
FJC USA INC (DEL)  
FUJI COUNTRY USA INC  
4951 MARK RUNNINGBEAR  
4961 ARABIAN RACING ASSOC OF CALI  
AUTOTOTE SYSTEMS INC  
BRAITHWAITE BRYAN RACG STABLE  
CALIFORNIA TACK  
COMPURACE INC  
COOPER JOHN  
DENNY EKINS RACING STABLE  
HALL CONNIE RACING STABLE  
HOBSON SADDLERY  
HORSE RACING BOARD CALIFORNIA  
HORSEMENS QUARTER HORSE  
LOS ALAMITOS QUARTER HRSE RACG  
LOS ALAMITOS RACE COURSE  
LOS ALAMITOS RACING ASSN  
MARKET PL AT LSLMTOS RACE CURS  
MASTERS BINE RACING STABLES  
MO MO INC  
PACIFIC COAST QRTER HORSE RCNG  
PAYNES RACING ARABIANS  
PEGASUS COMMUNICATIONS INC  
PENINSULA HORSE RACING ASSN  
QUARTER HORSE RACING INC  
T&R TACK & SUPPLY  
5010 R AND W ELECTRONICS INC  
5014 GARDNER MAXINE  
5018 INDEPENDENT CONSULTANTS VOCAT  
MARTINEZ, JOHN  
5020 SOPHISTS REGALIA  
5024 CENTOS COMPANY  
CHUCK FIRST CHIMNEY SWEEPER  
DETAILS WORD DATA PROCESSING  
FREEMAN FURNITURE  
PREPARING FOR A DEGREE INC  
5028 CHAMBERLAIN THOMAS A DDS  
5030 COHEN, DOUGLAS A  
GARRISON, WILLIAM  
GOLANTY LORRIEE M ATTY AT LAW  
I&M INSURANCE

## KATELLA AVE

2000

(Cont'd)

5030 IKNADOSIAN, RALPH N  
LEAP ELIZABETH H  
LEAP, E H  
MAW ROBERT C  
NELMS ROBERT L  
PEPSI COLA FEDERAL CREDIT UN  
PROFESSIONAL CHOICE INSUR  
SENTENCING CONCEPTS INC  
SHAW & WEITZ  
UNITED RUBBER WKRS LOCAL 560  
WURTZ PAUL

**KATELLA AVE 1995**

4772 EXPRESS SUPPORT SERVICES INC  
LAYTON, PHILIP D  
PACIFIC TECHNICAL SA  
R D H ASSOCIATES  
THELEN, P J  
WEST COAST INTERIORS

4782 DUNN, KELLY

4784 APPLING INSURANCE COMPANY  
APPLING INSURANCE SERVICES

4921 CYPRESS GOLF CLUB  
F B D ENTERPRISES USA INC  
FJC USA INC (DEL)  
FUJI COUNTRY USA INC

4961 AUTOTOTE SYSTEMS INC  
BLOOMQUIST CHARLES  
BLOOMQUIST, CHARLES  
BLUMENFELD PAUL RACING STABLES  
BOYCE MEL HORSE TRANSPORTATION  
GARRETT, DANNY  
GIVENS, DENNIS  
HORSEMENS QRTR HRS  
IRBY WILLIAM R  
IRBY, WILLIAM R  
JAIME, H  
LAYNE, BRET  
LOS ALAMITOS RACING ASSN  
PENINSULA HORSE RACING ASSN  
PICHES CRCORAN TRAINING STABLE  
PINELLI, LAURA  
POST TIME  
QUARTER HORSE RACING INC

5010 FAMILY SHOES  
SEWING BY SUSAN

5014 GARDNER RING CO

5018 MARTINEZ, JOHN

5020 R AND W ELECTRONICS

5024 AVERILL, JAMES  
BARRANTES, ANTHONY  
BOQUIST, LARRY  
BOYEE, MEL  
BRADLEY TRANSPORTATION  
CENTOS COMPANY  
CREATIVE HAIR DESIGN  
DAVIS, RAYMOND  
DIORIO, JAMES  
FREEMAN FURNITURE  
FRIESS, ANN  
GERVAIS, KAREN  
GLAVES, MELVIN  
GUZMAN, GUSTAVO C

## KATELLA AVE

1995

(Cont'd)

5024	HAMMES, WENDY
	KANDELA, IMAD
	KURI, DAVID
	MICHENER, ARTHUR T
	MILLER, JOHN B
	PANGOLIBAY, WILLIE
	POST TIME MAIL CENTER
	PRINTING PRESS
	SHOEMAKER, CHERYL
	TURNER, PETER
	WEBB, PAUL
	WILSON, PENTICA F
	ZYLSTRA, JEAN
5030	BALLMAN, JOHN W
	DEWOLF GREGORY
	FEMMI GREEN ESCROW CORP
	GOLANTY LORRIEE M ATTY AT LAW
	GOLANTY, LORRIEE M
	LEAP ELIZABETH H EA
	NOTHWANG SALLY P
	NOTHWANG, SALLY P
	PEPSI COLA FEDERAL CREDIT UN
	ROBERT L NELMS
	SHAW & WEITZ
	SHAW, JOHN R
	UNITED RUBBER WKRS LOCAL 560
	WEITZ, MARK S
	WURTZ, PAUL



**KATELLA AVE 1992**

4772 ATTORNEY ASSISTED LEGAL CTRS  
EXPRESS SUPPORT SERVICES INC  
LAYTON PHIL  
LAYTON, PHILIP D  
R D H ASSOCIATES  
THELEN, P J

4782 DUNN KELLY & ASSOCIATES

4784 APPLING INSURANCE CO

4921 FJC USA INC (DEL)

4961 AMTOTE INTERNATIONAL INC  
BOYCE MEL HORSE TRANSPORTATION  
DOMINGUEZ CAESAR RACG STABLES  
HORSEMENS QRTR HRS  
LOS ALAMITOS COUNTRY CLUB  
LOS ALAMITOS RACING ASSN  
PENINSULA HORSE RACING ASSN  
POST TIME  
QUARTER HORSE RACING INC  
SOUTHERN CALIFORNIA

5008 MR GS HAMBURGERS

5010 FAMILY SHOES  
NEWCOMB JANET A

5018 BROOKLIER, SUSIE  
CREATIVE HAIR DESIGN  
MARTINEZ, JOHN  
PHIL SINGER INTERNATIONAL INC

5024 CREATIVE TRADING INC  
ELECTRA TEK INC  
PRINTING PRESS

5028 SOUND SOLUTIONS

5030 DECOR FLOORING AND RESTORATION  
DEWOLF GREGORY  
GOLANTY LORRIEE  
GREEN FEMMI ESCROW INC  
GREER & MATHIEU INC  
KRUSE INSURANCE  
NOTHWANG SALLY P  
PEPSI COLA CREDIT UNION  
PETERSON & ROSS

## KATELLA AVE 1985

4522	M G BOOKKEEPING SV	995-4103 +5	
4561	LOSALAMTS CNTRY CLB	826-3670	
	LOSALAMTS CNTRY GLF	821-5990	9
	LOSALAMTS GLF CRSE	828-0402	
4582	XXXX	00	
4652	HULSEY&CHRISMAN INS	827-5411	3
4662	GARY N INS BROKERS	821-7041	4
	GLENDALE INS AGENCY	821-7041	
	HALL SMITH INS	826-8550	2
	MITCHELL DAVID E PH	846-7376	2
	V I A ENGRG&SUPPLY	894-0776	6
4772	CASA DE BEINBENIDOS	527-3904 +5	
	PROFSNL INVNTY MNG	952-1061	4
4961.....	BUILDING		
	AMERICAN TOTALISATR	828-1590	1
	BADON DALE	527-5038	
	CA OUTDOOR MARKET	220-0251	4
	CA ST HORSE RCNG BD	558-4487	2
	DENNY EKINS STABLE	761-3626	4
	DILAURA EILEEN	826-2318	4
	GONCHAROFF TOM	821-7437	3
	LOS ALMTS RACE CRS	995-1234	4
	LOSALAMTS DINING	995-3877	
	LOSALAMTS HOTLINE	995-2222	8
	LGSALMTS RACE CRSE	995-1234	
	MARTIN F M	821-6336 +5	
	PERSINGER J STABLES	527-1125 +5	
	QUARTER HORSE	821-1050	3
	SCHVANEVELDT BLANE	826-8561	3
	VESSELS STALLN FRMS	527-1000	2
	VESSELS STALLON FRM	995-1234	1
4961.....			
5024	SMALL CAR PARTS	828-5160	4
5028	APPLING INS BRKRS	995-9046	2
5030	DEWOLF GREGORY ATTY	828-8003	2
	FEMMI GREEN ESCROW	952-9667	4
	GREER MATHIEU&CO	995-6535	2
	NOTHWANG SALLY P	761-2951	2
	POPPE GEO T	826-9750	2
5036	ITS	750-7632 +5	

**KATELLA AVE 1985**

KATELLA AV		90720 CONT..
5068	OFF&RUNNING TRAVEL	220-0804 + 5
5072	XXXX	00

## KATELLA AVE 1985

4662	BROTHERHD LOCO ENGR	598-2152	
	CITRO DOUGLAS D PHD	598-9623	4
	FLANNES STEVEN	598-9623	7
	FORMBY PAT	594-9972	2
	GEMINI FOREST PROD	594-8948	2
	GLENDALE INS AGENCY	430-9734	4
	GRAY JOHN P	598-9623	7
	HALL SMITH INS INC	598-2312	2
	HENRY BARBARA	598-9623	7
	LEVY SONIA LCSW	431-0969	4
	MITCHELL DAVID PHD	598-9623	7
	NEAL GARY INS BROKR	430-9734	4
	V I A ENGRG&SUPPLY	430-4571	6
4664	XXXX	00	
4682	TYLER LAWRENCE E	598-6527	
	WRIGHT PETER E	598-6527	
4732	DONS TURF MOTEL	431-6563	
	TURF MOTEL DONS	431-6563	
4752	XXXX	00	
4772	CADDO INTERNATL	493-4434	4
	CASA DE BEINDENIDOS	430-5342	+5
	COMPUTER	493-2411	+5
	CONTL MEDICAL SYS	493-4424	4
	FAIL SAFE POWER	493-3565	+5
	FREEMAN JAS T PHD	431-0566	+5
	INTERNATIONAL POWER	431-6454	+5
	INTL POWER MACHINES	493-5546	4
	PROFESNL INVENTORY	594-4641	1
	YAMCO STEEL PRODUCT	594-6579	+5
4961	HARNESS RACING OFC	431-1361	+5
	LOSALMTS RACE CRSE	431-1361	4
5001	DURR BROS INC	431-0922	
5008	XXXX	00	
5010	IMPRESSIONS	493-4301	+5
	NAIL IMPRESSIONS BY	431-3955	+5
5014	GARDNER RING CO	430-8184	2
5018	MARTINEZ JOHN	431-5936	2
	SINGER PHIL HAIR	493-2409	+5
5020	PYRAMID MEDIACL INC	596-3224	+5

## KATELLA AVE 1980

4221	NEO ENTERPRISES	995-8811	6
4281	LOUISIANA PAC CORP	827-5520+0	
	LOUISIANA PCFIC CO	827-5520+0	
4411	ARROWHEAD PRODUCTS	828-7770	
	LIMOUSINE EXPRNCE	995-8959+0	
	MARTIN MARIETTA	821-3831	8
4561	LOSALAMTS CNTRY CLB	826-3670	3
	LOSALAMTS CNTRY GLF	821-5990	9
	LOSALAMTS GLF CRSE	828-0402	
4582	APEX BONDED CONTRS	827-9190	4
	CALIF ADVISORY SV	827-5490	9
4662	RAINBOW REALTY	527-7898	8
	SMITH HALL AGENCY	826-8550	8
	V I A ENGRG&SUPPLY	894-0776	6
4961	ALLEN ROBT D	821-8801	3
	BADON DALE	527-5038	3
	CHAMBLESS GENE E	821-1800+0	
	DURR BROS INC	995-3877	7
	LOSALAMTS DINING	995-3877	4
	LOSALAMTS HOTLINE	995-2222	8
	LOSALAMTS RACE CRS	995-1234	3
	MILLIE&SEVERSON	827-5441+0	
	SO CALIF RACING ASN	995-1234	8
	VESSELS STALLON FRM	527-1000	2
5182	CANADAY&ASSOCIATES	827-5330+0	
	D D S	827-5330+0	
	DEVELOPERS DIVERSFD	827-5330+0	
	FOUR SAIL PROPERTYS	827-5330+0	
	TRICORE PROPERTIES	827-5330+0	
5252	ALEJANDROS	827-7443+0	
	HARBOR BANK	821-1050+0	
5370	INTERIOR SUPPLY CO	892-1317+0	
5450	AUTO ADS	828-8031	9
	COOK JIM RACING	828-9122	9
	NORTHERN TELCOM INC	638-5535+0	
5480	ALL AREAS MOVING&ST	761-1746	9
	BRALY THOS N	893-0586	9
	CHAUSER&CO	995-8103	9
	DAY ROBERT C	893-0586	9
	HORSEMENS HRSE RCNG	527-2552	9
	MEEK RONALD	893-0586	9
	MILLS CHARLES E CO	893-0586	9
★	146 BUS	14 RES	50 NEW



**KATELLA AVE 1980**

4652	XXXX	00
4662★	APPLING INS BROKERS	594-6893 9
★	BROTHERHD LOCO ENGR	598-2152 4
★	FLANNES STEVEN	598-9623 7
★	GRAY JOHN PAUL	598-9623 7
★	HENRY BARBARA	598-9623 7
★	LAPERNA DONALD J	598-4714 9
★	MATTHEWS D R PHD	594-8244 9
★	MITCHELL DAVID PHD	598-9623 7
★	RAINBOW RLTY	594-8708 9
★	SMITH HALL AGENCY	598-2312 8
★	V I A ENGRG&SUPPLY	430-4571 6
4664	XXXX	00
4682★	TYLER LAWRENCE E	598-6527 5
★	WRIGHT PETER E	598-6527 5
4732★	DONS TURF MOTEL	431-6563
★	TURF MOTEL DONS	431-6563
4752	XXXX	00
4961★	LOSALMTS RACE CRSE	431-1361
5001★	DURR BROS INC	431-0922 3
5008	XXXX	00
5052★	STARTING GATE	598-8957 9
5064	XXXX	00
5068★	F&F EQUESTRIAN SPLY	598-5823+0
5072	XXXX	00

## KATELLA AVE 1975

4132\*AMER SERVICE BUR 826-6430+5  
\*BLACKMUN FENCES INC 826-9610 3  
\*BODIMETRIC PROFILES 826-6430+5  
\*NAKAI ROY T DDS 828-5951+5  
\*POPPE GEO T 826-9750+5  
\*SHSHINIAN GEORGE C 821-9390+5  
\*STROHMYER H A DDS 821-9360 3  
\*STUART T SITZMAN MD 826-2030+5  
4141\*BARNETT ASSOCIATES 827-5520  
\*NATL BLDG CTR SCRTY 827-0770 4  
4411\*ARROWHEAD PRODUCTS 828-7770  
4561\*LOS ALMTS CLB STRTR 828-0402+5  
4582\*APEX BONDED CONTRS 827-9190 4  
4662\*COMPUTER INSTITUTE 894-4266+5  
4961\*LOS ALAMTS RACE CRS 995-1234 3  
\*LOS ALMTS DINING RM 995-3877 4  
\*SO CALIF RACING ASN 826-7070 3  
5001\*DURR BROS INC 995-3877+5  
5074 XXXX 00  
\* 69 BUS 8 RES 31 NEW

## KATELLA AVE 1975

4652	LYNCH DON O	596-3441+5
4662*	BROTHERHD LOCO ENGR	598-2152 4
	*ECONOMICS LAB	598-4446 4
	*HANROW INTERNATL	596-2420+5
	*SILVER STREAK MKTRS	430-8095+5
4682	TYLER LAWRENCE E	598-6527+5
	WRIGHT PETER E	598-6527+5
4732*	DONS TURF MOTEL	431-6563
	*TURF MOTEL DONS	431-6563
4752	DUNN LEO W	431-3482
4772	BANDY GEO L	596-7104+5
4961	XXXX	00
5001*	DURR BROS INC	431-0922 3
5008*	HUNGRY HOUND	598-1076
5052*	PADDOCK THE	431-9227
5064*	TRAIL COUNTRY	598-7018 4
5072*	MOD CRIMPERS THE	431-1513+5
	*THE MOD CRIMPERS	431-1513+5
5074*	LOVES TACK N TOGS	598-7916+5



## KATELLA AVE 1972

KATELLA AV 90720 LOS ALAMITOS

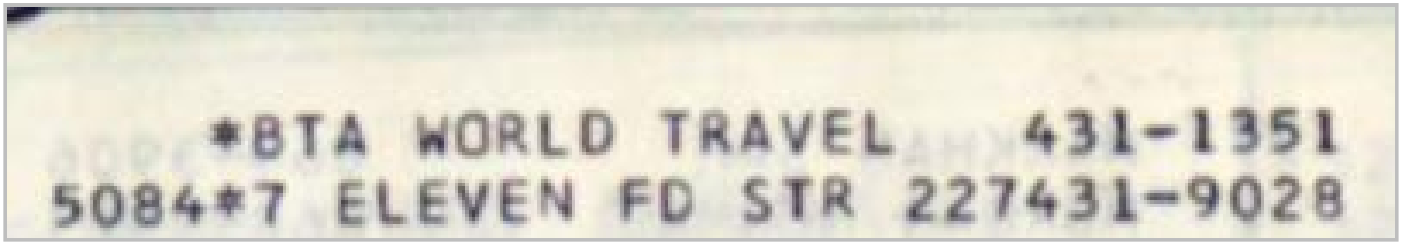
ALSO SEE SOUTH  
SUBURBAN DIRECTORY

3191\*LOS ALAMITOS CITY 827-8670  
 3651\*APEX BUILDERS 827-9190  
 3691 AROS R C 828-6023  
 3722\*BURGER KING CORP 527-7157  
 3772\*ALLIANCE ESCROW 821-6210+2  
     \*C N A INSURANCE 828-9710+2  
     \*FLOYD MULLEN LUMBER 821-8100+2  
     \*HULSEY INS 828-7602  
     \*MEDICAL NUCLEONICS 821-5860  
     \*MULLEN FLOYD LUMBER 821-8100+2  
     POPPE GEO T 826-9750  
     STEPHENS GARLAND G 826-9920  
 3791 GINNS DAVID A MD 827-9850  
     LIEBERMAN L H MD 827-9850  
     OSTROW ARNOLD MD 827-9850  
 3902\*ALAMITOS W CNVL HSP 894-2500+2  
 3952\*KATELLA MNR RESD CR 894-2864  
 4012\*SUPERIOR PAVING CO 527-8414+2  
     \*WARTMAN MOORE&CO 828-3650  
 4111\*COMMNTY CNGRGTNL CH 827-3730  
 4141\*BARNETT ASSOCIATES 827-5520  
 4411\*ARROWHEAD PRODUCTS 828-7770  
     \*NATL GRINDG WHL DIV 827-7020+2  
 3772\*STEPHENS&AUW 826-9920+2  
     \* 18 BUS 6 RES 8 NEW

## KATELLA AVE 1971

4652 GRIMM LINDA L	431-2972
4662 MCKINNEY GLEN	430-5166
4682 SULLIVAN ROBT E	431-6395
4732*DONS TURF MOTEL	431-6563
*TURF MOTEL DONS	431-6563
4752 DUNN LED W	431-3482
4772 SHIFFLET MILDRED I	430-9143
SHIFFLET PHIL L	431-7103
4961 CASEY C PAT	431-2745
FRATIS KEN	430-4365
*LOS ALMTS RACE CRSE	431-1361
5001*LOS ALMTS CONCESSIONS	431-0922
5008*HUNGRY HOUND	598-1076
5052*PADDOCK THE	431-9227
5072*MR KENNETHS COIFFERS	431-1513
5078*BLUMS TRAVEL AGCY	431-1351

**KATELLA AVE 1971**



## KATELLA AVE 1966

4522	MARTIN, A A	GE 14949
4562	HAMMES, J	GE 12703
4602	RATKOVICH, DONALD J	596-0732
4612	HENKEL, A F	GE 18772
4622	MINER, JACK D	596-2884
4644	BRENCKLE, FRANK WM	596-5715
4652	GRIMM, LINDA L	431-2972
4732	□DONS TURF MOTEL	GE 16563
4752	DUNN, L W	GE 13482
5008	□MONNIES FINE FOOD	596-3434
5052	□THE PADDOCK	431-9227
5072	□MR KENNETHS COIFFURS	431-1513
5072	□MR KENNETHS COIFFURS	431-9174
5084	□SPEEDEE MART NO 227	431-9028
5100	□G KINCER UNION STN	596-0312
5100	□KINCER UNION STN	431-9240
5122	□BARKERS SHELL SVC	596-4360

## Sanborn Fire Maps



Not Reported

Not Reported

Los Alamitos, CA 90720

Inquiry Number: 5646263.3

May 08, 2019

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## Certified Sanborn® Map Report

05/08/19

**Site Name:**

Not Reported

Not Reported

Los Alamitos, CA 90720

EDR Inquiry # 5646263.3

**Client Name:**

Roux Associates

402 Heron Drive

Logan Township, NJ 08085-0000

Contact: Angela Truong



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Roux Associates 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](http://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 #** 3B52-4B28-9B2A

**PO #** 2217.0014L000

**Project** Cypress

#### 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 #: 3B52-4B28-9B2A

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™*

### Limited Permission To Make Copies

Roux Associates (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

#### Disclaimer - Copyright and Trademark Notice

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 OF 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 or forecast 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.

Copyright 2019 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

## Regulatory Records Documentation



**Information Management  
Public Records Unit**

**Direct Dial (909) 396-3700  
Fax:(909) 396-3330**

**May 09, 2019**

ANGELA TRUONG  
ROUX ASSOCIATES  
5150 E. PACIFIC COAST HWY., # SUITE 450  
LONG BEACH, CA 90804

**Ref.: CONTROL NO: 99715**

P/O'S, EQL'S, NOV'S, & ASBESTOS RECORDS FOR APN'S: 241-091-22, -23, -24, -25, & -26, CYPRESS, CA.

This is in regard to your public records request dated May 08, 2019. The District is unable to process your request as submitted because the record you have requested:

CANNOT BE SEARCHED BY TRACT, LOT OR PARCEL NUMBERS. PLEASE SUBMIT WITH SPECIFICS (I.E. FACILITY I.D. NUMBER, FACILITY NAME, FACILITY ADDRESS, PERMIT OR APPLICATION NUMBER).

If you have any questions, please do not hesitate to contact me at (909) 396-2311.

Sincerely,

BRITTANY PALAGONIA x2362  
For COLLEEN PAINE  
Public Records Coordinator

:bp



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
Washington, D.C. 20460

**MAY 8 9 2019**

OFFICE OF  
GENERAL COUNSEL

Ms. Angela Truong  
Roux Associates  
5150 E. East Pacific Coast Highway  
Suite 450  
Long Beach, CA 90804

RE: Request Number EPA-HQ-2019-005604

Dear Ms. Truong:

This letter is in response to your Freedom of Information Act (FOIA) request, identified above, that you submitted to the U.S. Environmental Protection Agency (EPA). Your request is seeking records concerning a specific property that does not contain a street address.

The MyProperty database below will provide you with information concerning records the EPA has about a specific property address, and it can be accessed at the website at the link below:

<http://www.epa.gov/myproperty/>

Because the information on a specific address is publicly available, your FOIA request for this information will be closed. Agencies are not required to provide FOIA requesters with records that fall within the proactive disclosure provision of the FOIA, subsection (a)(2), and which are already made available to the public, typically on the agency's website. See, 5 U.S.C. § 552(a)(3); 40 C.F.R. § 2.101(c).

If no responsive records are identified for a specific property address, MyProperty will generate a "No Records Certificate."

If MyProperty identifies responsive records that you cannot retrieve them through MyProperty or if you need help with the MyProperty website, please contact EPA's FOIA Public Liaison at [hq.foia@epa.gov](mailto:hq.foia@epa.gov) or (202) 566-1667.

This letter concludes our response to your request. You may appeal this response by email at [hq.foia@epa.gov](mailto:hq.foia@epa.gov), or by mail to the EPA's National FOIA Office, U.S. EPA, 1200 Pennsylvania Avenue, N.W. (2310A), Washington, DC 20460 or through FOIAonline if you are an account holder. If you are submitting your appeal by hand delivery, courier service, or overnight delivery, you must address your correspondence to 1200 Pennsylvania Avenue, N.W., Room 5315, Washington, DC 20460. Your appeal must be in writing, and it must be received no later than 90 calendar days from the date of this letter. The Agency will not consider appeals received after the 90-calendar-day limit. Appeals received after 5:00 p.m. EST will be considered received the next business day. The appeal letter should include the FOIA tracking number listed above. For quickest possible handling, the subject line of your email, the appeal letter, and its envelope, if applicable, should be marked "Freedom of Information Act Appeal." Additionally, you may seek dispute resolution services from EPA's FOIA Public Liaison at [hq.foia@epa.gov](mailto:hq.foia@epa.gov) or (202) 566-1667, or from the Office of Government Information Services (OGIS). You may contact OGIS in any of the following ways: by mail, Office of Government Information Services, National Archives and Records Administration, Room 2510, 8610 Adelphi Road, College Park, MD 20740-6001; email, [ogis@nara.gov](mailto:ogis@nara.gov); telephone, (202) 741-5770 or (877) 684-6448; or fax, (202) 741-5769.

Cordially,



Larry F. Gottesman  
National FOIA Officer

## Mark Edwards

---

**From:** OCSD Records and Info Portal <ocsd@mycusthelp.net>  
**Sent:** Wednesday, May 8, 2019 2:12 PM  
**To:** atruong@  
**Subject:** Public Records Request :: P000881-050819

**This message originated outside your organization. Please use caution!**

---

--- Please respond above this line ---

Dear Angela,

The Orange County Sanitation District (OCSD) has completed its review of your May 08, 2019 Public Records Request.

### **Request Description:**

“Hello,

We are conducting a Phase I Environmental Site Assessment at a property in City of Cypress. There is no address associated with the property.

We are interested in obtaining documents related to the APNs:

- 241-091-22
- 241-091-23
- 241-091-24
- 241-091-25
- 241-091-26

Can you please notify us if you have any records?

Thank you.”

### **Request Determination:**

OCSD has reviewed its files and has determined that there are no responsive records associated with this request. If you have any questions regarding this request you may send a message via your Request Portal account or contact us directly at (714) 593-7050.

Sincerely,

Jana Gutierrez

Orange County Sanitation District

Please log in to review.

---

To monitor the progress or update this request please log into the [Public Records and Information Center](#).



## Mark Edwards

---

**From:** Orange County Public Records <orangecounty@public-records-requests.com>  
**Sent:** Friday, May 10, 2019 9:03 AM  
**To:** Angela Truong  
**Subject:** [External Message Added] Orange County public records request #19-1378

**This message originated outside your organization. Please use caution!**

---

-- Attach a non-image file and/or reply ABOVE THIS LINE with a message, and it will be sent to staff on this request. --

### Orange County Public Records

**Hi there**

A message was sent to you regarding record request #19-1378:

This is in response to your California Public Records Act request 19-1378, which OC Waste & Recycling received on May 8, 2019. The request seeks the following records:

"We are interested in obtaining documents related to the APNs: 241-091-22; 241-091-23; 241-091-24; 241-091-25; 241-091-26"

OC Waste & Recycling is not in possession of records responsive to your request. You may contact the Orange County Health Care Agency, which may have responsive records related to your request.

Here is contact information for the HCA custodian of records:  
(714) 834-3536 of COR@ochca.com

With this response, we consider your PRA request to OC Waste & Recycling closed.

Best regards,

Ruth Wardwell

**View Request 19-1378**

<http://orangecounty.nextrequest.com/requests/19-1378>



**POWERED BY NEXTREQUEST**

*The All in One Records Requests Platform*

*Questions about your request? Reply to this email or sign in to contact staff at Orange County.*

*Technical support: See our [help page](#)*

## Mark Edwards

---

**From:** Orange County Public Records <orangecounty@public-records-requests.com>  
**Sent:** Wednesday, May 8, 2019 2:24 PM  
**To:** Angela Truong  
**Subject:** [External Message Added] Orange County public records request #19-1377

**This message originated outside your organization. Please use caution!**

---

-- Attach a non-image file and/or reply ABOVE THIS LINE with a message, and it will be sent to staff on this request. --

### Orange County Public Records

**Hi there**

A message was sent to you regarding record request #19-1377:

This is in response to your California Public Records Act request. We are unable to process your request at this time. In order to fulfill your request

Please provide specific address(s) we do not do research using APN's

Please submit the form located at  
<http://www.ochealthinfo.com/eh/contact/request>

If you have any questions please call this office at (714) 433-6015.

**[View Request 19-1377](#)**

<http://orangecounty.nextrequest.com/requests/19-1377>





**POWERED BY NEXTRREQUEST**

*The All in One Records Requests Platform*

*Questions about your request? Reply to this email or sign in to contact staff at Orange County.*

*Technical support: See our [help page](#)*



**Jared Blumenfeld**  
Secretary for  
Environmental Protection



## Department of Toxic Substances Control

Meredith Williams, Ph.D.  
Acting Director  
8800 Cal Center Drive  
Sacramento, California 95826-3200



**Gavin Newsom**  
Governor

May 13, 2019

Angela Truong  
Roux Inc.  
[atruong@rouxinc.com](mailto:atruong@rouxinc.com)

**Public Records Request Number: 1-051019-13**

**Location(s): northwest corner of Katella Avenue and Winners Circle, Cypress, CA**

Dear Requestor:

The Sacramento office has received your Public Records Act Request for records from the Department of Toxic Substances Control (DTSC).

After a thorough review of our files, no records were found pertaining to the sites/facilities referenced above.

We would like to inform you about EnviroStor ([www.envirostor.dtsc.ca.gov](http://www.envirostor.dtsc.ca.gov)) which provides non-confidential, public access to DTSC's data management system and may assist with your future research. The system tracks our cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known or potential contamination, providing data and documentation of over 13,000 cleanup and hazardous waste facilities across California.

If you have any questions or would like further information regarding your request, please contact us at (916) 255-3758.

Sincerely,

Andrea Drushell  
Regional Records Coordinator



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700

[www.cypressca.org](http://www.cypressca.org)

May 14, 2019

Angela Truong  
Roux Associates  
5150 E Pacific Coast Hwy, Suite 450  
Long Beach, CA 90804

Dear Ms. Truong:

This letter is written in response to your Public Records Act request dated May 8, 2019 and received in my office on March 9, 2019, wherein you request that the City make available environmental records including underground storage tanks, aboveground storage tanks, "tiered" and/or other environmental permits, enforcement orders, and reports and correspondence related to site investigation/assessment, soil sampling, monitoring, cleanup/remediation, removal actions, closures, or any records related to conditions in air, soil, surface water, groundwater, or other environmental media regarding APNs 241-091-22, 241-091-23, 241-091-24, 241-091-25, and 241-091-26.

After a diligent search of records, the City has determined that there are no documents in its possession that would be responsive to your request.

If you have any additional questions, or need any additional assistance, please contact my office directly at (714) 229-6685.

Sincerely,

A handwritten signature in blue ink that reads "Alisha Farnell".

Alisha Farnell  
Acting City Clerk

**Stacy Berry, Mayor**

**Rob Johnson, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Jon E. Peat, Council Member**

**Mariellen Yarc, Council Member**

## Photographic Log



J-1. Looking west from the southwest corner of the Site (5/13/2019).



J-2. Looking southwest across Katella Avenue from the southwest corner of the Site (5/13/2019).





J-3. Looking east down Katella Avenue from the southwest corner of the Site (5/13/2019).



J-4. Looking west from the southeast corner of the Site along berm feature (5/13/2019).





J-5. Looking north from the eastern edge of the Site along Winners Circle (5/13/2019).



J-6. Looking west across the Site toward the adjacent Costco facility; unpaved surface with apparent base fill visible in foreground (5/13/2019).



J-7. Looking south along the eastern edge of the Site; elevation difference between Site and Winners Circle is visible (5/13/2019).



J-8. Looking north from the northern edge of the Site toward the adjacent parking lot (5/13/2019).





J-9. Looking northwest from the northwest corner of the Site (5/13/2019).



J-10. Looking south along the western edge of the Site with *de minimis* staining visible in foreground (5/13/2019).





J-11. Western adjacent retail businesses (5/13/2019).



J-12. Looking north across Site, with apparent boring location marked on pavement (5/13/2019).





J-13. Looking south across Site, with drainage swale visible in foreground and parked trucks visible in background (5/13/2019).



J-14. Looking southeast across unpaved portion of Site (5/13/2019).



J-15. Truck parking area of Site with recently patched boring visible in foreground (5/13/2019).



J-16. Looking north across Site, with geotechnical drilling operations visible (5/13/2019).





J-17. Transformer located in southwest portion of Site; transformer label indicates manufacturing date of January 2010 (5/13/2019).



J-18. Ponding liquid presumed to be irrigation water in the southwest portion of the Site (5/13/2019).





J-19. One of two drainage areas observed in the southern portion of Site (5/13/2019).



J-20. Cover of subsurface pipe labeled "LASCO PVC 8" " in southern portion of Site (5/13/2019).

## Personnel Qualifications



**TECHNICAL SPECIALTIES**

Professional Geologist with over twenty years of experience designing, managing, and implementing environmental soil and groundwater investigations and remediation strategies for public and private clients. Experience as in-house consultant assisting with management of a \$25MM yearly remediation portfolio for a Fortune 100 Company. Practice developing and implementing high-level strategies that consider legal and regulatory issues, communications and government relations, as well as technical challenges and costs. Significant assignments representing clients during Working Group meetings for Superfund sites and participation in technical committee meetings. Expertise in design and field implementation of in-situ chemical oxidation (ISCO) in hard rock and porous media-flow aquifers.

Substantial experience evaluating and remediating industrial, commercial and residential sites impacted with numerous contaminants in multiple media, including crude oil, fuels, volatile organic compounds, chromium VI, 1,4-dioxane, and PCBs. Extensive experience managing implementation of remediation programs that utilize and consider multiple technologies including soil vapor extraction, dual phase extraction, traditional pump and treat, in-well stripping, air sparging, chemical oxidation and reduction, thermal treatment, and natural attenuation. Experience managing large-scale remedial excavations involving the use of heavy earth moving equipment. Significant field experience using numerous drilling, soil sampling, groundwater sampling, and soil vapor sampling techniques.

**EXPERIENCE SUMMARY**

21 years of consulting experience: Principal Geologist with Roux Associates (2011 to Present); Senior Manager, Manager, and Senior Associate with ENVIRON International Corporation (2004 to 2011); Project Geologist with URS Corporation (2001 to 2004); Geologist with Hart Crowser (1998 to 2001).

**CREDENTIALS**

Bachelor of Arts, Earth Science, 1995  
University of California, Berkeley  
Professional Geologist, State of California, No. 07506  
OSHA 40-Hour Hazardous Waste Operations and  
Emergency Response (HAZWOPER) Certified  
Research Assistant to UC Berkeley Ph.D. Candidate Dawnika  
L. Blatter and Professor Ian S. E. Carmichael in Study of  
Continental Crustal Deformation from Subduction of the  
Cocos Plate in Western Mexico and Study of Upper  
Mantle Petrology in Central Mexico, January to April  
1996

**CONTINUING EDUCATION**

Compounds of Emerging Concern in Groundwater,  
California Groundwater Resources Association, Concord,  
California, February 2012

The Remediation Course, Princeton Groundwater, Las  
Vegas, Nevada, April 2010  
Vapor Intrusion Pathway: A Practical Guideline, Interstate  
Technology and Regulatory Council (ITRC) in  
conjunction with the California Department of Toxic  
Substances (DTSC) and California Water Boards, Long  
Beach, California, June 2009  
The Groundwater Pollution and Hydrology Course,  
Princeton Groundwater, Orlando, Florida, February 2007  
Hydrogeologic Analysis of Fractured Bedrock Systems,  
Midwest GeoSciences Group, University of Nevada Las  
Vegas and Nevada Test Site at Yucca Mountain, March  
2006

**TECHNICAL PRESENTATIONS**

*Prevalence and Persistence of Hexavalent Chromium During In-Situ  
Chemical Oxidation of Trichloroethylene with Permanganate*,  
Antony D. G. Jones and Carol L. Serlin, ENVIRON,  
Irvine, CA; Mauricio H. Escobar, ENVIRON, Los  
Angeles, CA; George D. Havalias and Maria C. Echarte,  
American Analytics, Inc., Chatsworth, CA. The 19th  
Annual AEHS Meeting and West Coast Conference on  
Soils, Sediments, & Water, San Diego, California, March  
2009

*Assessment of Microbial Community Composition Throughout In-Situ  
Chemical Oxidation of Trichloroethylene with Permanganate*,  
Bram Sercu and Patricia Holden, UCSB, Santa Barbara,  
CA; Antony D. G. Jones and Carol L. Serlin, ENVIRON,  
Irvine, CA; Mauricio H. Escobar, ENVIRON, Los  
Angeles, CA. The 19th Annual AEHS Meeting and West  
Coast Conference on Soils, Sediments, & Water, San  
Diego, California, March 2009

*Evaluation of the Effects of ISCO on TCE Impacted Ground Water  
in Weathered Granitic Mass*, Mauricio H. Escobar,  
ENVIRON, Los Angeles, CA; Antony D. G. Jones and  
Carol L. Serlin, ENVIRON, Irvine, CA. The 6th  
International Conference on Oxidation and Reduction  
Technologies for In-Situ Treatment of Soil and  
Groundwater, San Diego, California, September 2008

*Assessing Sources of Hexavalent Chromium during In-Situ Chemical  
Oxidation of Trichloroethylene with Permanganate*, Antony D.  
G. Jones and Carol L. Serlin, ENVIRON, Irvine, CA;  
Mauricio H. Escobar, ENVIRON, Los Angeles, CA.  
The 6th International Conference on Oxidation and  
Reduction Technologies for In-Situ Treatment of Soil  
and Groundwater, San Diego, California, September 2008

*Aggressive DNAPL Remedial Program Replaces Conventional Methods  
and Facilitates Property Transaction*, Mauricio H. Escobar, Bita  
Tabatabai, and Douglas Jones, ENVIRON, Irvine, CA.  
The 4th International Conference on Oxidation and  
Reduction Technologies for In-Situ Treatment of Soil and  
Groundwater, Chicago, Illinois, October 2005



**KEY PROJECTS**

• **PRP Representation of Fortune 100 Company, Omega Chemical Superfund Site, Whittier, California**

Provide ongoing technical consulting to a Fortune 100 Company and major PRP at the Omega Chemical Superfund Site in Whittier, California. Active participant of the Omega PRP Group (OPOG) Technical Committee. Attend all pertinent technical meetings and provide Client with technical and strategic input that protects their best interests. Maintain constant interaction with the legal and finance teams as necessary to ensure the technical and legal strategies are in agreement and that adequate funding is reserved well in advance of regulatory commitments and OPOG cash calls. Pertinent technical issues include soil gas and vapor intrusion, and a regional groundwater plume. Regulatory oversight is provided by USEPA Region IX.

• **PRP Representation of Fortune 100 Company, BKK Corporation Class I Landfill Organized Group, West Covina, California**

Provide ongoing technical consulting to a Fortune 100 Company at the former BKK Corporation Class I Landfill site in West Covina, California. Participant in the BKK Technical Committee and attendant of pertinent technical meetings. Maintain constant communication with the Client's legal and finance teams and responsible for informing Client on the direction the Organized Group is headed. Responsible for identifying financial commitments made as part of technical decisions. Trusted with voicing opinions, concerns, and/or offering direction to the Group (if and when necessary), to ensure the Organized Group's direction is consistent with the Client's strategy. Pertinent technical issues include upgrades to the landfill infrastructure and groundwater remedial investigations in and around the landfill prism. Regulatory oversight is provided by the Department of Toxic Substances Control.

• **Portfolio Project Control – Fortune 100 Company, Torrance, CA**

Three years of experience working as a full-time in-house consultant for a Fortune 100 Company assisting with management of all aspects of a complex multi-site portfolio. General role included communication with alliance partners, vendors, corporate finance, attorneys, public relations/communications, and procurement to track and facilitate progress of 9 major projects (\$400,000 to \$1 MM/year) and 3 mega projects (\$3MM to \$10MM+/year) that were unique in nature and complexity. Portfolio included former chemical sites, landfills, aerospace facilities, and other heavy use industrial facilities that were undergoing State and RCRA closure, as well as sites under CERCLA Superfund actions with PRP commitments. Charged with helping to develop, evaluate, and refine remedial strategies and lifecycle costs for sites

that utilized various cleanup technologies such as application of oxidants and reducing agents, thermal oxidation, groundwater pump and treat, dual-phase and 2-PHASE™ extraction, soil vapor extraction, air sparging, and in-well air stripping. Major role included verifying adequate funding and maintaining documentation consistent with Sarbanes Oxley.

• **Strategy Expert Consulting – Fortune 100 Company, Los Angeles, CA**

Ongoing third-party technical and strategic support to a Fortune 100 company for a major project involving former bulk storage and distribution facilities converted to open public space and residential uses. Site is undergoing remedial investigations and remedial alternatives evaluations under heavy regulatory and public scrutiny. Charged with providing opinions and recommendations as to the direction the current consultant and the regulatory agencies want to take the project and evaluating the conceptual site model and long term technical strategy. Active participant on technical team calls and ongoing direct communications with internal legal team.

• **Shipyard Decommissioning – Subsurface Assessment, Remedial Investigation, Demolition and Closure, Campbell Shipyard – Marco, Port of San Diego, California.**

Lead geologist in the preparation of a comprehensive subsurface study of the former Campbell Shipyard property at the Port of San Diego, California. Over 200 borings were necessary to delineate the extent of impacted soils. Relevant environmental issues included a former coal works gasification plant immediately adjacent to the Site, a 2 to 4-foot thick lens of polynuclear aromatic hydrocarbon (PAH) laden sediment present throughout the Site below the water table, a former on-site diesel and kerosene tank farm, and numerous leaking fuel USTs. Responsibilities also included management of shipyard abandonment activities, such as abatement of asbestos and lead-based paint containing materials, demolition of on-site structures, crushing of asphalt and concrete into Class II base, and a comprehensive geophysical survey to locate all on-site utilities and buried structures. The work was performed under the regulatory oversight of the San Diego Regional Water Quality Control Board and the San Diego Unified Port District. Total cost of the work was approximately \$1.3MM, implemented over a 15 month period.

• **Neutral Third Party Oversight of Remediation Work, ITT Corporation and Home Depot, Glendale, California.**

Provided third party oversight for a site undergoing major remediation of VOCs and chromium VI in soils and

groundwater. The site was a former electronics manufacturing facility redeveloped as a major box retailer in Glendale, California. Services were provided on behalf of the former facility owners/operators and the current property owners, both of whom had differing interests and views on the remedial work being performed. Viewed all fieldwork and construction of remediation systems and attended quarterly meetings with consultants, attorneys, and clients to gauge progress, discuss ongoing work, and evaluate projected schedules for completion of remediation. Technical challenges to remediation included dewatering of 20-foot thick perched zone impacted with VOC contamination, despite a leaking slurry wall originally designed to prevent onsite migration from upgradient sources.

- **ISCO Demonstration Plan Using Permanganate, Wyle Laboratories, Riverside County, California.**

Designed, managed, and implemented an ISCO Demonstration Plan using sodium permanganate injection at a former industrial manufacturing facility in Southern California. Main goals of the application were to demonstrate effective oxidation of trichloroethene (TCE) in alluvium and fractured granitic bedrock, evaluate potential mobilization of naturally occurring reduced metals, and evaluate the potential application of ISCO at other areas of the Site, including off-site beneath residential homes. Twelve thousand gallons of 10% permanganate solution were delivered to the subsurface through 47 multi-depth permanent injection probes over a 22 day field event. TCE concentrations were reduced from a maximum of 30,000 microgram per liter ( $\mu\text{g/L}$ ) to non-detect at the source area. Significantly, elevated hexavalent chromium [Cr(VI)] concentrations were observed in the area of injection and immediately downgradient.

Following field observations, a Bench Scale Assessment (BSA) was conducted to evaluate potential significant sources of Cr(VI), evaluate the capacity of the aquifer to naturally attenuate Cr(VI), and provide data sufficient to estimate distance and time Cr(VI) would revert to its trivalent form. BSA and field data showed that principal source of Cr(VI) was from the raw product, with secondary contribution from chromium in the native rock, and deterioration of stainless steel well screens. Natural attenuation of Cr(VI) to background concentrations was estimated at 2 to 3 years post injection. Monitoring of the Demonstration Plan area for the 2+ years has proved those predictions accurate and a Remedial Action Plan (RAP) recommending full-scale on- and off-site treatment of TCE with permanganate was submitted to the California Department of Toxic Substances Control (DTSC). Total cost of the work was \$1.0MM+.

- **Remedial Excavation and ISCO Used to Facilitate Property Transfer, Sanmina, Inc., Irvine, California.**

Managed and implemented an aggressive remedial strategy for a former electronics manufacturing facility in Southern California. The site had TCE concentrations in groundwater suggestive of dense non-aqueous phase liquid (DNAPL) and required expedited soil and groundwater remediation, in lieu of ongoing 2-PHASE™ and dual-phase extraction (DPE) efforts, to accommodate its divestiture and redevelopment. Groundwater was generally encountered at 15 feet below ground surface (bgs) and contained TCE concentrations in the source area as high as 77,000  $\mu\text{g/L}$ . The project was successfully completed by installing a 90-well dewatering system, excavating 13,000 cubic yards (cy) of soils, and removing 3,200 cy of TCE impacted soil along the axis of a residual TCE DNAPL mass; total depth of the excavation was 32 feet bgs. ISCO using sodium and potassium permanganate was used to remediate residual TCE-impacted soil and groundwater outside the area of excavation. Following implementation of the aggressive remedial strategy, TCE concentrations in groundwater were reduced by one to three orders of magnitude, suggesting the DNAPL had been removed and/or destroyed. The Orange County Health Care Agency (OCHCA) provided soils closure and the Santa Ana Regional Water Quality Control Board provided groundwater closure for the site 16 months after completion of remediation. The site was sold and redeveloped. Total cost of excavation and ISCO application was approximately \$1.4MM.

- **Assessment, Remediation and Closure of Former Industrial Facility for Residential Re-development, Former Boeing Plant, Los Angeles, California.**

Managed the assessment, remediation, and closure of a former asphalt batch plant and defense contractor facility on behalf of a residential developer. The work was performed simultaneously with planning and entitlement of the property, under the oversight of the County of Los Angeles Fire Department, Hazardous Materials Division. Unique challenges included the discovery of 15+ feet of buried asphalt debris and soils with elevated arsenic and chromium concentrations requiring off-site disposal. Developed site-specific cleanup thresholds for VOCs and heavy metals by preparing a limited human health risk assessment and incorporating Risk Based Screening Levels (RBSLs) developed by the San Francisco Regional Water Quality Control Board. The entire project was implemented in 15 months from initial assessment to site closure at a cost of \$250,000.

- **Hydrocarbon Release Characterization and Remedial Investigation, Kinder Morgan Energy Partners, La Habra, California.**

Designed, managed, and implemented a subsurface investigation with the primary focus of characterizing lateral and vertical distribution of hydrocarbon impacts to the groundwater and unsaturated zone. The release was related to a pipeline booster station flange rupture dating to the early 1980s. Fractured siltstone bedrock presented unique subsurface conditions and as a result, special consideration was given to drilling techniques and boring/well installations. The project involved 12 months of fieldwork for the installation of soil vapor probes, backhoe trenches, soil borings, and monitoring wells. Discovery of up to 15-feet of light non-aqueous phase liquids (LNAPL) resulted in amendments to the original work scope to provide for LNAPL removal and assessment of pneumatic and hydraulic properties of the soil/rock. A high vacuum DPE test was performed at selected wells to evaluate the feasibility of this technology for the removal of hydrocarbons. All work was conducted under the oversight of the Los Angeles Regional Water Quality Control Board in consideration of future residential development. Work was performed over a 2 year period at an approximate cost of \$1.0MM.

- **Resource Conservation and Recovery Act (RCRA) Facility Investigation Work Plan for Bunker C Tank Farm Redevelopment, Long Beach, California.**

Managed the preparation of a RCRA Facility Investigation Work Plan for a former power plant tank farm facility in Long Beach, California. The site was being planned for redevelopment with a retail box store and restaurant uses. The RFI Work Plan was prepared as part of a Corrective Action Consent Agreement between the Client and the DTSC. The purpose of the RFI was to determine the nature and extent of releases at the site and to gather all the necessary data to support completion and implementation of a Corrective Measures Study (CMS).

- **Remedial Investigation of Former Transformer Washing Facility, General Electric and City of Los Angeles Redevelopment Agency, Los Angeles, California.**

Prepared, managed, and implemented a Remedial Investigation Work Plan for a former transformer washing facility under the oversight of the DTSC. The field investigation was intended to evaluate and delineate the nature and extent of residual VOC, PCB, and dioxin impacts at the Site, to support decisions regarding the need for, and extent of, future removal or remedial actions. The field program showed that shallow soils at the site were significantly impacted with PCBs and deep soils and groundwater were significantly impacted with TCE and tetrachloroethene (PCE). ISCO Demonstration Plan Using Permanganate, Riverside County, California.

- **Remedial Investigation and Remedial Action Plan for Former Small Arms Firing Range, City of Huntington Beach Community Development Office, Huntington Beach, California.**

Managed the preparation of a Remedial Investigation and RAP for the City of Huntington Beach in their effort to assess the extent of contamination and remedial options for a former public and police firing range. The project was performed under the oversight of the OCHCA. Relevant issues included soil berms and coal-tar treated wood posts impregnated with lead-shot, shallow landfill conditions (<5-feet), lack of a landfill cap, heavy hydrocarbon contamination, and landfill gas issues. The RAP included remedial options, costing, and an outline for implementation. Special consideration was given to the fact that the City intended to use the property for future Central Park recreational uses. The project was awarded on technical merit following a public bidding process that required the submittal of a formal proposal and interviews with City officials. Total cost of the project was \$150,000, implemented over a 2 year period.

### EXPERIENCE SUMMARY

Joined Roux's Long Beach office in September 2018. Previously worked as a Graduate Student Researcher at the University of California at Santa Barbara, culminating in an M.S. in Geochemistry in September 2018.

### CREDENTIALS

M.S. Earth Science with concentration in Geochemistry, University of California at Santa Barbara, September 2018

B.S. Earth Science with concentration in Climate and Environment (with Honors), University of California at Santa Barbara, June 2014

Geologist in Training (GIT) Certificate, March 2019

OSHA HAWZOPER 40-hour training completed September 2018 (29 CFR 1910.120)

AQMD Fugitive Dust Control Certificate issued January 2019

### RELEVANT COURSEWORK

Graduate: Mathematical Methods in Earth Science (Matlab), Soil Genesis, Isotope Geochemistry

Undergraduate: Sedimentation and Stratigraphy, The Earth from Above (Remote Sensing), Introduction to Geological and Geophysical Data Analysis, Introduction to Geographic Information Systems, Introduction to Geochemistry, Geomaterials (Mineralogy), Geological Applications of GIS, Fundamentals of Structural Geology, Field Studies in Geological Methods, Earth's Climate: Past and Present, Earth System: Ocean-Atmosphere

### ADDITIONAL EXPERIENCE

Graduate research experience at UCSB includes geochemical analysis and lab work, specifically quantitative EPMA characterization, measurement of isotopic ratios using (LA)ICP-MS and TIMS, and wet chemistry in Class-1000 clean-lab environments.

Performed a summer research internship at the University of Chicago in 2014 assisting with experimental photo-oxidation of reduced iron in an aqueous solution to simulate and study the origins of Banded Iron Formations.

As an undergraduate student, completed a research project while at the University of Copenhagen investigating the redox-sensitive trace-element signatures of Neoproterozoic carbonates from the Wonoka Formation, Australia.

### ACADEMIC HONORS

UCSB Earth Research Institute Summer Research Fellowship (June 2017)

UCSB Department of Earth Science Graduate Opportunity Award (May 2017)

UCSB Department of Earth Science Global Field Travel Fund Award (May 2017)

UCSB Department of Earth Science Preston Cloud Memorial Award (May 2017)

UCSB Department of Earth Science Outstanding Academic Achievement Award (June 2014)

UCSB Department of Earth Science Outstanding Graduating Senior Award (June 2014)

University of California Regent's Scholar (September 2009 – June 2013)

### PUBLICATIONS AND PRESENTATIONS

**Edwards, M;** Jackson, M; Kylander-Clark, A.; Harvey, J.; Hagen-Peter, G.; Seward, G.; Till, C.; Adams, J.; Cottle, J.; Hacker, B.; Spera, F (2019). Extreme enriched and heterogeneous  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios recorded in magmatic plagioclase from the Samoan hotspot. Earth and Planetary Science Letters.

**Edwards, M;** Jackson, M; Kylander-Clark, A; Cottle, J; Harvey, J; Seward, G (2017).  $^{87}\text{Sr}/^{86}\text{Sr}$  heterogeneity in OIB-hosted plagioclase. Interior of the Earth Gordon Research Conference, Mount Holyoke.

### ROUX KEY PROJECTS

- Air Monitoring for Geotechnical Drilling at Superfund Site  
Field geologist responsible for performing worker breathing zone and perimeter air monitoring at a Superfund site in Santa Fe Springs, CA.
- Phase II Investigation of Vacant Property  
Field geologist for Phase II investigation of vacant property in Norwalk, CA. Conducted soil, stockpile, and soil vapor sampling across the site, including an area with suspected illegal dumping impacts.
- Fecal Coliform Groundwater Monitoring  
Responsible for overseeing quarterly groundwater monitoring and reporting for a site in Malibu, CA under RWQCB oversight.
- Stormwater Sampling and Facility Inspections  
Perform ongoing monthly facility inspections and stormwater sampling at two cryogenic gas manufacturing plants in Los Angeles County, CA. Assist with uploading stormwater results to SMARTS and drafting annual reports.



## APPENDIX G

# WATER QUALITY MANAGEMENT PLAN AND HYDROLOGY AND HYDRAULICS STUDY



**This page intentionally left blank**





**WQ XX-XXXX**



## **County of Orange/Santa Ana Region Priority Project**

### **Water Quality Management Plan (WQMP)**

Project Name:

#### **Cypress Mixed Use**

**4961 KATELLA AVENUE, CYPRESS, CA 241-091-22, 241-091-23, 241-091-24, 241-091-25, 241-091-26**

Prepared for:

#### **Shea Properties**

**130 Vantis, Suite 200  
Aliso Viejo, CA 92656  
949-389-7286**

Prepared by:

#### **Kimley-Horn**

**765 The City Drive South  
Orange, Ca 92868  
714-786-6275, [Brian.Gillis@kimley-horn.com](mailto:Brian.Gillis@kimley-horn.com)**

**July 2019**

**Revised August 21, 2019**

**Kimley»Horn**

<b>Project Owner's Certification</b>			
Planning Application No. (If applicable)		Grading Permit No.	
Tract/Parcel Map and Lot(s) No.	96-121	Building Permit No.	
Address of Project Site and APN (If no address, specify Tract/Parcel Map and Lot Numbers)			4961 Katella Avenue, Cypress, CA 241-091-22, 241-091-23, 241-091-24, 241-091-25, 241-091-26

This Water Quality Management Plan (WQMP) has been prepared for Shea Properties by Kimley-Horn. The WQMP is intended to comply with the requirements of the County of Orange NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan, including the ongoing operation and maintenance of all best management practices (BMPs), and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

<b>Owner:</b>			
Title	Elizabeth Cobb		
Company	Shea Properties		
Address	130 Vantis, Suite 200 Aliso Viejo, Ca 92656		
Email	Elizabeth.cobb@sheaproperties.com		
Telephone #	949-389-7286		
I understand my responsibility to implement the provisions of this WQMP including the ongoing operation and maintenance of the best management practices (BMPs) described herein.			
Owner Signature		Date	



**Water Quality Management Plan (WQMP)**  
**Cypress Mixed Use**

<b>Preparer (Engineer):</b>			
Title	Brian Gillis	PE Registration #	63021
Company	Kimley-Horn and Associates		
Address	765 The City Drive South Orange Ca 92868		
Email	Brian.gillis@kimley-horn.com		
Telephone #	714-786-6275		
I hereby certify that this Water Quality Management Plan is in compliance with, and meets the requirements set forth in, Order No. R8-2009-0030/NPDES No. CAS618030, of the Santa Ana Regional Water Quality Control Board.			
Preparer Signature		Date	
Place Stamp Here			

## Contents

Section I	Permit(s) and Water Quality Conditions of Approval or Issuance.....	1
Section II	Project Description.....	3
Section III	Site Description.....	10
Section IV	Best Management Practices (BMPs) .....	13
Section V	Inspection/Maintenance Responsibility for BMPs.....	30
Section VI	BMP Exhibit (Site Plan).....	35
Section VII	Educational Materials.....	36

## Appendices

Attachment A.....	303d List Of Impaired Water Bodies
Attachment B.....	County Soils And Rainfall Maps
Attachment C.....	Geotechnical Report
Attachment D.....	Groundwater Feasibility
Attachment E.....	Calculations
Attachment F.....	Education Materials
Attachment G.....	O&M Plan
Attachment H.....	Conceptual WQMP Site Plan
Attachment I.....	Transfer of Responsibility

## Section I Permit(s) and Water Quality Conditions of Approval or Issuance

Project Information	
Permit/ Application No. (If applicable)	Grading or Building Permit No. (If applicable)
Address of Project Site (or Tract Map and Lot Number if no address) and APN	4961 Katella Ave, Cypress, CA 241-091-22, 241-091-25 241-091-23, 241-091-26 241-091-24
Water Quality Conditions of Approval or Issuance	
Water Quality Conditions of Approval or Issuance applied to this project. (Please list verbatim.)	Currently there are no Water Quality Conditions of Approval applied to this Project.
Conceptual WQMP	
Was a Conceptual Water Quality Management Plan previously approved for this project?	Yes, a previously approved WQMP was prepared by Development Resource Consultants, Inc. in July 13, 2007. The project has changed in nature from retail-only to a mixed-use development including retail, hotel, and multi-family residential uses.

<b>Watershed-Based Plan Conditions</b>	
Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.	The Project falls within the San Gabriel – Coyote Creek Watershed. There are no applicable TMDLS for the receiving water body

## Section II Project Description

### II.1 Project Description

Description of Proposed Project				
Development Category (From Model WQMP, Table 7.11-2; or -3):	Redevelopment Project, Higher Density, In-Fill and Mixed Use			
Project Area (ft <sup>2</sup> ): 580,619	Number of Dwelling Units: 251		SIC Code: 5900, 7011, 7830, 5812,	
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	1.33	10%	12.00	90%
Post-Project Conditions	1.33	10%	12.00	90%
Drainage Patterns/Connections	<p><b>Existing Conditions:</b></p> <p>In the existing condition, the site is a portion of an existing asphalt parking lot serving LARC that extends to the without a visible demarcation of the property line. The overall parking lot area drains to two separate concrete ribbon gutters that flow from north to south. The parking lot pavement sheet flows in east/west orientations to the two ribbon gutters along the length of each gutter.</p> <p>Each gutter terminates at separate existing catch basins that connect to an existing City 48" storm drain that runs on the north edge Katella Avenue from east to west. These catch basins are located in within the proposed Project site boundary. Run-off in excess of the capacity of inlets ponds up in the parking lot before ultimately overflowing and discharging overland at an existing driveway into the Katella Avenue curb and gutter. The on-site ponding is limited to 12 to 18 inches. The ponding has little to no detention effects during large storm events – the 100-year peak will essentially pass through the driveway into the street in the existing condition.</p>			

The on-site portion of the existing parking lot is approximately 13.3 acres in area. The off-site area tributary to the ribbon gutters upstream of the site is approximately 11.8 acres. The 13.3-acre Project site area is relatively flat generally sloping from the north to the south with approximately 2 feet of fall across the site.

An existing storm drain in Winner's Circle accommodates street drainage. The approved storm drain plan for the Winner's Circle storm drain depicts a proposed extension to the north, past the end of the cul-de sac, and then west across the existing parking lot. The drain would be located just north of the Project site. Only the portion of the drain in Winner's Circle was actually constructed. The proposed drain extension is designed to accommodate the restricted flows (0.3 cfs/acre) from the property north of the Project site.

**Proposed Conditions:**

In the proposed condition, drainage will flow away from the proposed buildings and into one of several low points across the site, as depicted on the water quality site plan. Runoff will be collected into an on-site private underground storm drain system. The allowable discharge from the site is restricted to 0.3 cfs/acre per City requirements. To accommodate developed peak flows that exceeds the allowable discharge, the project storm water management system incorporates on-site underground detention basins. These detention basins have been designed to attenuate the 100-year storm event peak flow difference between the developed flow from the project and allowable discharge flow. See the proposed water quality site plan for the conceptual locations of the basins. A storm drain pump will be used to drain the detention systems and meet the 0.3 cfs/acre runoff restriction by limiting the pump discharge to 4.0 cfs. The site will ultimately discharge via a new storm drain connection to the existing 48" Katella storm drain. A hydrodynamic separator will be installed upstream of the detention system to remove trash and debris prior to entering into the system.

In addition to the site high-flow detention system, a low-flow detention system will be installed to capture and treat the "first flush" storm event. A bifurcation manhole will be placed upstream of the first flush detention system and divert the first flush volume into a separate detention system. This system will be pumped separately and the runoff will slowly discharge through a manufactured bioretention system over a 48-hour period. The outlet pipe from the biofiltration

	<p>system will connect separately to the existing 48" Katella Avenue storm drain.</p> <p>The existing off site flows draining toward the site will be captured by extending the Winner's Circle drain, per the approved plans, to two proposed catch basins along the north property line and routed through a proposed 18" storm drain running east, ultimately connecting to the existing 24" storm drain in Winners Circle. In the event run-off from the area north of the site exceeds the capacity of the catch basins and drain, proposed curb and gutter and an approximately 2' high berm installed north of the property line will block offsite flow from entering the site. The off-site flows will pond approximately 1.25' along the north property line before discharging to the west, into Siboney Street, ultimately flowing overland to the south into Katella Avenue. This will be a temporary condition until the area to the north has been developed and a storm water management and detention system is constructed for the future development. The storm water management system for the future site will likely connect to the extended Winner's Circle storm drain.</p> <p>The runoff diverted around the site in the proposed condition would have reached Katella Avenue in the existing condition at a similar location. Instead of overflowing at the existing catch basins and running off through the existing project driveway, the overflows will instead flow into Katella Avenue at Siboney Street. Since the on-sit portion of the area tributary to Katella Avenue is limited to 4.0 cfs connecting directly into the storm drain, the amount of flows that will reach the Katella Avenue curb and gutter is greatly reduced compared to the existing condition.</p>
<p>Narrative Project Description: (Use as much space as necessary.)</p>	<p>This development is a is a proposed retail, theater, multi-family, and hotel site. The site is bounded by an existing parking lot to the north, Winner's Circle on the east, Katella Avenue to the south, and Siboney Street to the west. This development is comprised of approximately 63,795 SF of general commercial, 96,800 SF (120 keys) of hotel, and 251 multi-family apartments. The surface parking field within the interior of the site will serve the hotel, retail and restaurant customers; while and above ground parking structure will accommodate the parking needs of the residential units. The site consists of approximately 13.3 acres.</p>

The Site includes several buildings, interconnected parking lots and drive aisles, pedestrian hardscape improvements, and typical commercial landscaping throughout, including the site perimeter and within parking lot islands. Parking stalls and drive aisles typically consist of asphalt pavement with limited areas of decorative interlocking pavers at the site entrances. Hardscape typically consists of concrete with area of pedestrian interlocking pavers. The landscaped areas within the parking lot areas include typical commercial-style landscape. The perimeter landscape along all four sides also consists of typical commercial landscape. These areas are relatively flat.

No depressed loading docks are proposed, though at-grade loading areas will be present throughout the site. Outdoor trash enclosures are proposed for the non-residential uses and the residential trash will be internal to the residential parking structure area. For preparation area are anticipated in the commercial buildings (tenant spaces are not yet conformed), the theater building, and the hotel building. Material and outdoor storage areas are not anticipated.

Outdoor activities generally include parking, outdoor dining areas, common areas and seated areas; no outdoor storage area, vehicle maintenance, washing or repair areas, or fuel stations are proposed.

## II.2 Potential Stormwater Pollutants

Pollutants of Concern			
Pollutant	Check One for each: E=Expected to be of concern N=Not Expected to be of concern		Additional Information and Comments
Suspended-Solid/ Sediment	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to landscape.
Nutrients	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to landscape.
Heavy Metals	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to parking lots.



Pathogens (Bacteria/Virus)	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to parking lots and food uses.
Pesticides	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to landscape.
Oil and Grease	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to parking lots.
Toxic Organic Compounds	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Due to parking lots and commercial development type.
Trash and Debris	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	

### **II.3 Hydrologic Conditions of Concern**

☒ No – Show map

☐ Yes – Describe applicable hydrologic conditions of concern below. *Refer to Section 2.2.3 in the Technical Guidance Document (TGD).*

The site is located at the edge of the hydromodification boundary line as defined the in Orange County Technical Guidance Document. The area just east of the site drains easterly toward a hydromodification-susceptible watershed. The site connects to a storm drain system that drains westerly toward the Coyote Creek/San Gabriel River water shed that is not susceptible to hydromodification. The site not in a hydromodification zone; therefore, only the 100-year storm is analyzed.

See Appendix B for Map

### **II.4 Post Development Drainage Characteristics**

In the proposed condition, drainage will flow away from the proposed buildings and into one of several low points across the site, as depicted on the water quality site plan. Runoff will be collected into an on-site private underground storm drain system. The allowable discharge from the site is restricted to 0.3 cfs/acre per City requirements. To accommodate developed peak flows that exceeds the allowable discharge, the project storm water management system incorporates on-site underground detention basins. These detention basins have been designed to attenuate the 100-year storm event peak flow difference between the developed flow from the project and allowable discharge flow. See the proposed water quality site plan for the conceptual locations of the basins. A storm drain pump will be used to drain the detention systems and meet the 0.3

cfs/acre runoff restriction by limiting the pump discharge to 4.0 cfs. The site will ultimately discharge via a new storm drain connection to the existing 48" Katella storm drain. A hydrodynamic separator will be installed upstream of the detention system to remove trash and debris prior to entering into the system. In the event of pump failure, the overflows will drain into the Katella Avenue street section, as in the existing condition, with a maximum of 18 inches of ponded depth before flows break over into the street.

In addition to the site high-flow detention system, a low-flow detention system will be installed to capture and treat the "first flush" storm event. A bifurcation manhole will be placed upstream of the first flush detention system and divert the first flush volume into a separate detention system. This system will be pumped separately and the runoff will slowly discharge through a manufactured bioretention system over a 48-hour period. The outlet pipe from the biofiltration system will connect separately to the existing 48" Katella Avenue storm drain.

The existing off site flows draining toward the site will be captured by extending the Winner's Circle drain, per the approved plans, to two proposed catch basins along the north property line and routed through a proposed 18" storm drain running east, ultimately connecting to the existing 24" storm drain in Winners Circle. In the event run-off from the area north of the site exceeds the capacity of the catch basins and drain, proposed curb and gutter and an approximately 2' high berm installed north of the property line will block offsite flow from entering the site. The off-site flows will pond approximately 1.25' along the north property line before discharging to the west, into Siboney Street, ultimately flowing overland to the south into Katella Avenue. This will be a temporary condition until the area to the north has been developed and a storm water management and detention system is constructed for the future development. The storm water management system for the future site will likely connect to the extended Winner's Circle storm drain.

The runoff diverted around the site in the proposed condition would have reached Katella Avenue in the existing condition at a similar location. Instead of overflowing at the existing catch basins and running off through the existing project driveway, the overflows will instead flow into Katella Avenue at Siboney Street. Since the on-sit portion of the area tributary to Katella Avenue is limited to 4.0 cfs connecting directly into the storm drain, the amount of flows that will reach the Katella Avenue curb and gutter is greatly reduced compared to the existing condition.

The site LID requirement, for the 85<sup>th</sup> percentile, 24-hour storm, will be met through the installation of a Modular Wetlands proprietary biofiltration unit. The DCV will be diverted and detained in a separate detention system and discharged over 48 hours to the proposed Modular Wetland Unit. Due to the shallow groundwater at the site, infiltration is infeasible.

## **II.5 Property Ownership/Management**

Shea Properties will be the owner, builder and manager of the proposed retail and residential, which is being designed as a "Class A" apartment. The proposed hotel site will be sold to hotel developer/operator. A CC&R or REOA document and property owner's association (POA) will be established for common area maintenance and operations. The POA will fund and be responsible for maintenance.

## Section III Site Description

### III.1 Physical Setting

Name of Planned Community/Planning Area (if applicable)	Cypress Business & Professional Center Specific Plan (CBPC-SP)
Location/ Address	North East corner of Siboney Street and Katella Avenue.
	4961 Katella Avenue, Cypress CA
General Plan Land Use Designation	Professional Office
Zoning	Mixed Use Commercial/Residential
Acreage of Project Site	13.33
Predominant Soil Type	Hydrologic Soil Group D (per geotechnical report)

### III.2 Site Characteristics

Site Characteristics	
Precipitation Zone	Design Capture Storm Depth 0.85" (24 Hr, 85 <sup>th</sup> Percentile Rainfall)
Topography	The existing site topography is very flat with an average slope in the north-south direction of 0.1% and a fall of approximately one foot.
Drainage Patterns/Connections	In the existing condition, the site drains to two ribbon gutters that run in a north/south orientation. Both gutters convey drainage from the parking lot area to the north of the Project. Each gutter terminates at an existing catch basin that connected to an existing City 48" storm drain that runs on the north edge

	Katella Avenue from east to west. The existing storm drain system discharges into a Bolsa Chica Channel.
Soil Type, Geology, and Infiltration Properties	Hydrologic Soil Group D. It has a minimal infiltration rate when thoroughly wetted.
Hydrogeologic (Groundwater) Conditions	The historic high groundwater is less than 5 feet below ground surface. The depth to seasonal high groundwater table beneath the project falls within the normal high range and precludes infiltration.
Geotechnical Conditions (relevant to infiltration)	Infiltration is not recommended due to high ground water levels.
Off-Site Drainage	The project site will intercept off-site drainage from the parking lot to the north and will be conveyed through a separate offsite storm drain pipe that will be diverted around the proposed BMPs so that it is not treated. The offsite pipe will discharge into an existing storm drain pipe in Winner's Circle. The off-site flows will not be detained or treated.
Utility and Infrastructure Information	<p>There are existing public water mains in Katella Avenue, Winner's Circle and private Siboney Street along the project frontages.</p> <p>The City has an 18-inch VCP sewer main in Katella Avenue sloping from east to west along the Project frontage and an 8-inch sewer in Winner's Circle sloping from north to south that connects into the Katella sewer. Implementation of the proposed Mixed-Use development is not anticipated to create any new impacts or require additional wastewater treatment beyond what has already been anticipated in the General Plan and the Cypress Business and Professional Center Specific Plan EIR.</p> <p>There is a 39-inch RCP storm drain in Katella Ave that slopes from east to west. Two on-site catch basins connect to this storm pipe. The City also has a 24-inch storm drain in Winner's Circle. In total, flows from the site into the City storm drain system will be limited to a maximum of 0.3 cfs/acre of on-site area.</p>

### III.3 Watershed Description

**Water Quality Management Plan (WQMP)**  
**Cypress Mixed Use**

Receiving Waters	San Gabriel River, Reach 1, Estuary
303(d) Listed Impairments	Copper, Dioxin, Indicator Bacteria, Nickel, Dissolved Oxygen, pH, Temperature
Applicable TMDLs	Metals (Copper)
Pollutants of Concern for the Project	Suspended-Solid/ Sediment, Nutrients, Heavy Metals, Oil and Grease, Pesticides, Pathogens (Bacteria/Virus), Toxic Organic Compounds and Trash and Debris.
Environmentally Sensitive and Special Biological Significant Areas	Not applicable

## Section IV Best Management Practices (BMPs)

### IV. 1 Project Performance Criteria

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	N/A	

<b>Project Performance Criteria</b>	
If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)	N/A
List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)	Infiltrate, harvest and reuse, evapotranspiration, or biotreat/biofilter the 85th percentile, 24-hour storm event (DCV).
List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)	N/A
Calculate LID design storm capture volume for Project.	$C = (0.90 \times 0.75 + .15) = 0.825$ $D = 0.85''$ $A = 13.33$ $V = 34,000$ After 50% reduction (see below for credits): $V = 17,000$



## IV.2. Site Design and Drainage

[illegible]

## IV.3 LID BMP Selection and Project Conformance Analysis

### IV.3.1 Hydrologic Source Controls (HSCs)

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

Name	Included?
Localized on-lot infiltration	<input type="checkbox"/>
Impervious area dispersion (e.g. roof top disconnection)	<input type="checkbox"/>
Street trees (canopy interception)	<input checked="" type="checkbox"/>
Residential rain barrels (not actively managed)	<input type="checkbox"/>
Green roofs/Brown roofs	<input type="checkbox"/>
Blue roofs	<input type="checkbox"/>
Impervious area reduction (e.g. permeable pavers, site design)	<input checked="" type="checkbox"/>

*Localized on-lot infiltration:* Due to the multiple constraints to infiltration, localized on-lot infiltration is not proposed.

*Impervious area dispersion (e.g. roof top disconnection):* Due to the multiple constraints to infiltration, localized impervious area dispersion is not proposed. However, proprietary biofiltration BMPs with some evapotranspiration benefits are proposed.

*Street trees (canopy interception)* Significant canopy coverage is proposed on-site. Parking lot and perimeter trees are proposed throughout the Project.

*Residential rain barrels (not actively managed):* This does not apply to large commercial sites. Also, reclaimed water will be used for irrigation.

*Green roofs/Brown roofs:* Green roofs are not proposed due to cost and maintenance concerns and the arid environment of Southern California that does not lend itself to their use.

*Blue roofs:* In lieu of blue roofs, which have limited use in retail and hotel architecture, a vault and pump system is used to control project outflows.

*Impervious area reduction (e.g. permeable pavers, site design):* The overall site substantially exceeds existing landscape ratio and unit pavers are proposed in certain locations on-site.

### **IV.3.2 Infiltration BMPs**

Identify infiltration BMPs to be used in project. If design volume cannot be met, state why.

<b>Name</b>	<b>Included?</b>
Bioretention without underdrains	<input type="checkbox"/>
Rain gardens	<input type="checkbox"/>
Porous landscaping	<input type="checkbox"/>
Infiltration planters	<input type="checkbox"/>
Retention swales	<input type="checkbox"/>
Infiltration trenches	<input type="checkbox"/>
Infiltration basins	<input type="checkbox"/>
Drywells	<input type="checkbox"/>
Subsurface infiltration galleries	<input type="checkbox"/>
French drains	<input type="checkbox"/>
Permeable asphalt	<input type="checkbox"/>
Permeable concrete	<input type="checkbox"/>
Permeable concrete pavers	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

No infiltration BMPs are to be used in this project. Infiltration is not feasible due to high ground water table. The proposed underground detention systems will be designed to resist buoyant forces caused by high ground water. Permanent dewatering is not anticipated at this time.

A proprietary Modular Wetland biofiltration system will treat the site DCV. See WQMP site plan for size.

### **IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs**

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration and/or rainwater harvesting BMPs included.

Name	Included?
All HSCs; See Section IV.3.1	<input type="checkbox"/>
Surface-based infiltration BMPs	<input type="checkbox"/>
Biotreatment BMPs	<input checked="" type="checkbox"/>
Above-ground cisterns and basins	<input type="checkbox"/>
Underground detention	<input checked="" type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Evapotranspiration and rainwater harvesting BMPs are not feasible.  
See calculations in Attachment E.

A proprietary Modular Wetland biofiltration system will treat the site DCV. An underground detention and pump system upstream of the modular wetland will control the flow into the device and allow the device to be sized on a volume basis. The underground detention system volume corresponds to the adjusted DCV. See WQMP site plan for size.

#### **IV.3.4 Biotreatment BMPs**

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs included. Include sections for selection, suitability, sizing, and infeasibility, as applicable.

<b>Name</b>	<b>Included?</b>
Bioretention with underdrains	<input type="checkbox"/>
Stormwater planter boxes with underdrains	<input checked="" type="checkbox"/>
Rain gardens with underdrains	<input type="checkbox"/>
Constructed wetlands	<input type="checkbox"/>
Vegetated swales	<input type="checkbox"/>
Vegetated filter strips	<input type="checkbox"/>
Proprietary vegetated biotreatment systems	<input checked="" type="checkbox"/>
Wet extended detention basin	<input type="checkbox"/>
Dry extended detention basins	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

The on-site storm drain system will include parallel detention systems and pumps. The low flows will be diverted to a low flow storage tank that is sized for the adjusted DCV. The outlet pump for the low flow storage tank will be sized and designed to drain the tank in 48 hours. The pump will discharge stormwater into a single high-efficiency Modular Wetland biofiltration BMP. The flows in excess of the adjusted DCV will enter a second tank with a separate discharge pump. The high flow pump will be sized and designed to discharge up to a maximum of 4.0 cfs. The outlet pipe from the high flow pump and the outlet pipe from the Modular Wetland unit will join and connect to the existing Katella Avenue storm drain at a single point.

The Modular Wetland system has been independently tested by the State of Washington DOT and treats a wide range of pollutants at a high efficiency level through biological and chemical processes. See calculation in attachment E

#### **IV.3.5 Hydromodification Control BMPs**

Not applicable.

#### **IV.3.6 Regional/Sub-Regional LID BMPs**

Describe regional/sub-regional LID BMPs in which the project will participate. *Refer to Section 7.II-2.4.3.2 of the Model WQMP.*

Regional/Sub-Regional LID BMPs
N/A

#### **IV.3.7 Treatment Control BMPs**

Not applicable due to the use of biofiltration BMPs. The hydrodynamic separator is used to remove trash and debris prior to entering the detention system. For the purposes of this report the hydrodynamic separator is intended to be for maintenance benefit purposes only and is not counted as stormwater treatment. The entire DCV is treated by the Modular Wetland System.

### IV.3.8 Non-structural Source Control BMPs

Fill out non-structural source control check box forms or provide a brief narrative explaining if non-structural source controls were not used.

Non-Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
N1	Education for Property Owners, Tenants and Occupants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N2	Activity Restrictions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N3	Common Area Landscape Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N4	BMP Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N5	Title 22 CCR Compliance (How development will comply)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous waste will be handled onsite.
N6	Local Industrial Permit Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Industrial uses are not present on-site.
N7	Spill Contingency Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N8	Underground Storage Tank Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No USTs proposed.
N9	Hazardous Materials Disclosure Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous material will be handled onsite.
N10	Uniform Fire Code Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N11	Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N12	Employee Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N13	Housekeeping of Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No depressed loading docks are proposed.
N14	Common Area Catch Basin Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



N15	Street Sweeping Private Streets and Parking Lots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N16	Retail Gasoline Outlets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fueling stations are not proposed.

### **Implementation of Non-Structural BMPs**

#### **N1. Education of Property Owners, Tenants and Occupants.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Ongoing. Orientation shall be given to new owners, tenants, and occupants within 30 days of startup.

Educational material and information shall be provided by the property owner to new owners/tenants/occupants on general good housekeeping BMPs and other practices that contribute to protection of storm water quality. This WQMP shall be provided with emphasis placed on the materials included in, but not limited to, Sections N, V, VI and VII of this report. For additional information, see the BMP Maintenance Responsibility / Frequency Matrix in Section V. Educational Materials to be used include, but are not limited to, SC-10, Non-Stormwater Discharges, SC- 30, Outdoor Loading/Unloading, SC-34, Waste Handling & Disposal, SC-41, Building & Grounds Maintenance, SC-43, Parking/Storage Area Maintenance, The Ocean Begins at Your Front Door, After the Storm, Protecting Water Quality from Urban Runoff, Preventing Pollution Through Efficient Water Use, and Your Business and the County- Partners in Protecting the Ocean. In addition to the attachments, the following resource can be contacted to obtain updated educational information free of charge <http://ocwatersheds.com/PublicEd>. See Table V-1 in Section V for inspection and maintenance activity requirements.

#### **N2. Activity Restrictions.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Daily management of operation. Orientation shall be given to new owners, tenants, and occupants within 30 days of startup. Refreshing orientation shall be given annually.

Onsite activities shall be restricted to those currently granted by the City of Cypress and as stated in the Conditions, Covenants, and Restrictions (CCRs), which will be available in the near future. Parking restrictions include, but are not limited to, provisions regulating vehicle and truck deliveries, vehicle and truck parking, loading and unloading activities, etc. Some other common restrictions to be adhered to are as follows:

- No discharges of fertilizer, pesticides, and wastes to streets or storm drains
- No blowing or sweeping of debris into streets or storm drains

- No hosing down of paved surfaces
- No vehicle washing or maintenance.
- Do not perform paint cleanup activities in paved areas or allow rinse water from these activities to enter the storm drain system. Clean brushes containing water-based paint in a sink that is connected to the sanitary sewer system.
- Do not use detergents or other chemical additives when washing concrete sidewalks or building exteriors, use potable water only and collect wash water runoff using a vacuum truck, for proper offsite disposal.
- Keep premises, as well as trash container areas, free of litter. See Table V -1 in Section V for inspection and maintenance activity requirements.

In addition, onsite activities shall be limited to the requirements of this WQMP as described herein.

### **N3. Common Area Landscape Management.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Landscape areas shall be maintained on a weekly basis through Grounds and Maintenance personnel.

All maintenance shall be consistent with the City of Cypress Water Quality Ordinance and Cypress Municipal Code General guidelines include the following: Plant vegetation that reduces water, fertilizer, herbicide, and pesticide use. Waste shall be disposed of by composting or at a permitted landfill and shall not be raked or blown into the street, gutter, or storm drains. Irrigation systems shall be inspected monthly for leaks. Leaks shall be repaired as soon as they are observed. A void over-watering of vegetation. If excessive runoff is observed, automatic timers shall be adjusted. Fertilizers, herbicides, and pesticides shall be used as directed on the label. If fertilizer is spilled on a paved surface it should be swept up immediately and placed in its container. Water shall not be used to clean fertilizer spills unless necessary and only after the area has been thoroughly cleaned using dry cleaning methods. Pesticides, herbicides, and fertilizers shall not be applied within 48 hours prior to rain or if wind speeds exceed 5 mph. For additional information, see Help Prevent Ocean Pollution - Proper Maintenance Practices for Your Business included in Section VII of this report. Also refer to BMP SC-41, Building & Grounds Maintenance, included in Section VII and the BMP Maintenance Responsibility /Frequency Matrix in Section V for details.

### **N4. BMP Maintenance.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Individual BMPs shall be inspected based on the required frequency of each BMP as suggested in the Maintenance Responsibility /Frequency Matrix. See the BMP Maintenance Responsibility /Frequency Matrix in Section V for details.

### **N11. Common Area Litter Control**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: On a weekly basis through a maintenance firm.

To reduce the likelihood of polluting storm water runoff, regular maintenance will be conducted. This will consist of, at a minimum, site-wide litter control, emptying of trash receptacles in common areas, sweeping of dumpster enclosure areas, and reporting trash disposal violations to the owner or POA for investigation. The landscape maintenance may be contracted for common area litter control as well. See Table V-1 in Section V for inspection and maintenance activity requirements. Trash enclosures will include roofs.

### **N12 Employee Training**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Education of applicable employees for the tenants shall continue on an ongoing basis and shall be done within 30 days of startup. Each new applicable onsite employee shall be given a water quality orientation within 30 days of hire using this WQMP Report as a reference. At a minimum, each applicable onsite employee shall have an annual review of the provisions of the WQMP Report for this project

See Table V -1 in Section V for inspection and maintenance activity requirements.

### **N14. Common Area Catch Basin Inspection.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Twice a month to remove debris and after every major storm event.

The site's proposed drainage is picked up in catch basins at various places and is transported underground to the main storm drain. These catch basins are to be maintained at the frequency

### **N15. Street Sweeping Private Streets and Parking Lots.**

Responsible Party for Implementation of BMP: Property Owner's Association.

Implementation Frequency: Twice a month to remove debris.

The Property Owners' Association shall be responsible for sweeping the surrounding parking lot on a regular basis to remove debris. At minimum, the streets and parking lots will be required to be swept prior to the storm season, in late summer or early fall, prior to the start of the rainy season, or equivalent as required by the governing jurisdiction. For additional information, see BMP SC-34,

Waste Handling and Disposal and BMP SC-43, Parking/Storage Area Maintenance, included in Section VII, and the BMP Maintenance Responsibility / Frequency Matrix in Section V.

### IV.3.9 Structural Source Control BMPs

Fill out structural source control check box forms or provide a brief narrative explaining if structural source controls were not used.

Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Catch basins will be stenciled.
S2	Design and construct outdoor material storage areas to reduce pollution introduction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Outdoor material storage areas are not proposed.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trash enclosures will be fully walled and gated
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Efficient irrigation and a drought-resistant plant palette are proposed.
S5	Protect slopes and channels and provide energy dissipation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Katella Ave. roadway embankment will be landscaped to protect the slope from erosion.
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project is in North Orange County
S6	Dock areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No proposed depressed loading dock
S7	Maintenance bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Maintenance bays are not proposed.
S8	Vehicle wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vehicle wash areas are not proposed.
S9	Outdoor processing areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Outdoor processing areas are not proposed.
S10	Equipment wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Equipment wash areas are not proposed.

S11	Fueling areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fueling areas are not proposed.
S12	Hillside landscaping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hillside landscaping will be provided on the Katella Ave. roadway embankment.
S13	Wash water control for food preparation areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Outdoor wash areas are not proposed.
S14	Community car wash racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Car wash racks are not proposed.

## IV.4 Alternative Compliance Plan (If Applicable)

### IV.4.1 Water Quality Credits

Description of Proposed Project				
Project Types that Qualify for Water Quality Credits (Select all that apply):				
<input checked="" type="checkbox"/> Redevelopment projects that reduce the overall impervious footprint of the project site.	<input type="checkbox"/> Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.	<input checked="" type="checkbox"/> Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).		
<input checked="" type="checkbox"/> Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).	<input type="checkbox"/> Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned		<input type="checkbox"/> Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).	
<input type="checkbox"/> Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.	<input type="checkbox"/> Developments in a city center area.	<input type="checkbox"/> Developments in historic districts or historic preservation areas.	<input type="checkbox"/> Live-work developments, a variety of developments designed to support residential and vocational needs together - similar to criteria to mixed use development; would not be able to take credit for	<input checked="" type="checkbox"/> In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.

			both categories.	
Calculation of Water Quality Credits (if applicable)	The Cypress Mixed Use development is eligible for a 50% reduction in water quality volume because it meets the redevelopment, higher density development, mixed use development, and in-fill development requirements. A 50% credit has been applied to all treatment flow rates and volumes.			

#### **IV.4.2 Alternative Compliance Plan Information**

An alternative compliance plan based on water quality credits is proposed based on several factors. In general, reduction of the surface area of the Modular Wetland BMP allows for the greatest density and mix of uses possible on the site. A description of individual water quality credits follows:

**Redevelopment:** The site is currently developed as a fully paved parking lot with no internal landscape and no landscape along the north edge of the property. The proposed site plan includes a new landscape strip along the north property line and landscape dispersed throughout the proposed parking field.

**Higher density development projects (20% credit):** 251 apartment units are proposed on the 13.33 acres, yielding a density of 18.8 units per acre for the residential density alone. Significant uses in addition to the residential add to the overall project density.

**Mixed-Use Development (20% credit) :** The project includes a true mix of uses including residential (apartment building), retail and restaurant (multi-tenant buildings), entertainment (theater building), and hospitality (hotel building). All uses will be connected by walkable paths of travel, helping to reduce project trips and provide other mixed-use environmental benefits.

**In-Fill Projects (10% credit):** The project is proposed on a parking lot that is vacant nearly 100% of the time, but is also nearly 100% impervious. The space is extremely underutilized and will be transformed into a vibrant, mixed-use development.

## **Section V Inspection/Maintenance Responsibility for BMPs**

The following tables indicate BMP inspection and maintenance responsibility. These tables identify the party responsible for inspection and maintenance, a description of the inspection and/or maintenance activity, and a frequency for the inspection and/or maintenance activity. Records of maintenance and inspections shall be kept for a period of five years and shall be made available for review by government agencies.

Responsible party details are to be determined during the final WQMP. At this time a Property Management Association is assumed to take responsibility for the Maintenance of all onsite BMPs.

### **Property Management Association**

Name: TBD

Title: TBD

Company: TBD

Address: TBD

Phone Number: TBD



Note: The rainy season occurs from October 1<sup>st</sup> to April 15<sup>th</sup>.

<b>BMP Name and BMP Implementation, Maintenance, and Inspection Procedures</b>	<b>Implementation, Maintenance, and Inspection Frequency and Schedule</b>	<b>Inspection / Maintenance Activities Required</b>	<b>Person or Entity with Operation &amp; Maintenance Responsibility</b>
<b>Non-Structural Source Control BMPs</b>			
<b>N1. Education for Property Owners, Tenants and Occupants</b>	Upon Tenant Occupancy	Educational material shall be provided to all employees and tenants.	Property Management Association
<b>N2. Activity Restriction</b>	Monthly	The owner shall develop activity restrictions to minimize the threat of hazardous waste or contamination into the storm drainage system. Car washing is not allowed on-site at any time.	Property Management Association
<b>N3. Common Area Landscape Management</b>	Weekly	Training on landscape management consistent with County Water Conservation Resolution or City equivalent, plus Management Guidelines for Fertilizers (DAMP Section 5.5) shall be conducted for all new field landscape maintenance personnel.	Property Management Association
<b>N4. BMP Maintenance</b>	Weekly	Maintenance of BMPs implemented at the project site shall be performed at the frequency prescribed in this WQMP.	Property Management Association
<b>N11. Common Area Litter Control</b>	Daily	Litter patrol, violations investigation, reporting and other litter control activities shall be performed in conjunction with maintenance activities.	Property Management Association
<b>N12. Employee Training</b>	Yearly for all employees and within 6 months of hire date for new employees.	Education programs shall be implemented as they apply to future employees and training of current employees.	Property Management Association
<b>N14. Common Area Catch Basin Inspection</b>	Minimum of once a year prior to rainy season.	Litter and debris removal, illicit discharge violations investigation and reporting shall be performed in conjunction with maintenance activities.	Property Management Association

<b>BMP Name and BMP Implementation, Maintenance, and Inspection Procedures</b>	<b>Implementation, Maintenance, and Inspection Frequency and Schedule</b>	<b>Inspection / Maintenance Activities Required</b>	<b>Person or Entity with Operation &amp; Maintenance Responsibility</b>
<b>N15. Street Sweeping Private Streets and Parking Lots</b>	Monthly	Private streets and parking area within the project shall be swept at a minimum frequency of once a month.	Property Management Association
<b>Structural Source Control BMPs</b>			
<b>S1. Provide Storm Drain System Stenciling and Signage</b>	Yearly	All proposed inlets shall be marked with the appropriate "No Dumping. Drains to Ocean." Stencil. The stencils must be repainted when they becomes illegible, but at a minimum once every five years.	Property Management Association
<b>S3. Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction</b>	Weekly	Trash receptacles shall be placed on a paved area. Sweep trash area at least once per week. Maintain area clean of trash and debris.	Property Management Association
<b>S4. Use Efficient Irrigation Systems &amp; Landscape Design</b>	Monthly	Verify that landscape design continues to function properly by correctly adjusting to eliminate overspray to hardscape areas, and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given time of year, and day or night time temperatures.	Property Management Association
<b>S5. Protect Slopes and Channels</b>	Monthly	Maintain area and clear any accumulated sediment or trash during the summer, or early fall, before October 1 <sup>st</sup> .	Property Management Association
<b>Medium Term Erosion Control BMPs</b>			
<b>EC5. Soil Stabilization</b>	Monthly and after large storms.	Inspect graded building pads and reapply stabilization if signs of erosion are present.	Property Management Association
<b>Low Impact Development (LID) and Treatment Control BMPs</b>			
<b>Modular Wetland</b>	Bi- annual	Inspect and remove trash and debris from outlet pipe and vault twice a year.	Property Management Association
<b>Hydrodynamic Separator</b>	Bi-annual	Inspect and remove trash and debris from the collection chamber twice a year.	Property Management Association

**Water Quality Management Plan (WQMP)**

Cypress Mixed Use

<b>BMP Name and BMP Implementation, Maintenance, and Inspection Procedures</b>	<b>Implementation, Maintenance, and Inspection Frequency and Schedule</b>	<b>Inspection / Maintenance Activities Required</b>	<b>Person or Entity with Operation &amp; Maintenance Responsibility</b>
<b>Diversion Structure</b>	Every two months	Inspect and remove trash and debris as necessary from the diversion box every two months.	Property Management Association
<b>Underground Detention System</b>	Bi-annual	Inspect and remove trash and debris from the detention system twice a year.	Property Management Association
<b>Strom Drain Pump Systems</b>	TBD	TBD	Property Management Association

Vector note: Vector control is provided through the proper sizing of BMPs. BMPs are designed to drain completely within 48 hours. Any ponded water on-site in excess of a 24-hour period is an indication that storm drain system maintenance and inspection is required.



## **Section VI BMP Exhibit (Site Plan)**

### **VI.1 BMP Exhibit (Site Plan)**

See attachment H for the Preliminary WQMP Exhibit

### **VI.2 Submittal and Recordation of Water Quality Management Plan**

A PDF of the full report is included with the submittal.

## Section VII Educational Materials

Education Materials			
Residential Material ( <a href="http://www.ocwatersheds.com">http://www.ocwatersheds.com</a> )	Check If Applicable	Business Material ( <a href="http://www.ocwatersheds.com">http://www.ocwatersheds.com</a> )	Check If Applicable
The Ocean Begins at Your Front Door	<input checked="" type="checkbox"/>	Tips for the Automotive Industry	<input type="checkbox"/>
Tips for Car Wash Fund-raisers	<input type="checkbox"/>	Tips for Using Concrete and Mortar	<input type="checkbox"/>
Tips for the Home Mechanic	<input type="checkbox"/>	Tips for the Food Service Industry	<input checked="" type="checkbox"/>
Homeowners Guide for Sustainable Water Use	<input type="checkbox"/>	Proper Maintenance Practices for Your Business	<input type="checkbox"/>
Household Tips	<input type="checkbox"/>	Other Material	Check If Attached
Proper Disposal of Household Hazardous Waste	<input type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (North County)	<input type="checkbox"/>		<input type="checkbox"/>
Recycle at Your Local Used Oil Collection Center (Central County)	<input type="checkbox"/>		<input type="checkbox"/>
Recycle at Your Local Used Oil Collection Center (South County)	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Maintaining a Septic Tank System	<input type="checkbox"/>		<input type="checkbox"/>
Responsible Pest Control	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Sewer Spill	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Tips for the Home Improvement Projects	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Horse Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Landscaping and Gardening	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Pet Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Pool Maintenance	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Residential Pool, Landscape and Hardscape Drains	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Projects Using Paint	<input checked="" type="checkbox"/>		<input type="checkbox"/>

# **ATTACHMENT A**

## **303d LIST OF IMPAIRED WATER BODIES**

## Final California 2014 and 2016 Integrated Report (303(d) List/305(b) Report)

### Supporting Information

#### Regional Board 8 - Santa Ana Region

Water Body Name: [Los Alamitos Channel](#)  
 Water Body ID: CAR8456100020161109050078  
 Water Body Type: River & Stream

DECISION ID	65265	Region 8
Los Alamitos Channel		

Pollutant: Arsenic  
 Final Listing Decision: **Do Not List on 303(d) list (TMDL required list)**  
 Last Listing Cycle's Final Listing Decision: New Decision  
 Revision Status: Revised  
 Impairment from Pollutant or Pollution: Pollutant

**Regional Board Conclusion:** This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:** After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

#### State Board Review of Regional Board Conclusion and Recommendation:

**State Board Decision Recommendation:** After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65265, Arsenic	Region 8
Los Alamitos Channel	

LOE ID: 95772

Pollutant: Arsenic  
 LOE Subgroup: Pollutant-Sediment  
 Matrix: Sediment  
 Fraction: Total

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 1  
 Number of Exceedances: 0

Data and Information Type: PHYSICAL/CHEMICAL MONITORING  
 Data Used to Assess Water Quality: Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Arsenic.  
 Data Reference: [Statewide Stream Pollution Trends Study 2008](#)

SWAMP Data: SWAMP

Water Quality Objective/Criterion: Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.  
 Objective/Criterion Reference: [Water Quality Control Plan, Santa Ana River Basin](#)

Evaluation Guideline: In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for arsenic is 33 mg/Kg dry weight (MacDonald et al. 2000).  
 Guideline Reference: [Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology 39: 20-31](#)

Spatial Representation: Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]  
 Temporal Representation: Data was collected on a single day 5/20/2008.  
 Environmental Conditions: Staff is not aware of any special conditions that might affect interpretation of the data.  
 QAPP Information: SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.  
 QAPP Information Reference(s): [Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 \(1st version\)](#)



DECISION ID 65266		Region 8
Los Alamitos Channel		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Bifenthrin</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. One (1) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>	
<b>Regional Board Decision Recommendation:</b>	<p>After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.</p>	
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>		
<b>State Board Decision Recommendation:</b>	<p>After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.</p>	

Line of Evidence (LOE) for Decision ID 65266, Bifenthrin		Region 8
Los Alamitos Channel		
LOE ID:	95779	
Pollutant:	Bifenthrin	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	1	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 1 of 1 samples exceed the criterion for Bifenthrin.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	The evaluation guideline for bifenthrin is the median lethal concentration (LC50) of 0.43 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 0.43 ug/g is the geometric mean of LC50 values for bifenthrin from Amweg et al. (2005) and Amweg and Weston (2007).	
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA, Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5</a> <a href="#">Whole-sediment toxicity identification evaluation tools for pyrethroid insecticides: I. piperonyl butoxide addition, Environ. Toxicol. Chem. 26:2389-2396.</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002, (1st version)</a>	

DECISION ID 65267		Region 8
Los Alamitos Channel		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Cadmium</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65267, Cadmium Los Alamitos Channel		Region 8
LOE ID:	95780	
Pollutant:	Cadmium	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	0	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Cadmium.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for cadmium is 4.98 mg/Kg dry weight (MacDonald et al. 2000).	
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>	

DECISION ID Los Alamitos Channel		65268	Region 8
Pollutant:	Chlorpyrifos		
Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)		
Last Listing Cycle's Final Listing Decision:	New Decision		
Revision Status	Revised		
Impairment from Pollutant or Pollution:	Pollutant		
Regional Board Conclusion:	This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.		
	One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.		
	Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.		
	This conclusion is based on the staff findings that:		
	1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.		
	2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.		
	3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.		
	4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.		
Regional Board Decision Recommendation:	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.		
State Board Review of Regional Board Conclusion and Recommendation:			

**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65268, Chlorpyrifos  
Los Alamitos Channel**

Region 8

LOE ID:	95790
Pollutant:	Chlorpyrifos
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Chlorpyrifos.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for chlorpyrifos is the median lethal concentration (LC50) of 1.77 ug/g and is normalized by the percentage of organic carbon in the sediment sample (Amweg and Weston, 2007).
Guideline Reference:	<a href="#">Whole-sediment toxicity identification evaluation tools for pyrethroid insecticides: I. piperonyl butoxide addition. Environ. Toxicol. Chem. 26:2389-2396.</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

**DECISION ID 65269  
Los Alamitos Channel**

Region 8

<b>Pollutant:</b>	<b>Chromium</b>
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision
<b>Revision Status</b>	Revised
<b>Impairment from Pollutant or Pollution:</b>	Pollutant

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:**

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

**State Board Review of Regional Board Conclusion and  
Recommendation:**
**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65269, Chromium  
Los Alamitos Channel**

Region 8

LOE ID:	95791
Pollutant:	Chromium
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total

Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Chromium.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for chromium is 111 mg/Kg dry weight (MacDonald et al. 2000).
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

<b>DECISION ID</b>	<b>65270</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>		

<b>Pollutant:</b>	<b>Copper</b>
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision
<b>Revision Status</b>	Revised
<b>Impairment from Pollutant or Pollution:</b>	Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

<b>Line of Evidence (LOE) for Decision ID 65270, Copper</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>	

LOE ID:	95792
Pollutant:	Copper
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Copper.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>

Evaluation Guideline:  
Guideline Reference:

In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for copper is 149 mg/Kg dry weight (MacDonald et al. 2000).  
[Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31](#)

Spatial Representation:  
Temporal Representation:  
Environmental Conditions:  
QAPP Information:  
QAPP Information Reference(s):

Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]  
Data was collected on a single day 5/20/2008.  
Staff is not aware of any special conditions that might affect interpretation of the data.  
SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.  
[Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 \(1st version\)](#)

<b>DECISION ID</b>	<b>65271</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>		

**Pollutant:**  
**Final Listing Decision:**  
**Last Listing Cycle's Final Listing Decision:**  
**Revision Status**  
**Impairment from Pollutant or Pollution:**

**Cyfluthrin**  
**Do Not List on 303(d) list (TMDL required list)**  
New Decision  
Revised  
Pollutant

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:**

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

**State Board Review of Regional Board Conclusion and Recommendation:**

**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

<b>Line of Evidence (LOE) for Decision ID 65271, Cyfluthrin</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>	

LOE ID:	95793
Pollutant:	Cyfluthrin
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Cyfluthrin, total.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for cyfluthrin is the median lethal concentration (LC50) of 1.1 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 1.1 ug/g is the geometric mean of LC50 values for cyfluthrin from Amweg et al. (2005).
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry. 24:966-972, with erratum 24:No. 5</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

<b>DECISION ID</b>	<b>65272</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>		

<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Cyhalothrin, Lambda</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"><li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li><li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li><li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li><li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li></ol>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65272, Cyhalothrin, Lambda Los Alamitos Channel		Region 8
LOE ID:	95794	
Pollutant:	Cyhalothrin, Lambda	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	0	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Cyhalothrin, lambda, total.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	The evaluation guideline for lambda-cyhalothrin is the median lethal concentration (LC50) of 0.44 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 0.44 ug/g is the geometric mean of LC50 values for lambda-cyhalothrin from Amweg et al. (2005).	
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>	

DECISION ID Los Alamitos Channel		Region 8
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Cypermethrin</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p>	

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.  
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.  
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.  
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65273, Cypermethrin  
Los Alamitos Channel

Region 8

LOE ID:	95768
Pollutant:	Cypermethrin
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Cypermethrin, total.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for cypermethrin is the median lethal concentration (LC50) of 0.3 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 0.3 ug/g is the geometric mean of LC50 values for cypermethrin from Maund et al. (2002).
Guideline Reference:	<a href="#">Partitioning, bioavailability, and toxicity of the pyrethroid insecticide cypermethrin in sediments, Environmental Toxicology and Chemistry 21:9-15</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

DECISION ID  
Los Alamitos Channel

65274

Region 8

Pollutant:	DDD (Dichlorodiphenyldichloroethane)
Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant
Regional Board Conclusion:	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <p>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</p>
Regional Board Decision Recommendation:	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
State Board Review of Regional Board Conclusion and Recommendation:	
State Board Decision Recommendation:	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65274, DDD (Dichlorodiphenyldichloroethane) Los Alamitos Channel		Region 8
LOE ID:	95769	
Pollutant:	DDD (Dichlorodiphenyldichloroethane)	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	0	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for DDD.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for sum of DDD is 28.0 ug/Kg dry weight (MacDonald et al. 2000).	
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>	

DECISION ID Los Alamitos Channel		65275	Region 8
<b>Pollutant:</b>	<b>DDE (Dichlorodiphenyldichloroethylene)</b>		
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>		
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision		
<b>Revision Status</b>	Revised		
<b>Impairment from Pollutant or Pollution:</b>	Pollutant		
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. One (1) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>		
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.		
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>			
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.		

Line of Evidence (LOE) for Decision ID 65275, DDE (Dichlorodiphenyldichloroethylene) Los Alamitos Channel		Region 8
LOE ID:	95770	
Pollutant:	DDE (Dichlorodiphenyldichloroethylene)	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	



Number of Exceedances:	1
Data and Information Type: Data Used to Assess Water Quality: Data Reference:	PHYSICAL/CHEMICAL MONITORING Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 1 of 1 samples exceed the criterion for DDE. <a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline: Guideline Reference:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for sum of DDE is 31.3 ug/Kg dry weight (MacDonald et al. 2000). <a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>
Spatial Representation: Temporal Representation: Environmental Conditions: QAPP Information: QAPP Information Reference(s):	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).] Data was collected on a single day 5/20/2008. Staff is not aware of any special conditions that might affect interpretation of the data. SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA. <a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

<b>DECISION ID</b>	<b>65276</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>		

<b>Pollutant:</b>	<b>DDT (Dichlorodiphenyltrichloroethane)</b>
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision
<b>Revision Status</b>	Revised
<b>Impairment from Pollutant or Pollution:</b>	Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>Two lines of evidence are available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion for DDT and Total DDT.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion for DDT and Total DDT and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

<b>Line of Evidence (LOE) for Decision ID 65276, DDT (Dichlorodiphenyltrichloroethane)</b>	<b>Region 8</b>
<b>Los Alamitos Channel</b>	

LOE ID:	95786
Pollutant:	Total DDT (sum of 4,4'- and 2,4'- isomers of DDT, DDE, and DDD)
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type: Data Used to Assess Water Quality: Data Reference:	PHYSICAL/CHEMICAL MONITORING Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for DDT, Total. <a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline: Guideline Reference:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for total DDTs is 572 ug/Kg dry weight (MacDonald et al. 2000). <a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>

Spatial Representation: Temporal Representation: Environmental Conditions: QAPP Information: QAPP Information Reference(s):	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).] Data was collected on a single day 5/20/2008. Staff is not aware of any special conditions that might affect interpretation of the data. SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA. <a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>
Line of Evidence (LOE) for Decision ID 65276, DDT (Dichlorodiphenyltrichloroethane) Los Alamitos Channel	
LOE ID:	95773
Pollutant: LOE Subgroup: Matrix: Fraction:	DDT (Dichlorodiphenyltrichloroethane) Pollutant-Sediment Sediment Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples: Number of Exceedances:	1 0
Data and Information Type: Data Used to Assess Water Quality: Data Reference:	PHYSICAL/CHEMICAL MONITORING Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for DDT. <a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline: Guideline Reference:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for sum of DDT is 62.9 ug/Kg dry weight (MacDonald et al. 2000). <a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems, Environmental Contamination and Toxicology, 39: 20-31</a>
Spatial Representation: Temporal Representation: Environmental Conditions: QAPP Information: QAPP Information Reference(s):	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).] Data was collected on a single day 5/20/2008. Staff is not aware of any special conditions that might affect interpretation of the data. SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA. <a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

DECISION ID Los Alamitos Channel	65277	Region 8
Pollutant: Final Listing Decision: Last Listing Cycle's Final Listing Decision: Revision Status Impairment from Pollutant or Pollution:	Deltamethrin Do Not List on 303(d) list (TMDL required list) New Decision Revised Pollutant	
Regional Board Conclusion:	This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.  One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.  Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.  This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.	
Regional Board Decision Recommendation:	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.	
State Board Review of Regional Board Conclusion and Recommendation:		
State Board Decision Recommendation:	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.	

Line of Evidence (LOE) for Decision ID 65277, Deltamethrin Los Alamitos Channel		Region 8
LOE ID:	95771	
Pollutant: LOE Subgroup:	Deltamethrin Pollutant-Sediment	

Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Deltamethrin.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for deltamethrin is the median lethal concentration (LC50) of 0.79 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 0.79 ug/g is the geometric mean of LC50 values for deltamethrin from Amweg et al. (2005).
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP, December 2002 (1st version)</a>

DECISION ID65278Region 8

Los Alamitos Channel

<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Diazinon</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"><li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li><li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li><li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li><li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li></ol>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65278, DiazinonRegion 8

Los Alamitos Channel

LOE ID:	95774
Pollutant:	Diazinon
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Diazinon.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP

Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. <a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Objective/Criterion Reference:	
Evaluation Guideline:	The evaluation guideline for diazinon is the median lethal concentration (LC50) of 11 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 11 ug/g is the geometric mean of LC50 values for diazinon from Ding et al. (2011).
Guideline Reference:	<a href="#">Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83?92.</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

DECISION ID 65279 Region 8	
Los Alamitos Channel	
Pollutant:	Dieldrin
Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant
Regional Board Conclusion:	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"><li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li><li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li><li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li><li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li></ol>
Regional Board Decision Recommendation:	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
State Board Review of Regional Board Conclusion and Recommendation:	
State Board Decision Recommendation:	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65279, Dieldrin Region 8	
Los Alamitos Channel	
LOE ID:	95775
Pollutant:	Dieldrin
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Dieldrin.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for dieldrin is 61.8 ug/Kg dry weight (MacDonald et al. 2000).
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

DECISION ID 65280		Region 8
Los Alamitos Channel		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Endrin</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>	
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.	
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>		
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.	

Line of Evidence (LOE) for Decision ID 65280, Endrin		Region 8
Los Alamitos Channel		
LOE ID:	95778	
Pollutant:	Endrin	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	0	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Endrin.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for endrin is 207 ug/Kg dry weight (MacDonald et al. 2000).	
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>	

DECISION ID 65281		Region 8
Los Alamitos Channel		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Esfenvalerate/Fenvalerate</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p>	

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:**

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

**State Board Review of Regional Board Conclusion and Recommendation:**

**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65281, Esfenvalerate/Fenvalerate Los Alamitos Channel		Region 8
LOE ID:	95776	
Pollutant:	Esfenvalerate/Fenvalerate	
LOE Subgroup:	Pollutant-Sediment	
Matrix:	Sediment	
Fraction:	Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples:	1	
Number of Exceedances:	0	
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING	
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Esfenvalerate/Fenvalerate, total.	
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline:	The evaluation guideline for esfenvalerate/fenvalerate is the median lethal concentration (LC50) of 1.5 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 1.5 ug/g is the geometric mean of LC50 values for esfenvalerate/fenvalerate from Amweg et al. (2005).	
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5</a>	
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]	
Temporal Representation:	Data was collected on a single day 5/20/2008.	
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.	
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.	
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>	

DECISION ID 65282 Los Alamitos Channel		Region 8
<b>Pollutant:</b>	<b>Fenpropathrin</b>	
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>	
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision	
<b>Revision Status</b>	Revised	
<b>Impairment from Pollutant or Pollution:</b>	Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>	
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.	
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>		

**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65282, Fenpropathrin  
Los Alamitos Channel**

Region 8

LOE ID:	95777
Pollutant:	Fenpropathrin
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Fenpropathrin.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for fenpropathrin is the median lethal concentration (LC50) of 1 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 1 ug/g is the geometric mean of LC50 values for fenpropathrin from Ding et al. ( 2011).
Guideline Reference:	<a href="#">Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83792.</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

**DECISION ID 65283  
Los Alamitos Channel**

Region 8

<b>Pollutant:</b>	<b>Lead</b>
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision
<b>Revision Status</b>	Revised
<b>Impairment from Pollutant or Pollution:</b>	Pollutant

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:**

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

**State Board Review of Regional Board Conclusion and  
Recommendation:**
**State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65283, Lead  
Los Alamitos Channel**

Region 8

LOE ID:	95781
Pollutant:	Lead
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total

Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Lead.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for lead is 128 mg/Kg dry weight (MacDonald et al. 2000).
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems, Environmental Contamination and Toxicology, 39: 20-31</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

DECISION ID65284Region 8

Los Alamitos Channel

<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Lindane/gamma Hexachlorocyclohexane (gamma-HCH)</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"><li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li><li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li><li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li><li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li></ol>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65284, Lindane/gamma Hexachlorocyclohexane (gamma-HCH)Region 8

Los Alamitos Channel

LOE ID:	95782
Pollutant:	Lindane/gamma Hexachlorocyclohexane (gamma-HCH)
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for HCH, gamma.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>



Evaluation Guideline:  
Guideline Reference:

In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for Lindane (gamma-HCH) is 4.99 ug/Kg dry weight (MacDonald et al. 2000).  
[Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31](#)

Spatial Representation:  
Temporal Representation:  
Environmental Conditions:  
QAPP Information:  
QAPP Information Reference(s):

Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]  
Data was collected on a single day 5/20/2008.  
Staff is not aware of any special conditions that might affect interpretation of the data.  
SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.  
[Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 \(1st version\)](#)

DECISION ID	65285	Region 8
<b>Los Alamitos Channel</b>		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Mercury</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.</p> <p>One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.</p> <p>Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that:</p> <ol style="list-style-type: none"> <li>1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.</li> <li>2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.</li> <li>3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.</li> <li>4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</li> </ol>	
<b>Regional Board Decision Recommendation:</b>	<p>After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.</p>	
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>		
<b>State Board Decision Recommendation:</b>	<p>After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.</p>	

Line of Evidence (LOE) for Decision ID 65285, Mercury		Region 8
<b>Los Alamitos Channel</b>		
LOE ID:	95783	
Pollutant: LOE Subgroup: Matrix: Fraction:	Mercury Pollutant-Sediment Sediment Total	
Beneficial Use:	Warm Freshwater Habitat	
Number of Samples: Number of Exceedances:	1 0	
Data and Information Type: Data Used to Assess Water Quality: Data Reference:	PHYSICAL/CHEMICAL MONITORING Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Mercury. <a href="#">Statewide Stream Pollution Trends Study 2008</a>	
SWAMP Data:	SWAMP	
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.	
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>	
Evaluation Guideline: Guideline Reference:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for mercury is 1.06 mg/Kg dry weight (MacDonald et al. 2000). <a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>	
Spatial Representation: Temporal Representation: Environmental Conditions: QAPP Information: QAPP Information Reference(s):	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).] Data was collected on a single day 5/20/2008. Staff is not aware of any special conditions that might affect interpretation of the data. SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA. <a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>	
DECISION ID	65286	Region 8
<b>Los Alamitos Channel</b>		

**Pollutant:**  
**Final Listing Decision:**  
**Last Listing Cycle's Final Listing Decision:**  
**Revision Status**  
**Impairment from Pollutant or Pollution:**

**Methyl Parathion**  
**Do Not List on 303(d) list (TMDL required list)**  
 New Decision  
 Revised  
 Pollutant

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

**Regional Board Decision Recommendation:**

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

**State Board Review of Regional Board Conclusion and Recommendation:****State Board Decision Recommendation:**

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65286, Methyl Parathion  
 Los Alamitos Channel**
**Region 8**

LOE ID:	95784
Pollutant:	Methyl Parathion
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Parathion, Methyl.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for methyl parathion is the median lethal concentration (LC50) of 6 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 6 ug/g is the geometric mean of LC50 values for methyl parathion from Ding et al. (2011).
Guideline Reference:	<a href="#">Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83792.</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

**DECISION ID**  
**Los Alamitos Channel**

65287

**Region 8**

**Pollutant:**  
**Final Listing Decision:**  
**Last Listing Cycle's Final Listing Decision:**  
**Revision Status**  
**Impairment from Pollutant or Pollution:**

**Nickel**  
**Do Not List on 303(d) list (TMDL required list)**  
 New Decision  
 Revised  
 Pollutant

**Regional Board Conclusion:**

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

Line of Evidence (LOE) for Decision ID 65287, Nickel

Los Alamitos Channel

Region 8

LOE ID:	95785
Pollutant:	Nickel
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Nickel.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for nickel is 48.6 mg/Kg dry weight (MacDonald et al. 2000).
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology.39: 20-31</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program. Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

DECISION ID

65288

Region 8

Los Alamitos Channel

Pollutant:	Permethrin, total
Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant

Regional Board Conclusion:

This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.

2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.

3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1.

4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Regional Board Decision Recommendation:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.

State Board Review of Regional Board Conclusion and Recommendation:

State Board Decision Recommendation:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65288, Permethrin, total  
Los Alamitos Channel**

Region 8

LOE ID:	95788
Pollutant:	Permethrin, total
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Permethrin, Total.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	The evaluation guideline for permethrin is the median lethal concentration (LC50) of 8.9 ug/g and is normalized by the percentage of organic carbon in the sediment sample. The LC50 8.9 ug/g is the geometric mean of LC50 values for permethrin from Amweg et al. (2005).
Guideline Reference:	<a href="#">Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry. 24:966-972, with erratum 24:No. 5</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]
Temporal Representation:	Data was collected on a single day 5/20/2008.
Environmental Conditions:	Staff is not aware of any special conditions that might affect interpretation of the data.
QAPP Information:	SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 (1st version)</a>

**DECISION ID 65549**

Region 8

**Los Alamitos Channel**

<b>Pollutant:</b>	<b>Toxicity</b>
<b>Final Listing Decision:</b>	<b>Do Not List on 303(d) list (TMDL required list)</b>
<b>Last Listing Cycle's Final Listing Decision:</b>	New Decision
<b>Revision Status</b>	Revised
<b>Impairment from Pollutant or Pollution:</b>	Pollutant
<b>Regional Board Conclusion:</b>	<p>This pollutant is being considered for placement on the CWA section 303(d) List under section 3.6 of the Listing Policy. Under section 3.6 at least one line of evidence is necessary to assess listing status for toxicity, and waters may be placed on the CWA section 303(d) List for toxicity alone.</p> <p>One line of evidence is available in the administrative record to assess sediment toxicity. One of the one samples exhibited sediment toxicity. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.</p> <p>This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. One of the one samples exhibited sediment toxicity, and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples is needed to determine if a beneficial use is fully supported using table 3.1. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.</p>
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>	
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

**Line of Evidence (LOE) for Decision ID 65549, Toxicity  
Los Alamitos Channel**

Region 8

LOE ID:	95787
Pollutant:	Toxicity
LOE Subgroup:	Toxicity
Matrix:	Sediment
Fraction:	None
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	1
Data and Information Type:	TOXICITY TESTING

Data Used to Assess Water Quality:	One sample was collected to evaluate sediment toxicity. The sample exhibited significant toxicity. The toxicity test included survival of Hyalella azteca. One sample can have multiple toxicity test results but will be counted only once.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion: Objective/Criterion Reference:	All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Region 4 Basin Plan. <a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	Toxicity is defined as a statistically significant effect in the sample exposure compared to the control using EPA-recommended hypothesis testing. For SWAMP data exceedances are counted with the significant effect code SL. SL is defined as the result being significant compared to the negative control based on a statistical test, less than stated the alpha level, AND less than the evaluation threshold.
Guideline Reference:	<a href="#">Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates, Second Edition. U.S. Environmental Protection Agency Office of Research and Development, Duluth, MI . U.S. Environmental Protection Agency Office of Water, Washington, DC EPA-600/R-99/064</a>
Spatial Representation:	The samples were collected at station 845SGRDRE.
Temporal Representation:	The samples were collected in May 2008.
Environmental Conditions:	
QAPP Information:	All data was collected following the Standard Operating Procedures and Data Quality Objectives outlined in the SWAMP QAMP, (Puckett, 2002). QA data are included in submission.
QAPP Information Reference(s):	<a href="#">Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA. State Water Resources Control Board. SWAMP. December 2002 (1st version)</a>

DECISION ID 65290		Region 8
Los Alamitos Channel		
<b>Pollutant:</b> <b>Final Listing Decision:</b> <b>Last Listing Cycle's Final Listing Decision:</b> <b>Revision Status</b> <b>Impairment from Pollutant or Pollution:</b>	<b>Zinc</b> <b>Do Not List on 303(d) list (TMDL required list)</b> New Decision Revised Pollutant	
<b>Regional Board Conclusion:</b>	This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. Under section 3.1, a single line of evidence is necessary to assess listing status.  One line of evidence is available in the administrative record to assess this pollutant. Zero (0) of the one (1) sample exceeds the beneficial use criterion.  Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the CWA section 303(d) List.  This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Zero (0) of the one (1) sample exceeds the beneficial use criterion and this sample size is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating. A minimum of 16 samples are needed to determine if a beneficial use is fully supported using table 3.1. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.	
<b>Regional Board Decision Recommendation:</b>	After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list. The readily available data and information is insufficient to determine, with the power and confidence of the Listing Policy, the applicable beneficial use support rating.	
<b>State Board Review of Regional Board Conclusion and Recommendation:</b>		
<b>State Board Decision Recommendation:</b>	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.	
Line of Evidence (LOE) for Decision ID 65290, Zinc		Region 8
Los Alamitos Channel		

LOE ID:	95789
Pollutant:	Zinc
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP data for Los Alamitos Channel to determine beneficial use support and results are as follows: 0 of 1 samples exceed the criterion for Zinc.
Data Reference:	<a href="#">Statewide Stream Pollution Trends Study 2008</a>
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	Water Quality Control Plan for the San Diego Basin (SDRWQCB 2007): All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Objective/Criterion Reference:	<a href="#">Water Quality Control Plan, Santa Ana River Basin</a>
Evaluation Guideline:	In freshwater sediments the probable effect concentration (predictive of sediment toxicity for sediment-dwelling organisms) for zinc is 459 mg/Kg dry weight (MacDonald et al. 2000).
Guideline Reference:	<a href="#">Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Environmental Contamination and Toxicology. 39: 20-31</a>
Spatial Representation:	Data for this line of evidence for Los Alamitos Channel was collected at 1 monitoring site [ Drainage East of San Gabriel River at Hgwy22 station (845SGRDRE).]

7/26/2019

[https://www.waterboards.ca.gov/water\\_issues/programs/tmdl/2014\\_16state\\_ir\\_reports/03353.shtml#65265](https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/03353.shtml#65265)

Temporal Representation:  
Environmental Conditions:  
QAPP Information:  
QAPP Information Reference(s):

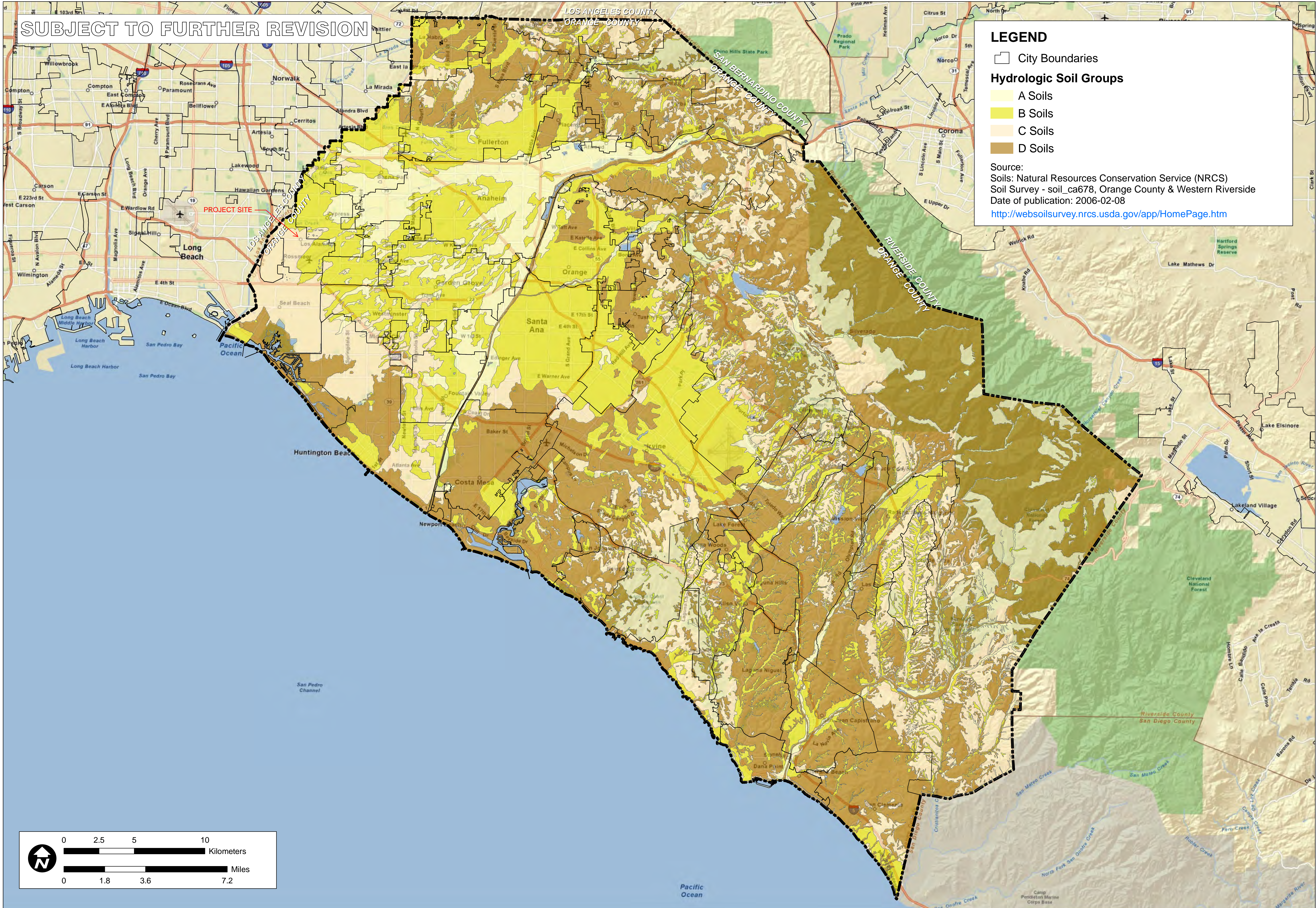
Data was collected on a single day 5/20/2008.  
Staff is not aware of any special conditions that might affect interpretation of the data.  
SWAMP data collected before September 2008 followed the QAMP (2002), however there may have been overlap in QA.  
[Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program, Sacramento, CA, State Water Resources Control Board, SWAMP, December 2002 \(1st version\)](#)

# ATTACHMENT B

**COUNTY SOILS, HYDROMODIFICATION SUSCEPTIBILITY,  
AND RAINFALL MAPS**




P:\9526\6-GIS\Mxd\Reports\InfiltrationFeasibility\_20110215\9526\_FigureXVI-2a\_HydroSoils\_20110215.mxd




TITLE		ORANGE COUNTY INFILTRATION STUDY		CA	
JOB		ORANGE CO.			
SCALE	1" = 1.8 miles	DESIGNED	TH	CHECKED	BMP
DRAWING	TH	DATE	02/09/11	JOB NO.	9526-E
<b>PACE</b> Advanced Water Engineering					
<b>FIGURE</b> XVI-2a					





Susceptibility

 Potential Areas of Erosion, Habitat, & Physical Structure Susceptibility

Channel Type

 Earth (Unstable)

 Earth (Stabilized)

 Stabilized

Tidel Influence

 <= Mean High Water Line (4.28')

Water Body

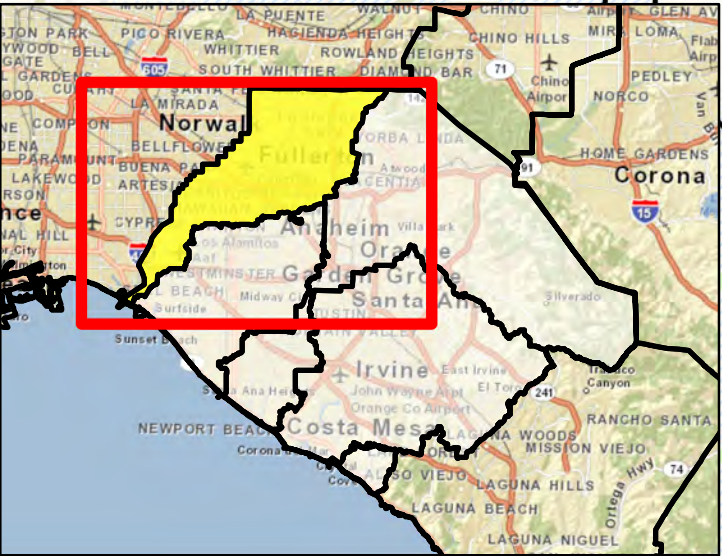
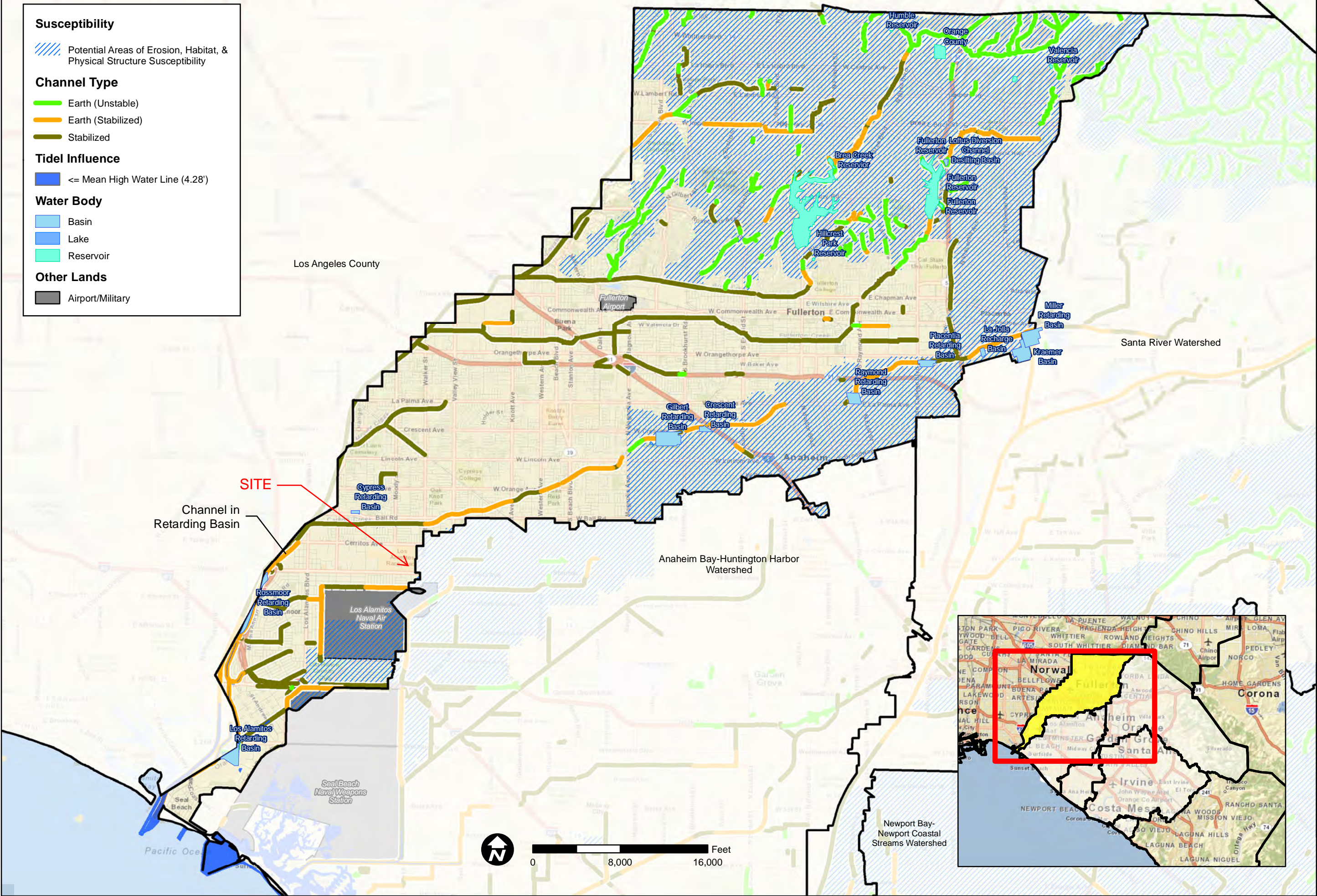
 Basin

 Lake

 Reservoir

Other Lands

 Airport/Military



TITLE  
SUSCEPTIBILITY ANALYSIS  
SAN GABRIEL-COYOTE CREEK

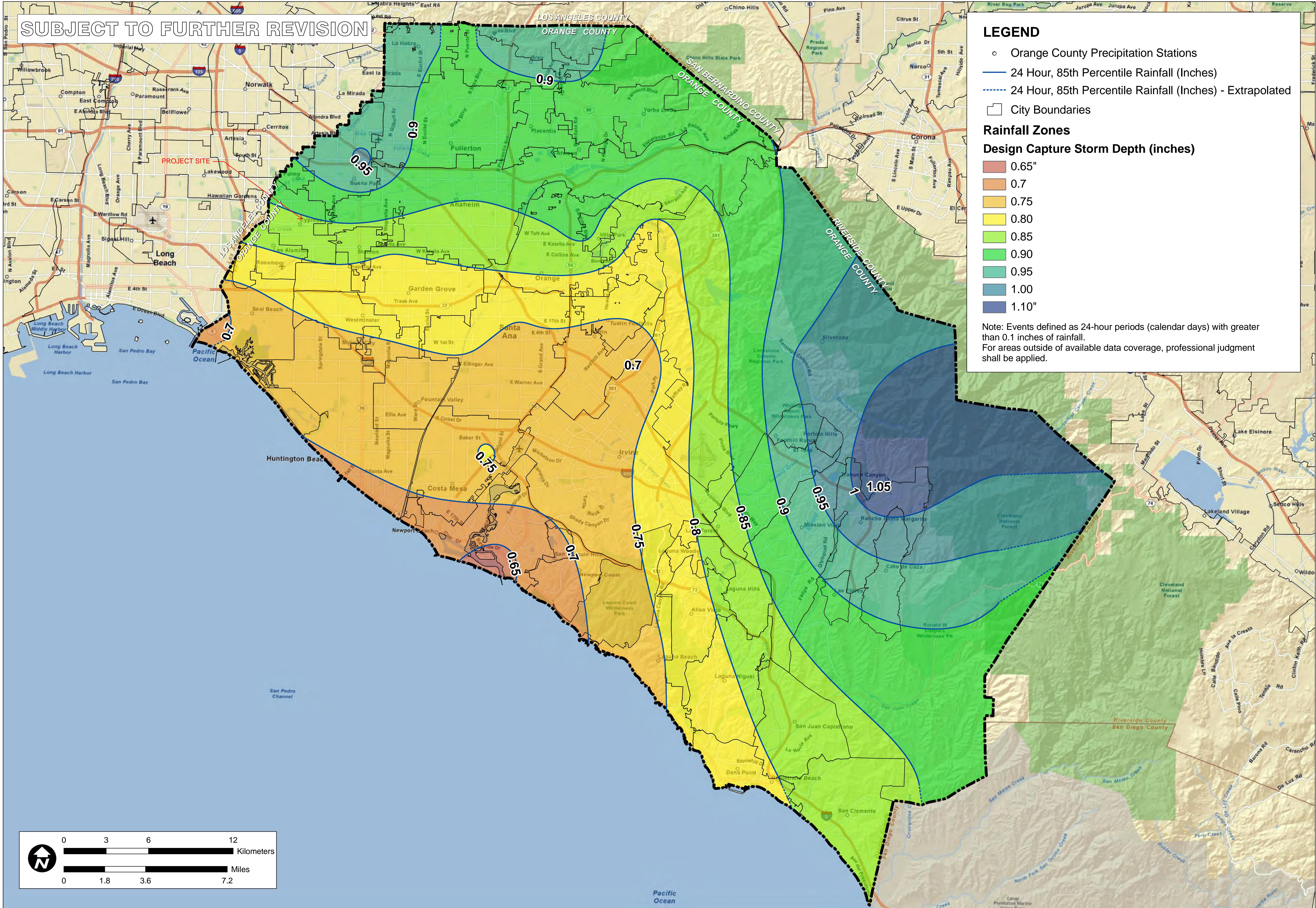
JOB  
ORANGE COUNTY  
WATERSHED  
MASTER PLANNING  
ORANGE CO. CA

SCALE	1" = 8,000'
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/30/10
JOB NO.	9826-E





P:\9526\6-GIS\Mxd\Reports\InfiltrationFeasibility\_20110215\9526\FigureXVI-1\_RainfallZones\_20110215.mxd



ORANGE COUNTY TECHNICAL GUIDANCE DOCUMENT		RAINFALL ZONES	
JOB		CA	
SCALE	1" = 1.8 miles	ORANGE CO.	
DESIGNED	TH	FIGURE	
DRAWING	TH	XVI-1	
CHECKED	BMP		
DATE	04/22/10		
JOB NO.	9526-E		



# ATTACHMENT C

GEOTECHNICAL REPORT

June 13, 2019

Project No. 19046-01

To: Shea Properties  
130 Vantis, Suite 200  
Aliso Viejo, California, 92656

Attention: Mr. Rick Rutecki, Vice President of Commercial Construction

Subject: Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California

## INTRODUCTION

In accordance with your request and authorization, NMG Geotechnical, Inc. (NMG) has performed a geotechnical feasibility study for the subject mixed-use development site in the City of Cypress, California. The approximately 13-acre site, located on the northeastern corner of Siboney Street and Katella Avenue, is currently a vacant lot covered primarily with mature asphalt pavement. The primary purpose of our study was to provide a summary of the geologic and geotechnical conditions of the site, along with an evaluation of the feasibility of the project with respect to geotechnical constraints. From these data, this report provides preliminary design recommendations to be used for your development cost estimating.

The site geologic conditions include the following:

- Predominantly silty and sandy soils in the upper 2 to 10 feet with relatively low expansion potentials;
- Compressible clayey and silty alluvium with some sand layers below 10 feet;
- Shallow groundwater;
- Located in a mapped liquefaction hazard zone;
- Not located within an Alquist-Priolo Fault Zone;
- No mapped faults in the immediate site area; and
- Subject to seismic shaking resulting from earthquakes produced by nearby active faults.

Seismic shaking, potential liquefaction induced ground settlement/deformation, shallow groundwater, and settlement of the heavier structures planned at the site are the primary geotechnical design constraints. Some type of ground improvement, such as rammed aggregate piers or stone columns, will significantly mitigate these constraints. Groundwater and wet soil conditions will require proactive measures during grading and construction of underground infrastructure. Based on our review, we conclude that the subject property is feasible for the planned development from a geotechnical viewpoint provided the recommendations herein are utilized during design and implemented during grading and construction.

## **ATTACHMENTS**

Figure 1 - Site Location Map – Rear of Text

Figure 2 - Boring, Well and CPT Location Map – Rear of Text

Appendix A - References

Appendix B - Boring and CPT Logs

Appendix C - Laboratory Test Results

Appendix D - Liquefaction Analysis

## **SCOPE OF SERVICES**

Our scope of services for this study included the following:

- Research and review of in-house data (referenced in Appendix A) and our recent experience of this locale pertaining to the geologic conditions in the vicinity of the project, including underlying soil types, recent and historic groundwater levels, and grading impacts of saturated soil;
- Review of historic, site-specific project geotechnical reports related to prior studies at the site (referenced in Appendix A);
- Archive search for prior geotechnical reports through the City of Cypress;
- Site reconnaissance to observe existing conditions, locate existing groundwater observation wells and obtain current groundwater data;
- Observation and measurement of groundwater level in open excavation at construction site on the south side of Katella across from the subject site;
- Review of available online historic aerial photographs and topographic maps dating back to 1927;
- Obtaining a groundwater well permit from the County of Orange;
- Excavation of 5 small-diameter borings (one hollow-stem-auger boring to 20 feet below ground surface (bgs) and four hand-augered borings to 5 feet bgs). Disturbed bulk soil samples were collected from the upper 5 feet of each boring. After hand-augering the upper 5 feet, the deeper boring (OW-1) was excavated with a truck-mounted drill rig. Soil was sampled at select intervals using a California-type, split-spoon sampler with 2.5-inch-diameter brass rings, driven with a 140-pound automatic hammer dropping 30 inches. Resistance to driving was recorded in blows per foot and is shown on the boring logs in Appendix B. The drill rig was also used to collect ring samples from the bottom of the four hand-excavated borings.
- Collection of bulk soil samples and relatively undisturbed soil samples in the five borings;
- Laboratory testing of selected soil samples for classification and engineering properties;
- Conversion of the 20 foot boring (OW-1) to a groundwater observation well;
- Evaluation of site seismicity;

- Liquefaction analyses using cone penetrometer (CPT) data from a prior study (Leighton, 2017);
- Seismic settlement analysis;
- Static settlement analysis of planned major structures using the above mentioned CPT test results, along with assumed typical foundation loads;
- Review of ground improvement alternatives, including proposal from Western Ground Improvement;
- Preparation of this report summarizing our findings, conclusions and recommendations.

The approximate location of the borings excavated for this study and the three groundwater observation wells are shown on Figure 2, Boring, Well and CPT Location Map, at rear of text. The CPT soundings used in our settlement and liquefaction analyses are also shown on that figure. The CPT logs are included in Appendix B and the liquefaction analysis and settlement analyses from the CPT data are included in Appendix D.

## **SITE DESCRIPTION**

The subject site is located just south of the Los Alamitos Race Track in the city of Cypress, California. Specifically, the site is bounded by Winners Circle street on the east, a large asphalt parking area to the north, Siboney Street on the west and Katella Avenue on the south. The site location is shown on Figure 1, Site Location Map.

The site is currently vacant and used for event parking. Temporary parking of trucks and trailers for a commercial business on a portion of the site (southwestern quadrant) was also observed during this study. Most of the site is covered by older degraded asphalt, with a small unpaved dirt area adjacent to the terminus of Winners Circle (cul-du-sac). The south and southwestern boundaries of the site along Katella Avenue consist of some landscaping, including mature eucalyptus trees, shrubs, and turf. There are existing light poles and various electrical utility boxes and lines within the site. The site is drained by two sets of drainage ditches that flow south toward storm drain grates that flow into underground storm drain pipes. A water main valve is present along Siboney Street near the southwest corner of the site. There are two groundwater observation wells which were installed by an unknown party sometime before 2008, during a previous investigation (GPI, 2008). Also, NMG recently installed a groundwater observation well in the southwest quadrant of the site.

## PROPOSED DEVELOPMENT

The conceptual site plan (Option 1) by Architects Orange shows a mixed-use development with the following:

- A rectangular-shaped four-story hotel approximately 50 to 60 feet wide by 300 feet long at the southwest corner;
- Three stand-alone retail buildings ranging from 5,000 to 7,000 square feet each at the southeast corner; a 842-seat theater at the northeast corner;
- A four-story multi-family residential wrap-type structure roughly 380 feet by 370 feet, including an internal five-story parking structure, pool and two open court yard areas.

These proposed buildings are connected with pedestrian walkways and parking areas. Vehicular access to the site will be from multiple entry points off Katella Avenue (one), Siboney Street (two), and Winner's Circle (two off the cul-du-sac).

The preliminary grading plan by the project civil engineer, Kimley-Horn, shows large areas of fill on the order of 1 to 1.5 feet thick above existing elevations. Existing 4- to 5-foot-high berms along Katella Avenue and Siboney Street will be removed during grading.

We understand that an onsite below-ground storm water retention system, such as a Contech corrugated metal pipe system (8-foot-diameter pipes), will be required. The preliminary sizing of this system is on the order of 90 feet wide and over 300 feet long.

## SITE HISTORY

Historic aerial photographs of the vicinity show that the subject site was used for agriculture prior to 1962. A ranch house, approximately ¼ mile to the west, was constructed in 1931. Plow rows can also be seen within the site as early as 1927. In 1947, a small horse-racing track was constructed near the ranch house. In 1953, a large horse-racing track was being constructed just north of the site. In 1963, the racetrack was completed, and the site was paved and used as a parking area for the track. During this time, residential neighborhoods were also constructed south of the site. By 1972, the horse race track had moved slightly to its current location. By 1994, Siboney Street was extended toward the race track and marked the western boundary of the site. The existing landscaped areas were also present by this time. By 2002, Winner's Circle was constructed, marking the eastern boundary of the site. By 2005, the retail buildings on the west of the subject site were constructed. The Costco store on the east was also being constructed in 2005. Since 2005, the site has remained in the same condition as present day.

## PRIOR GEOTECHNICAL STUDIES

Available reports of prior geotechnical investigations of the subject site include those by Geotechnical Professionals, Inc., in 2008, and later by Leighton and Associates for potential commercial land developers in 2017 and 2019. A summary of these studies is provided below:

- The 2008 study evaluated the site for a potential retail development. It included subsurface exploration consisting of 10 CPTs to 50 feet and 8 hollow-stem borings up to 31.5 feet deep. Laboratory testing was performed on samples collected from the borings. They also measured groundwater levels in the borings and reported the existence of two previously installed groundwater monitoring wells (no origin given). The report provided recommendations for the retail development planned at that time (GPI, 2008).
- The 2017 study was performed to assist in a due diligence review for a different commercial development. The subsurface exploration consisted of 12 CPTs to 50 feet and shallow hand excavations for near-surface soil sampling. Limited laboratory testing was performed on those bulk soil samples. The report provided recommendations for the commercial development planned at that time (Leighton, 2017).
- The geotechnical study in 2019 was performed to evaluate a different potential retail development. This study included 8 new CPTs to 50 feet and 9 hollow-stem borings up to 53 feet deep. Laboratory testing was performed on samples collected from the borings. They also measured groundwater levels in the borings. The report provided recommendations for the retail development planned at that time (Leighton, 2019).

Additional studies and associated reports may exist but they were not discovered during this study. NMG explored and graded the Lyon Homes project currently being constructed near the subject site (NMG, 2017a, 2017b, 2018a, 2018b, 2018c). A list of these and other references are included in Appendix A.

## SUMMARY OF GEOTECHNICAL CONDITIONS

**Regional Geologic Setting:** The subject site is located within the Downey Plain, a sub-basin of the larger Los Angeles basin. The site is underlain by approximately 100 feet of Holocene sediments and a total of approximately 2,600 feet of Quaternary sediments (CDMG, 1980).

**Earth Units and Soil Characteristics:** Below the asphalt pavement, prior studies reported between 2 to 9 feet of undocumented artificial fill consisting of moist to wet, moderately to poorly compacted sand, silty to clayey sands and silty clays. Borings across the site indicate the undocumented fill is generally 2 to 5 feet thick with dry densities in the upper 5 feet over 100 pcf (only one test of 98 pcf and one as high as 114 pcf). The deepest undocumented fill appears to be in the southeast corner of the site where two borings encountered 7 to 9 feet of fill. The boring logs reported fragments of fabric, asphalt, brick, concrete and clay pipe (GPI, 2008 and Leighton, 2019). The underlying alluvium consists of similar materials: sands, and silts to 10 feet below ground surface (bgs), and silty clays and clay with thin sand layers from 10 to 30 feet. The alluvial material was described as moist to wet and medium dense/stiff to firm. Significant sand



layers were observed below 30 feet interlayered with the silty clay and clay. The near-surface soil (undocumented fill) is predominantly silty and sandy.

Moisture contents of soil at 5 feet bgs ranged from 20.8 to 26.9 percent. Dry densities ranged from 92.0 to 102.7 pcf. Four expansion index tests for this study resulted in "very low" potentials. Soluble sulfate contents were in the "S0" category (negligible). Two R-value tests had R-values of 16 and 60. Test results are included and summarized in Appendix C and the boring logs are included in Appendix B.

Settlement analyses using prior CPT data resulted in static settlements on the order of 2 to 3 inches for shallow foundations with assumed typical structural loads for the proposed buildings. In addition, seismically induced settlements were calculated to be on the order of 1 to 3 inches.

**Existing Asphalt Section:** Existing asphalt concrete (AC) and aggregate base (AB) was observed in three of the five borings for this study. AC thicknesses ranged from 2 to 3 inches and the AB layer was approximately 2 inches thick.

At the two other boring locations, the existing pavement was so deteriorated that there were no distinct AC or AB sections. Prior borings by others did not report any AC or AB thicknesses.

**Groundwater:** Groundwater at the site is very shallow, ranging from approximately 4½ to 6 feet bgs as measured on April 16, 2019 in two groundwater monitoring wells (MW-1 and MW-2) located onsite (Figure 1). In addition, we measured groundwater at approximately 6 feet BGS in an open trench at the construction site on the southwest corner of Katella Avenue and Winners Circle on April 16, 2019. These measured levels are consistent with the prior study by GPI in 2008, where they measured very similar depths, and NMG's recent subsurface exploration and grading experience (2017 through 2019) at the Ovation Flora Park development located ¼ mile to the west, where we encountered groundwater as shallow as 3½ feet bgs. Also, Geotracker data from sites near the subject property have reported groundwater anywhere from 1 to 7 feet bgs in recent years. These recent data indicate that historic high groundwater reported by CGS (approximately 10 feet bgs) is obsolete.

Groundwater level readings for our study from the two existing wells and the newly installed well are summarized below:

Well No.	Approximate Ground Elevation in Feet Above msl	Depth to Groundwater (Below Ground Surface)	
		<i>April 16, 2019</i>	<i>May 21, 2019</i>
OW-1	31	--	4.75
MW-1	32	4.6'	4.55'
MW-2	32	5.92'	5.8'

The direction of groundwater flow appears to have a slight gradient toward the south to southwest.

**Seismicity, Faulting, and Seismic Hazards:** Based on background review, no known active faults are located within or immediately adjacent to the subject site, nor is it located within an Alquist-Priolo Fault Rupture Hazard Zone (CGS, 2007). Therefore, the potential for primary ground rupture is considered very low at the site.

The site is mapped by the State of California as having potentially liquefiable soil (CGS, 1998). Leighton reported a PGA of 0.55 at the site with a seismic category of D according to their draft report. The primary seismic hazard at the subject site is ground shaking due to a future earthquake on one of the major regional active faults and potential ground deformation due to liquefaction.

Using the USGS de-aggregation computer program (USGS, 2017) and the site coordinates of 33.804 degrees north latitude and 118.042 degrees west longitude, the closest major active faults to the site are the Newport-Inglewood Fault, approximately 4.6 miles southwest of the site, and the Puente Hills Blind-Thrust Fault (Coyote Hills) located 6.1 miles northeast of the site, at depth.

The site is not located within a zone of earthquake induced landslide as mapped by the (CGS, 1998).

Tsunami and seiche are not considered secondary seismic hazards at this site due to the elevation and location.

**Historic Seismicity:** Based on the Environmental Geology of Orange County California (CDMG, 1976), there were reports of water/sand boils, earth and pavement cracks in the city of Cypress and surrounding cities during the March 10, 1933, Long Beach earthquake. Seismic settlement (induced subsidence) from this earthquake was measured to be approximately 0.5 inch through Los Alamitos, Cypress, and La Habra (CDMG, 1976). This earthquake occurred along the Newport-Inglewood Fault system.

**Storm Water Treatment/Storage:** The subject site is underlain by relatively fine sands, silts and clays in the upper 20 feet, with low permeabilities and shallow groundwater ranging from 4½ to 6 feet bgs. Therefore, the site is not suitable for storm water infiltration systems.

Underground treatment and/or storage systems must account for hydrostatic uplift (buoyant) forces due to the shallow groundwater.

## **CONCLUSIONS AND GENERAL RECOMMENDATIONS**

Based on our feasibility-level study, the proposed development is feasible provided the main geotechnical constraints of compressible soils, seismically induced settlement, and seismic shaking are mitigated. The primary grading and construction phase issue will be the presence of shallow groundwater and associated saturated soil conditions which will be encountered during excavations for remedial removals and underground improvements. These and other conditions are discussed below.

### **1. Site Demolition**

Aggregate derived from crushing existing AC and the existing AB may be suitable for stabilizing saturated excavation bottoms or as bedding under pipelines. These materials often can be tested and classified for use as crushed miscellaneous base (CMB), which can also be used for future pavements and below structural slabs-on-grade.

Existing buried structures, foundations, utilities and pipelines and prior backfill should be removed, with resulting excavations backfilled with engineered fill.

### **2. Foundation Types and Remedial Measures**

Compressible and liquefiable soils at the site will require either deep foundations or some type of ground improvement for the larger buildings. The best suited ground improvement to mitigate settlement of the large structures should be stone columns or rammed aggregate piers (RAP) on the order of 15 feet deep. For the RAP method, we concur with the preliminary design values provided to you by a RAP specialty contractor using Geopier brand RAPs: bearing value of 7,000 psf; a coefficient of sliding resistance of 0.40; and total static and differential settlements limited to less than 1 inch and 1/2 inch in 30 feet, respectively. Additional differential seismic settlement on the order of 1 to 1.5 inches may be expected with RAPs.

Building areas where ground is improved with RAPs or stone columns should be provided with a minimum 2-foot-thick layer of newly compacted fill. Commonly, a surface layer of aggregate is recommended with RAPs or stone columns. This layer may be counted toward the 2-foot-thick layer recommendation. In other words, building pads may be graded with a 1-foot-thick layer of fill, left low by one foot, then capped with one foot of aggregate following RAP installation.

The smaller retail buildings may be supported on a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement. The fill material, including aggregate, should be a minimum of 5 feet below finish grade or 3 feet below bottom of foundations, whichever is deeper. The bottom of the excavation should have a layer of geogrid, such as Tensar 130 or BX1515 and a minimum of 2 feet of aggregate base. The remaining fill may be compacted native soil. The deeper undocumented fill in the southeast corner of the site (future retail shops area) as described in the Summary of Geotechnical Conditions, should be completely removed and replaced with engineered fill. Significant amounts of debris and/or larger sized debris should be culled from the removed soil prior to it being placed as compacted fill. These removals and replacement operations very likely will be below the groundwater table. Therefore, local dewatering and excavation bottom stabilization should be anticipated. With the

aforementioned remedial measures, total and differential settlements of the smaller retail buildings should be less than 1-inch and ½-inch over a 30-foot span.

RAPs or the above described geogrid and aggregate system is also recommended for larger walls, monuments, signs, etc. if designed with shallow spread footings.

### **3. Remedial Grading of Non-structural Areas**

All other areas of the site which may have vehicular paving or hardscape improvements should be provided with a minimum of 2 feet of newly compacted fill below the bottom of pavements and slabs-on-grade. This grading should not be impacted by groundwater or wet soil conditions unless it is during the rainy season.

### **4. Shallow Groundwater and Wet Soil**

Excavations deeper than 3 feet in some areas and 4 feet in others are likely to encounter shallow groundwater and/or soft, wet soil. Grading in these conditions will require some type of ground stabilization, such as cement treatment or aggregate or a combination of both. (Onsite soils are not suitable for lime treatment due to the primarily sandy composition.) Geofabric or geogrid is recommended in combination with aggregate to reduce the required depth of treatment, amount of aggregate and time required to backfill the excavations. Excavations and grading from existing ground surface to within 2 feet of the groundwater table, such as the grading for parking lot areas, will likely not require soft ground stabilization.

From our experience, 1.5 to 2 feet of cement-treated soil mixed at 6 percent cement content by weight was sufficient to stabilize wet excavation bottoms. For aggregate method, a geogrid, such as Tensar 130 placed on the bottom with approximately 1 to 2 feet aggregate, was sufficient to stabilize the bottoms enough to place native soil as compacted fill. Success factors for these methods included experienced contractor/operators for excavating wet ground without getting equipment mired; placement and spreading of stabilization materials; skilled soil treatment contractors using proper equipment and techniques; and good planning/staging for timely excavation and stabilization/fill placement.

Site soil conditions are not suited for pre-construction dewatering using a well point system; while there are abundant sandy soils, many of the sands have high silt and some clay content, which result in low permeabilities. Local sump pumps should be sufficient for areas where groundwater rises in an excavation. At the nearby Lyon Homes (Ovation) site, smaller excavation areas allowed for more rapid stabilization and backfilling without the need for significant use of sumps. Deeper excavations left open for longer periods or overnight will be prone to filling with standing groundwater.

Larger underground structures may require extra thickness of aggregate bedding due to the shallow groundwater and saturated soils. Cement-treated soil stabilization is also a viable option. Buried structures, such as storm water retention/treatment systems, must consider potential hydrostatic uplift forces in their design.

## **5. Slabs-on-Grade for Structures**

Concrete slabs-on-grade under the structures should be a minimum of 4 inches thick and may be constructed over the aggregate layer above the RAPs or stone columns. The smaller retail building slabs may be constructed over the anticipated sandy subgrade fill.

## **6. Vehicular Pavements**

Prior studies did not perform any R-value tests of onsite soil for vehicular paving design but assumed R-values are in the 40 to 60 range, owing to the near-surface soil being predominantly sandy. We believe these assumptions to be overly optimistic based on our local experience. The sands at the site are predominantly fine sands with significant amounts of silt and some clay. From our very limited testing (two R-value tests), we used a design R-value of 25 and assumed traffic indices (TIs) in order to arrive at the following preliminary pavement sections:

- Parking Stalls (little or no potential for heavier truck traffic): 3.5" AC/6" AB.
- Drive Aisles/Secondary Loop Roads (passenger cars, light duty trucks): 3.5" AC/ 7" AB.
- Main Entry Drives with Some Truck Traffic: 4" AC over 10" AB.

Final sections may change depending on postgrading soil testing for R-values and site specific traffic index values, which should be calculated by a traffic engineer. Truck ramps and loading docks will require thicker AC/AB sections or PCC pavements.

## **7. Earthwork Bulking and Shrinkage Factors**

For estimating grading quantities, the following shrinkage factors are provided:

- Existing Fill: 0 to 2 percent shrinkage
- Native Alluvium: 10 to 15 percent shrinkage

Ground subsidence due to grading operations should be less than 0.1 inch due to the age and prior use of the site.

## **8. Cement Type and Corrosivity**

Soluble sulfate contents of soil at this and adjacent sites are in the "S0" category (negligible) and soil corrosivity is in the "moderately corrosive" category. Other soil chemical constituent contents, such as chlorides, were not particularly high as reported by others (Leighton, 2019 and GPI, 2008).

## **9. Exterior Hardscape**

Following site grading, near-surface fills are expected to have "very low" to "low" expansion potential, though some occurrences of "medium" expansive soils cannot be completely ruled out. For estimating purposes, you may assume concrete hardscape designed and constructed for "low" expansion potentials, overall. Final hardscape design should be based on soil sampling and laboratory testing following the completion of site grading.

Concrete flatwork for people spaces, walkways, sidewalk, etc., may be 4 inches thick with appropriate control and expansion joints, as specified by a landscape architect to mitigate concrete shrinkage cracking. No reinforcement, subbase or AB is required from an expansive soil standpoint.

## **10. Additional Exploration, Testing, and Analyses**

- The need for additional exploration (borings, test pits or CPTs) and laboratory testing of soil should be evaluated once the development plan is finalized, especially the structural characteristics and structure locations.
- Exploration with a backhoe is recommended to further investigate the extent and depths of the undocumented fill.
- Settlement analyses should be refined once actual rather than the assumed structural foundation loads are available.
- The final grading plan should be reviewed by the geotechnical consultant and the remedial grading recommendations in this report should be re-evaluated in light of the planned cuts and fills and extent of ground improvement measures.
- Pavement designs should be finalized based on TIs provided by a traffic engineer and R-value testing of near-surface soil following grading of the site.
- The groundwater monitoring wells should be read periodically leading up to the start of grading. We recommend two readings during the summer months and two in the fall and winter.
- The design parameters and recommendations herein are based on the anticipated engineering properties of the onsite soil. Import soils, if required, should be evaluated and tested as necessary to verify their engineering properties are similar or better than the onsite soils.

## **11. Limitations**

This report has been prepared for the exclusive use of our client, Shea Properties, within the specific scope of services requested by them for the Cypress mixed use project. This report or its contents should not be used or relied upon for other projects or purposes or by other parties without the written consent of Shea Properties and NMG. Our methodology for this study is based on local geotechnical standards of practice, care, and requirements of governing agencies for a given time. No warranty or guarantee, express or implied is given.

The findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can be very different in between data points, and can also change over time. Our conclusions and recommendations are subject to verification and/or modification with more exploration and/or during grading and construction when more subsurface conditions are exposed.

NMG's expertise and scope of services did not include assessment of potential subsurface environmental contaminants or environmental health hazards.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

NMG GEOTECHNICAL, INC.



Ted Miyake, RCE 44864  
Principal Engineer



William Goodman, CEG 1577  
Principal Geologist

ZKH/TM/WG/grd

Distribution: (1) Addressee (E-Mail)  
(1) Mr. Sean McEachern, Shea Properties (E-Mail)  
(1) Mr. Kevin McCook, Shea Properties (E-Mail)  
(1) Ms. Elizabeth Cobb, Shea Properties (E-Mail)  
(1) Mr. Jon Stephani, Shea Properties (E-Mail)  
(1) Mr. Jeff Cunningham, Shea Properties (E-Mail)  
(1) Mr. Joe Hall, CSI (E-Mail)  
(1) Mr. Greg Harlock, Snyder-Langston (E-Mail)  
(1) Mr. Jason Marechal, Kimley-Horn (E-Mail)





P:\2019\19046-01 Shea Properties Cypress\Drafting\ArcGIS\SiteLocation.mxd



Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,  
AeroGRID, IGN, and the GIS User Community

0 375 750  
Feet  
1 inch = 750 feet



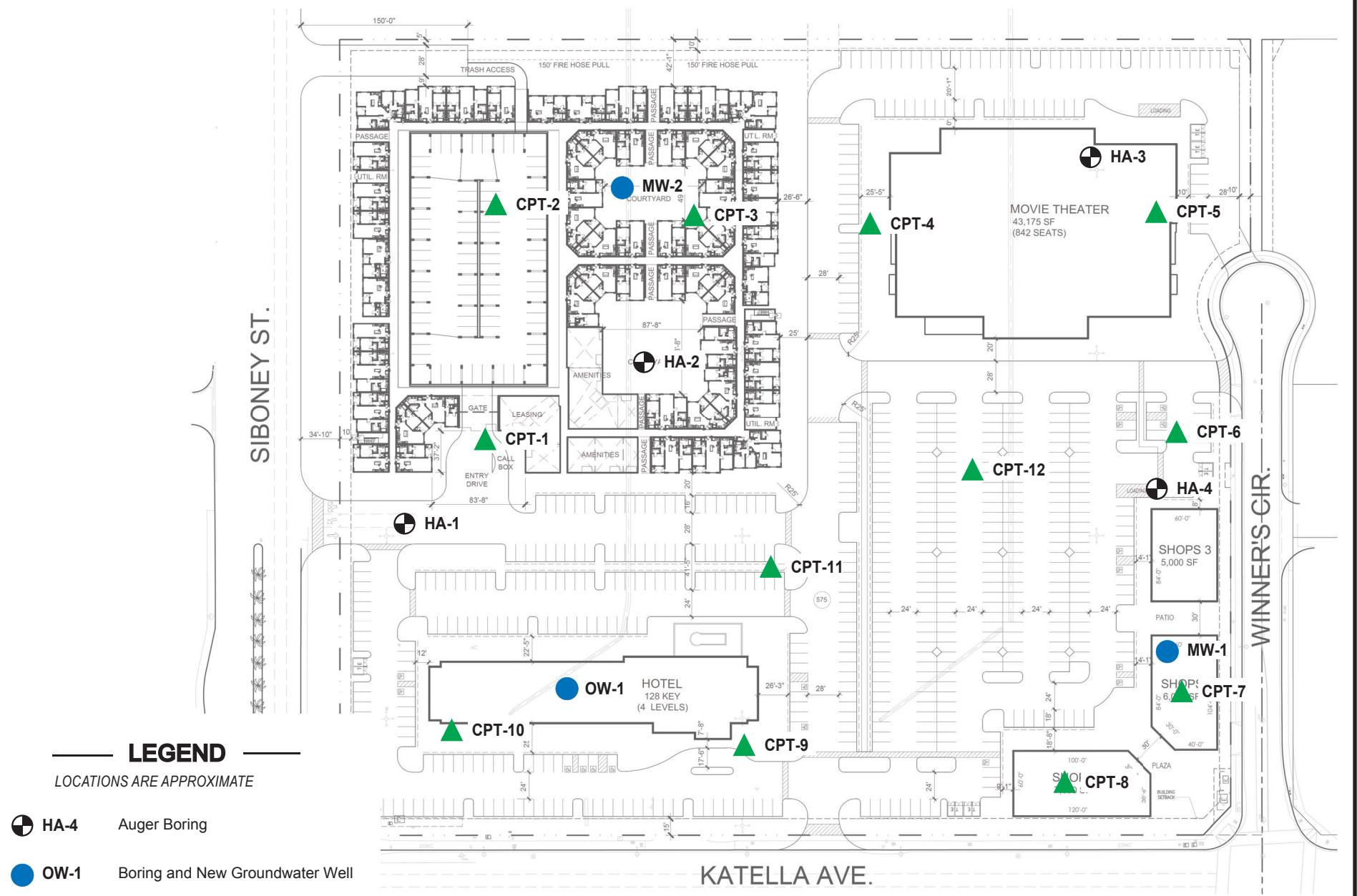
## SITE LOCATION MAP

SHEA PROPERTIES  
CITY OF CYPRESS  
COUNTY OF ORANGE, CALIFORNIA

Project Number: 19046-01 By: TM  
Project Name: Shea Properties / Cypress  
Date: 6/13/2019 Figure 1







# **APPENDIX A**

## **APPENDIX A**

### **REFERENCES**

- Albus-Keefe & Associates, Inc., 2016, Rough Grading Plan Review Report, Proposed Senior Residential Community (Barton Place) and Commercial/Retail Development, Northeast of Katella Avenue and Enterprise Drive, City of Cypress, California, Job No. 2469.00, dated March 18, 2016.
- California Division of Mines and Geology (CDMG), 1976, Environmental Geology of Orange County, California Open-File Report 79-8 LA.
- California Division of Mines and Geology (CDMG), 1980, Classification and Mapping of Quaternary Sedimentary Deposits for Purposes of Seismic Zonation, South Coastal Los Angeles Basin, Orange County California, Annual Technical Report, F.Y. Sept. 19, 1979 - Sept. 18, 1980, Open File Report 81-966 O.F. R 80-19L.A. Plate No. 1, Map Nos. 1 through 4, Authored by Davis, J. F.
- California Geological Survey, Department of Conservation 1998, Seismic Hazard Zone Report for The Los Alamitos 7.5-Minute Quadrangle, Orange County California, Seismic Hazard Zone Report 019.
- California Geological Survey, Department of Conservation, 1999, Seismic Hazard Zones Los Alamitos Quadrangle, Orange County California, Seismic Hazard Zone, Released; March 25, 1997.
- Geotechnical Professionals Inc. (GPI), 2008, Geotechnical Investigation Proposed Cypress Retail Center, NWC of Winners Circle and Katella Avenue, Cypress, California, Project No. 2241.1, dated August 26, 2008.
- Hart, E. W. and Bryant, W.A., 2007, Fault Rupture Hazard Zones in California, Alquist Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault zones Maps, Department of Conservation, Division of Mines and Geology, Special Publication 42, Revised 1997, Interim Revision 2007.
- Jennings, Charles W., 2010, Fault Activity Map of California and Adjacent Areas, Department of Conservation, Division of Mines and Geology, Geologic Data Map No. 6.
- Leighton Consulting, Inc., 2017, Due Diligence Geotechnical Evaluation Proposed Commercial Development Northeast Corner of Katella Avenue and Siboney Street, Cypress, California, Project No. 11829.001, dated November 14, 2017.
- Leighton Consulting, Inc., 2019, Report of Geotechnical Investigation, Proposed Retail Development, Northeast of Katella Avenue and Siboney Street, City of Cypress, California, Project No. 11829.005, Draft Report dated February 18, 2019.
- NMG Geotechnical, Inc., 2017a, Preliminary Summary of Findings from Geotechnical Due Diligence Study, Barton Place Project, County of Orange, Cypress, California, Project No. 17020-01, draft memorandum dated March 7, 2017.

## APPENDIX A

### REFERENCES (Continued)

- NMG Geotechnical, Inc., 2017b, Geotechnical Due Diligence Study, Barton Place Project, 4921 Katella Avenue, Northeast Corner of Enterprise and Katella Avenues, City of Cypress, County of Orange, California, Project No. 17007-01, dated March 13, 2017.
- NMG Geotechnical, Inc., 2018a, Geotechnical Report of Observation and Testing during Rough Grading and Construction of Sanitary Sewer, Storm Trap System and Associated Storm Drain for the Commercial/Retail portion of Ovation at Flora Park, City of Cypress, California, Project No. 17007-02, dated March 6, 2018.
- NMG Geotechnical, Inc., 2018b, Geotechnical Review of Production Precise Grading Plan, Ovation at Flora Park, 4701 Katella Avenue, City of Cypress, California, Project No. 17007-02, dated April 12, 2018.
- NMG Geotechnical, Inc., 2018c, Geotechnical Report of Observation and Testing during Rough Grading of the Ovation Residential Development at Flora Park, City of Cypress, California, Project No. 17007-02, dated May 8, 2018.
- U.S. Geological Survey, 2004, Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, dated 2004, CGS Open File Report 99-172.
- U.S. Geological Survey, 2017, Unified Hazard Tool, Dynamic: Conterminous US 2008 (v3.3.1) Deaggregation Program; web site address:  
<https://earthquake.usgs.gov/hazards/interactive/>

### AERIAL PHOTOGRAPHS REVIEWED

<i>Date</i>	<i>Flight</i>	<i>Photo No.</i>	<i>Scale (1"=)</i>	<i>Source</i>
12/31/1927	C-300	M-256	1,500'	U. C. Santa Barbara
9/26/1931	C-1700	92	1,500'	U. C. Santa Barbara
5/23/1938	AXK-1938	28-56	1,666'	U. C. Santa Barbara
6/17/1947	C-11351	7-62	2,000'	U. C. Santa Barbara
11/17/1952	AXK-1953	1K-33	1,666'	U. C. Santa Barbara

Aerial Photos from 1952 to present were reviewed using the following online source:

Nationwide Environmental Title Research, LLC., 2018, Historic Aerials by NETR Online, Version 0.2.4, website address: <https://www.historicaerials.com>

## **APPENDIX B**

## SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
<div>COARSE GRAINED SOILS</div> <div>MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE</div>	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
					GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SM	SILTY SANDS, SAND - SILT MIXTURES
					SC	CLAYEY SANDS, SAND - CLAY MIXTURES
<div>FINE GRAINED SOILS</div> <div>MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE</div>	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
				CH	INORGANIC CLAYS OF HIGH PLASTICITY	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: Dual symbols are used to indicate gravels or sand with 5-12% fines and soils with fines classifying as CL-ML. Symbols separated by a slash indicate borderline soil classifications.

### Sampler and Symbol Descriptions

- Modified California sample (D-#)
- Standard Penetration Test (S-#)
- Undisturbed pushed tube sample (U-#)
- Large bulk sample (B-#)
- Small bulk sample (b-#)
- Approximate depth of groundwater during drilling
- Approximate depth of static groundwater

Note: Number of blows required to advance driven sample 12 inches (or length noted) is recorded.

### Laboratory and Field Test Abbreviations

- AL** Atterberg limits
- CC** Chemical Testing incl. Soluble Sulfate
- CN** Consolidation test
- DS** Direct shear test
- EI** Expansion Index
- GS** Grain Size Analysis (Sieve, Hydro. and/or -No. 200)
- MD** Compaction test
- RV** Resistance Value (R-Value)
- SE** Sand Equivalent
- UU** Unconsolidated Shear Strength

### GENERAL NOTES

- Soil classifications are based on the Unified Soil System and include color, moisture, and relative density or consistency. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate. Bedrock descriptions are based on visual classification and include rock type, moisture, color, grain size, strength, and weathering.
- Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not warranted to be representative of subsurface conditions at other locations or times.

## KEY TO LOG OF BORING

Shea Properties/Cypress Mixed-Use  
Cypress, California  
PROJECT NO. 19046-01



**Geotechnical, Inc.**

Date(s) Drilled	5/13/19	Logged By	ZKH	<div>OW-1</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		7.8 Feet		Total Depth Drilled (ft)	20.0
Comments				Approximate Ground Surface Elevation (ft)	31.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 2" AC over 2" AB. Parking Lot.			
30				ML-CL	<b>Alluvium (Qal)</b> @ 1'-5': Dark brown clayey SILT/silty CLAY, moist.			B-1 @ 1'-5' El, CC
5	B-1							
				SM	@ 5': Olive gray silty fine SAND, very moist, medium dense, some silty layers, trace root hairs, micaceous.	22.8	98.6	
	D-1	17						
				SM-SC	@ 7.5': Brown to dark brown silty clayey very fine SAND, wet to saturated, loose, micaceous, trace silty clay layer.	23.8	92.0	B-2 @ 7.5'-15'
	D-2	12						
10				SM	@ 10': No Recovery. Cuttings showed silty fine SAND, saturated, loose.			
20	D-3 B-2	12						
				ML	@ 15': Grayish brown clayey/sandy SILT, saturated, medium stiff, micaceous.	22.0	102.7	
15	D-4	9						
				CL	@ 18.5': Dark brown silty/sandy CLAY, saturated, medium stiff, trace root hairs, pinhole pores, micaceous.	22.5	102.4	
	D-5	11						
20								
10					Notes: Total Depth: 20.0 Feet. Groundwater Encountered at 12.05 Feet After Drilling. Groundwater 7.80 Feet After Well Construction. Screened Pipe From 4 to 20 Feet, With Monterey #3 In Annulus. Solid Pipe from 0 to 4 Feet, With Annular Seal at 2 to 4 Feet. Concrete Flush Mount Well Cover from 0 to 2 Feet.			
25								

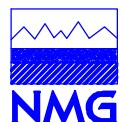
**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-1</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		N/A		Total Depth Drilled (ft)	6.5
Comments				Approximate Ground Surface Elevation (ft)	31.5 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 3" AC over 2" AB. Parking Lot.			
-30		B-1		CL	<b>Alluvium (Qal)</b> @ 0.5'-3': Brown to dark brown silty CLAY, very moist.			B-1 @ 1'-5' RV, EI, CC
				SC	@ 3'-5': Brown clayey fine SAND, wet, micaceous.			
5		D-1	12	CL	@ 5': Upper: Dark brown sandy CLAY, saturated, stiff.	20.8	99.4	
				SM	Lower: Grayish brown silty fine to medium SAND, saturated, loose, micaceous.			
10					Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
-20								
15								
20								
-10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01

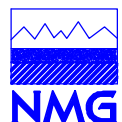




Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-2</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		4.75 Feet		Total Depth Drilled (ft)	6.5
Comments				Approximate Ground Surface Elevation (ft)	31.5 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0					Surface: 2.5" AC over 2" AB. Parking Lot.			
30		B-1		CL	<b>Alluvium (Qal)</b> @ 0.5'-1': Dark brown silty CLAY, very moist.			B-1 @ 1'-5' El, CC
				SM-SC	@ 1'-5': Grayish brown silty/clayey fine SAND, saturated, micaceous.			
5		D-1	12	SM	@ 5': Grayish brown silty fine to medium SAND, saturated, loose, micaceous.	21.5	97.1	
10					Notes: Total Depth: 6.5 Feet. Groundwater at 4.75 Feet After Drilling. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-3</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth: N/A					
Comments				Total Depth Drilled (ft)	6.5
				Approximate Ground Surface Elevation (ft)	32.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0				SM-SC	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot.			B-1 @ 1'-5'
30		B-1		SM	<b>Alluvium (Qal)</b> @ 1'-5': Olive brown silty fine to medium SAND, saturated, loose, micaceous.			
5		D-1	8		@ 5': Olive brown silty fine to medium SAND, saturated, loose, micaceous.	26.9		
10					Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



Date(s) Drilled	5/13/19	Logged By	ZKH	<div>HA-4</div> <div>Sheet 1 of 1</div>	
Drilling Company	BC2 Environmental	Drill Bit Size/Type	10"		
Drill Rig Type	CME 95	Hammer Data	140lb @ 30" Drop		
Sampling Method(s)	Bulk, Modified California				
Approximate Groundwater Depth:		4.5 Feet		Total Depth Drilled (ft)	6.5
Comments				Approximate Ground Surface Elevation (ft)	32.0 msl

Elevation (ft)	SAMPLES			USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	Type	Number	Blows per foot					
0				SM	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot. <b>Alluvium (Qal)</b> @ 0'-5': Olive brown to light olive brown silty fine SAND, very moist to wet.			B-1 @ 1'-5' RV, EI, CC
30		B-1						
5		D-1	5		@ 5': No Recovery.			
10					Notes: Total Depth: 6.5 Feet. Groundwater 4.5 Feet After Drilling. Backfilled with Cuttings and Tamped.			
20								
15								
20								
10								
25								

**LOG OF BORING**  
 Shea Properties/Cypress Mixed-Use  
 Cypress, California  
 PROJECT NO. 19046-01



## **APPENDIX C**

APPENDIX  
SUMMARY OF SOIL LABORATORY DATA

Cypress, California

Boring No.	Boring/Sample Information					Field Wet Density (pcf)	Field Dry Density (pcf)	Field Moisture Content (%)	Degree of Sat. (%)	Sieve/Hydrometer		Atterberg Limits		USCS Group Symbol	Direct Shear			Compaction Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Expansion Index	R-Value	Soluble Sulfate Content (% by wt)	Remarks
	Sample No.	Depth (feet)	End Depth (feet)	Elevation (feet)	Blow Count (N)					Fines Content (% pass. #200)	Clay Content (% pass. #200)	LL (%)	PI (%)		Ultimate Cohesion (psf)	Friction Angle (°)	Peak Cohesion (psf)						
HA-1	B-1	1.0	5.0																				
HA-1	D-1	5.0			12	120.1	99.4	20.8	80.8											16	16	0.06	
HA-2	B-1	1.0	5.0																				
HA-2	D-1	5.0			12	118.0	97.1	21.5	79.0											0		0.05	
HA-3	B-1	1.0																					
HA-3	D-1	5.0			8			26.9															
HA-4	B-1	1.0	5.0																				
HA-4	D-1	5.0			5															1	60	0.05	
OW-1	B-1	1.0	5.0																				
OW-1	D-1	5.0			17	121.2	98.6	22.8	87.0													0.05	
OW-1	D-2	7.5			12	113.9	92.0	23.8	77.3											3			
OW-1	B-2	7.6																					
OW-1	D-3	10.0			12																		
OW-1	D-4	15.0			9	125.3	102.7	22.0	92.8														
OW-1	D-5	18.5			11	125.4	102.4	22.5	93.9														





# R-VALUE TEST DATA     CTM 301 / ASTM D2844

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-1	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown sandy SILT		

Specimen Number	1	2	3	4
Mold Number	10	11	12	
Water Adjustment (g)	+65	+52	+39	
Compactor Pressure (psi)	175	300	350	
Exudation Pressure (psi)	250	412	618	
Gross Weight (g)	3264.8	3236.4	3209.6	
Mold Tare (g)	2130.9	2118.3	2120.8	
Wet Weight (g)	1133.9	1118.1	1088.8	
Sample Height (in)	2.55	2.50	2.42	
Initial Dial Reading	0.0902	0.0502	0.0612	
Final Dial Reading	0.0902	0.0505	0.0620	
Expansion (in x10 <sup>-4</sup> )	0	3	8	
Stability(psi) at 2,000 lbs (160 psi)	74   120	70   116	44   84	
Turns Displacement	4.78	3.50	3.40	
R-Value Uncorrected	15	21	40	
R-Value Corrected	15	21	38	
Moisture Content (%)	13.2	12.1	10.9	
Dry Density (pcf)	119.1	120.9	122.9	
Assumed Traffic Index	4.0	4.0	4.0	
G.E. by Stability	0.87	0.81	0.63	
G.E. by Expansion	0.00	0.10	0.27	
Gf	1.25			

Moisture Content				
Dish No.	OO	I	Q	
Weight of Moist Soil and Dish (g)	254.9	254.4	254.0	
Weight of Dry Soil and Dish (g)	231.1	232.4	233.9	
Water Loss (g)	23.8	22.0	20.1	
Weight of Dish (g)	50.4	50.2	50.3	
Dry Soil (g)	180.7	182.2	183.6	
Moisture Content (%)	13.2	12.1	10.9	

R-Value by Exudation = 16

R-Value by Expansion = 57

R-Value at Equilibrium = 16 By Exudation

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



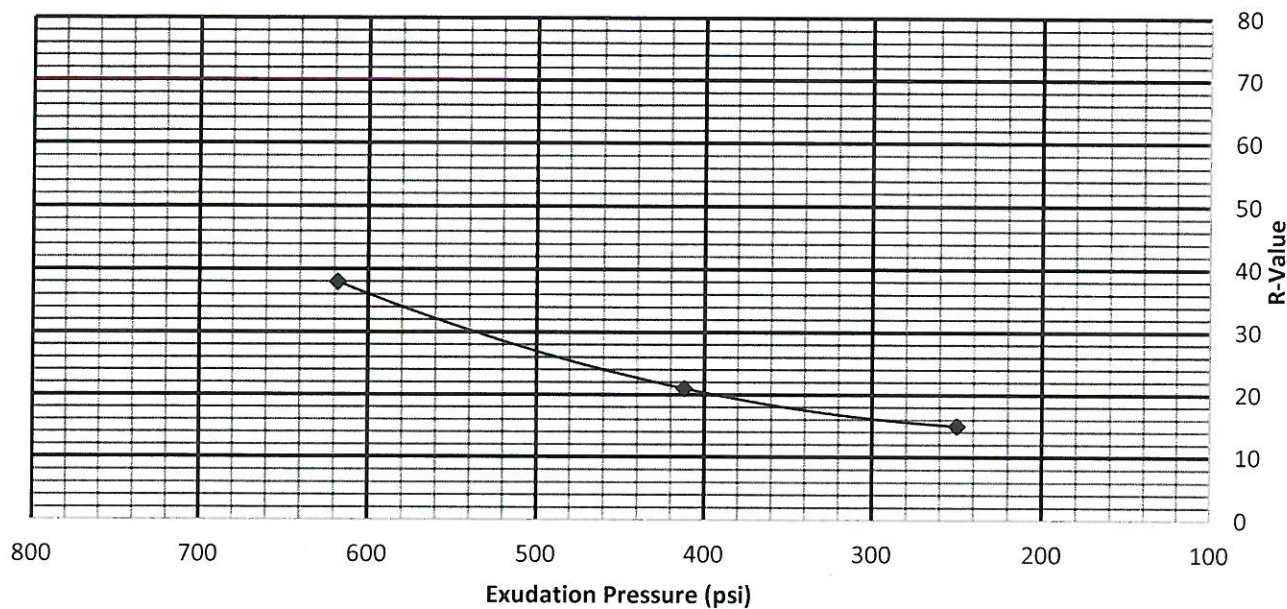
**NMG**  
Geotechnical, Inc.



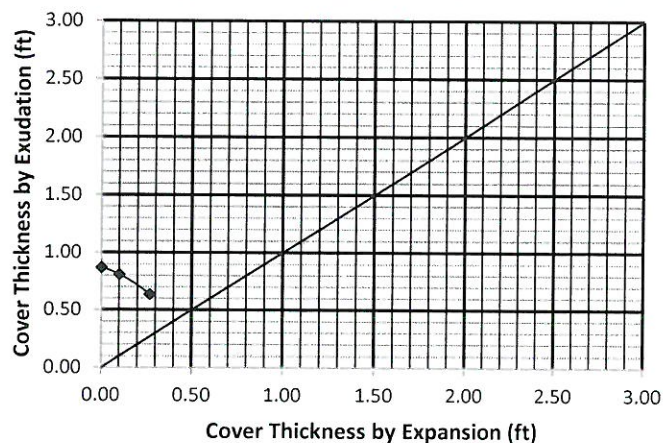
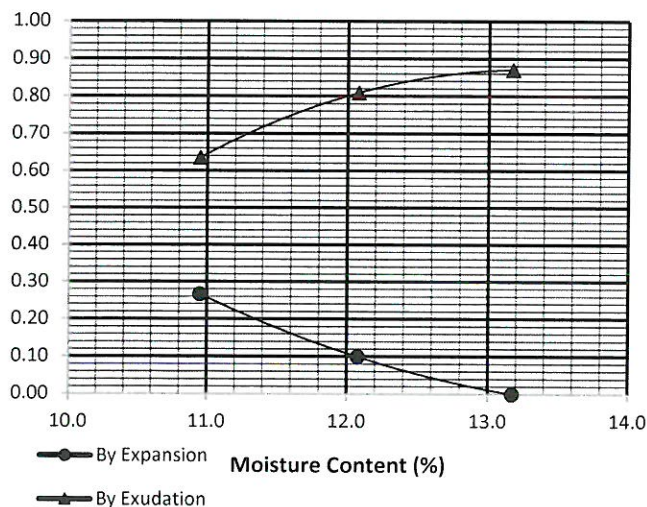
# R-VALUE GRAPHICAL PRESENTATION

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-1	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown sandy SILT		

## R-Value vs. Exudation Pressure



## Cover Thickness by Expansion and Exudation (ft)



Cover Thickness (ft) = 0.44

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



**NMG**

Geotechnical, Inc.



# R-VALUE TEST DATA     CTM 301 / ASTM D2844

Project:     Shea / Cypress	Project No:   19046-01	Date:   5/17/2019
Boring Trench No:   HA-4	Sample No:   B-1	Sample Depth:     1-5'
Field Description:     SM		
Lab Description:     Olive Brown silty SAND		

Specimen Number	1	2	3	4
Mold Number	7	8	9	
Water Adjustment (g)	+30	+18	+45	
Compactor Pressure (psi)	350	350	350	
Exudation Pressure (psi)	376	656	145	
Gross Weight (g)	3193.8	3175.3	3186.6	
Mold Tare (g)	2112.5	2128.5	2120.2	
Wet Weight (g)	1081.3	1046.8	1066.4	
Sample Height (in)	2.53	2.56	2.50	
Initial Dial Reading	0.0607	0.0407	0.0508	
Final Dial Reading	0.0612	0.0412	0.0509	
Expansion (in x10 <sup>-4</sup> )	5	5	1	
Stability(psi) at 2,000 lbs (160 psi)	34    56	30    52	34    58	
Turns Displacement	2.92	3.05	3.63	
R-Value Uncorrected	61	63	55	
R-Value Corrected	61	64	55	
Moisture Content (%)	10.6	9.8	11.5	
Dry Density (pcf)	117.1	112.8	115.9	
Assumed Traffic Index	4.0	4.0	4.0	
G.E. by Stability	0.40	0.37	0.46	
G.E. by Expansion	0.17	0.17	0.03	
Gf	1.25			

Moisture Content				
Dish No.	AA	BB	P	
Weight of Moist Soil and Dish (g)	255.9	251.5	289.0	
Weight of Dry Soil and Dish (g)	236.1	233.5	264.4	
Water Loss (g)	19.8	18.0	24.6	
Weight of Dish (g)	49.8	49.9	50.1	
Dry Soil (g)	186.3	183.6	214.3	
Moisture Content (%)	10.6	9.8	11.5	

R-Value by Exudation     =     60

R-Value by Expansion     =     100

R-Value at Equilibrium =     60 By Exudation

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks:     A traffic index of 4.0 was used for calculation purposes.

Set up by:     CAT/BAJ

Run by:     BAJ/TG

Calculated by:     TG

Checked by:     BAJ

Date Completed:     5/20/2019



NMG

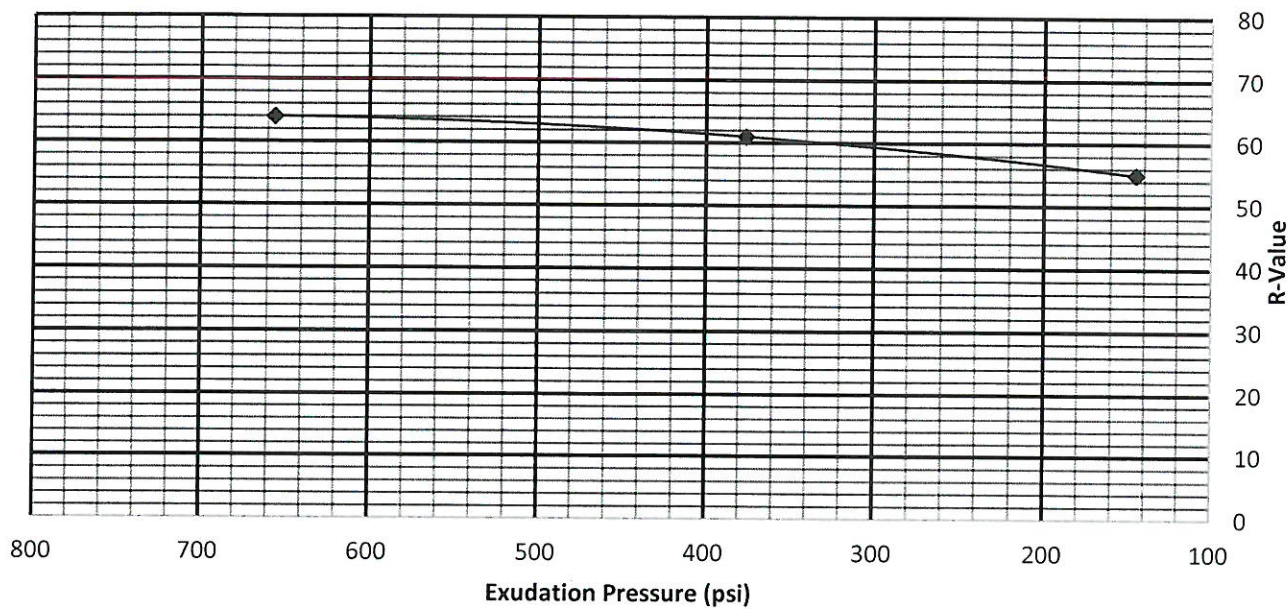
Geotechnical, Inc.



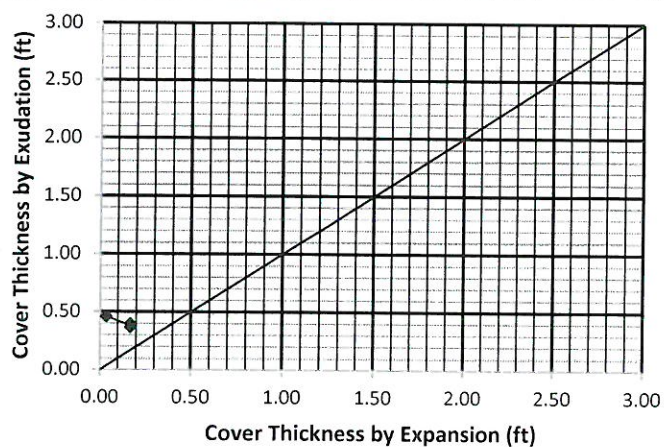
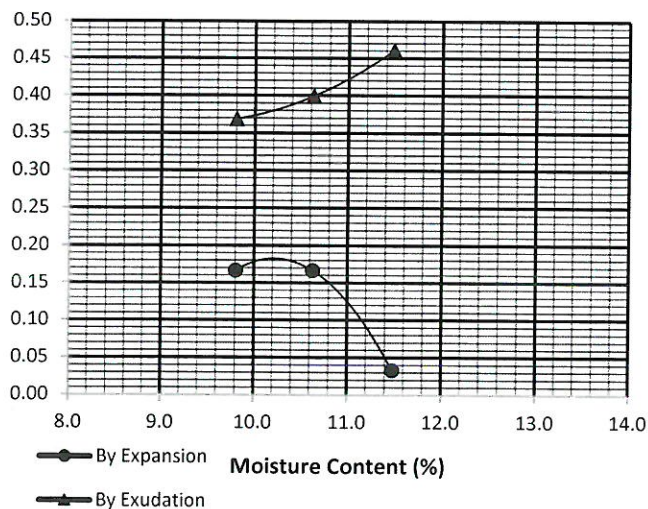
# R-VALUE GRAPHICAL PRESENTATION

Project: Shea / Cypress	Project No: 19046-01	Date: 5/17/2019
Boring Trench No: HA-4	Sample No: B-1	Sample Depth: 1-5'
Field Description: SM		
Lab Description: Olive Brown silty SAND		

## R-Value vs. Exudation Pressure



## Cover Thickness by Expansion and Exudation (ft)



Cover Thickness (ft) = 0.00

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301 and/or ASTM Standard D2844

Remarks: A traffic index of 4.0 was used for calculation purposes.

Set up by: CAT/BAJ

Run by: BAJ/TG

Calculated by: TG

Checked by: BAJ

Date Completed: 5/20/2019



**NMG**

Geotechnical, Inc.

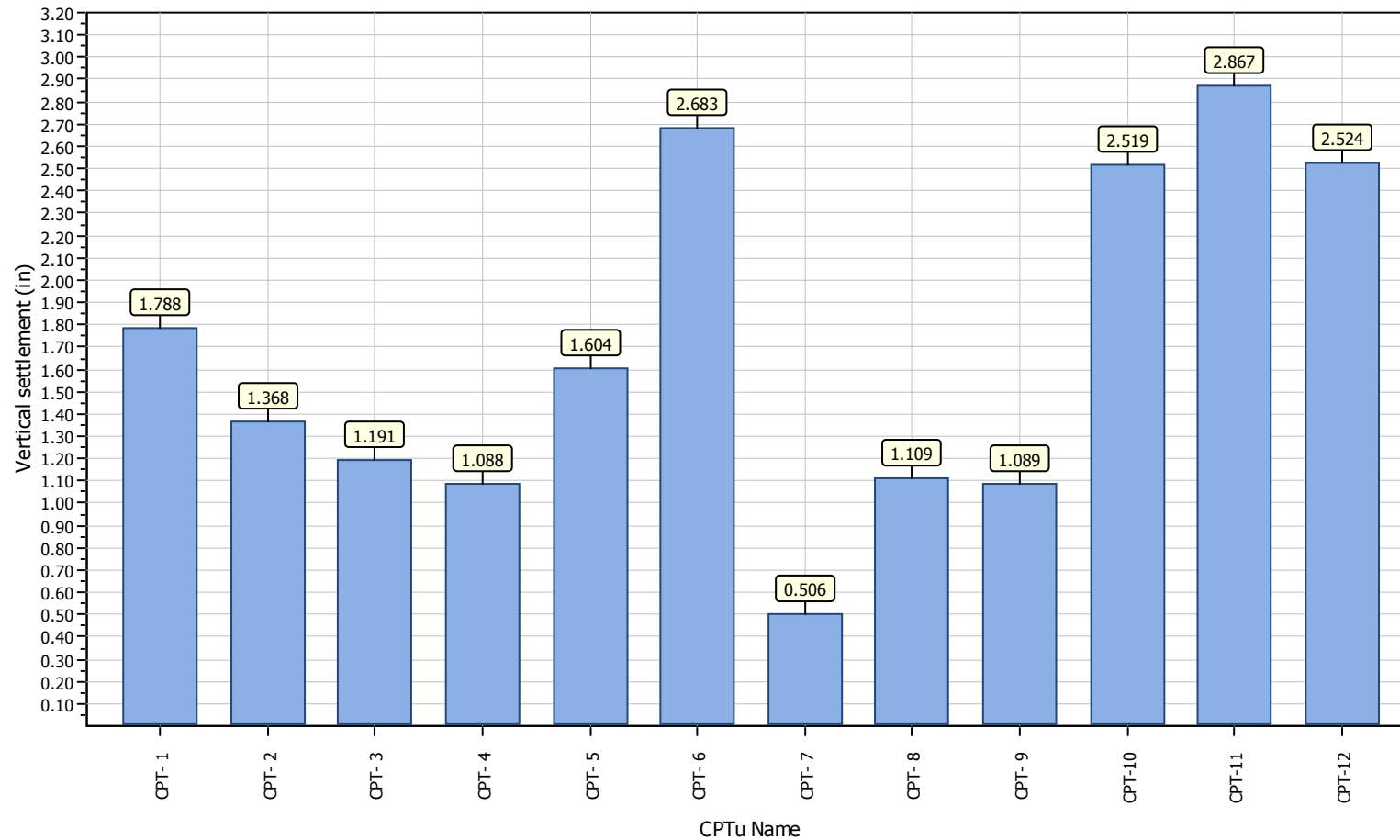
## **APPENDIX D**



**Project title : Shea Properties/Cypress**

**Location : Cypress, California**

### Overall vertical settlements report



## TABLE OF CONTENTS

<b>CPT- 1 results</b>	
Summary data report	1
Vertical settlements summary report	5
<b>CPT- 2 results</b>	
Summary data report	6
Vertical settlements summary report	10
<b>CPT- 3 results</b>	
Summary data report	11
Vertical settlements summary report	15
<b>CPT- 4 results</b>	
Summary data report	16
Vertical settlements summary report	20
<b>CPT- 5 results</b>	
Summary data report	21
Vertical settlements summary report	25
<b>CPT- 6 results</b>	
Summary data report	26
Vertical settlements summary report	30
<b>CPT- 7 results</b>	
Summary data report	31
Vertical settlements summary report	35
<b>CPT- 8 results</b>	
Summary data report	36
Vertical settlements summary report	40
<b>CPT- 9 results</b>	
Summary data report	41
Vertical settlements summary report	45
<b>CPT-10 results</b>	
Summary data report	46
Vertical settlements summary report	50
<b>CPT-11 results</b>	
Summary data report	51
Vertical settlements summary report	55
<b>CPT-12 results</b>	
Summary data report	56
Vertical settlements summary report	60



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

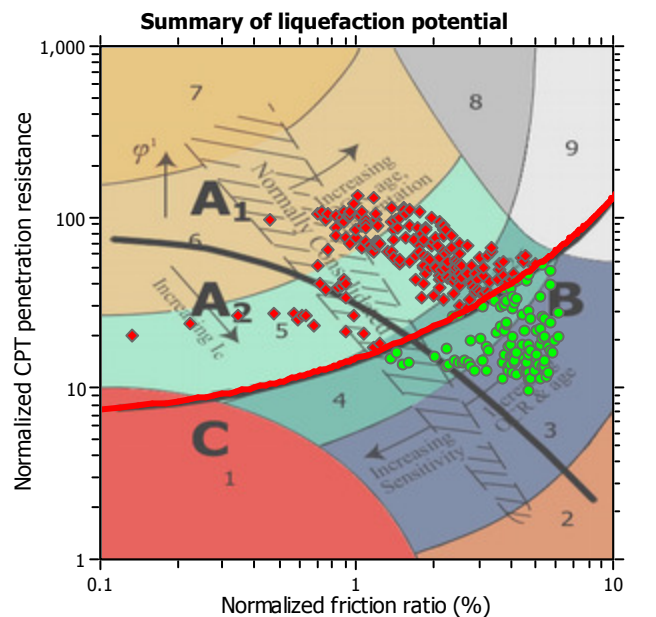
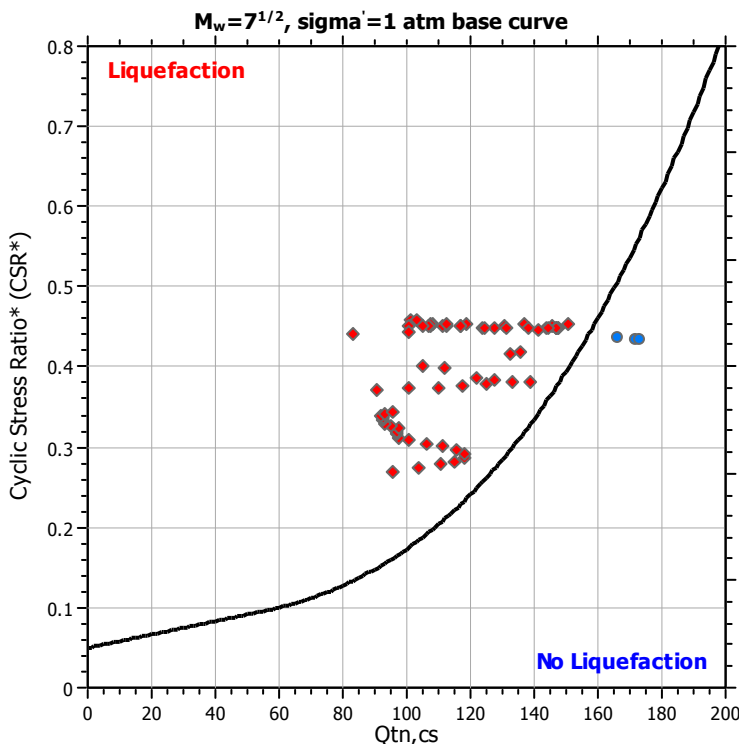
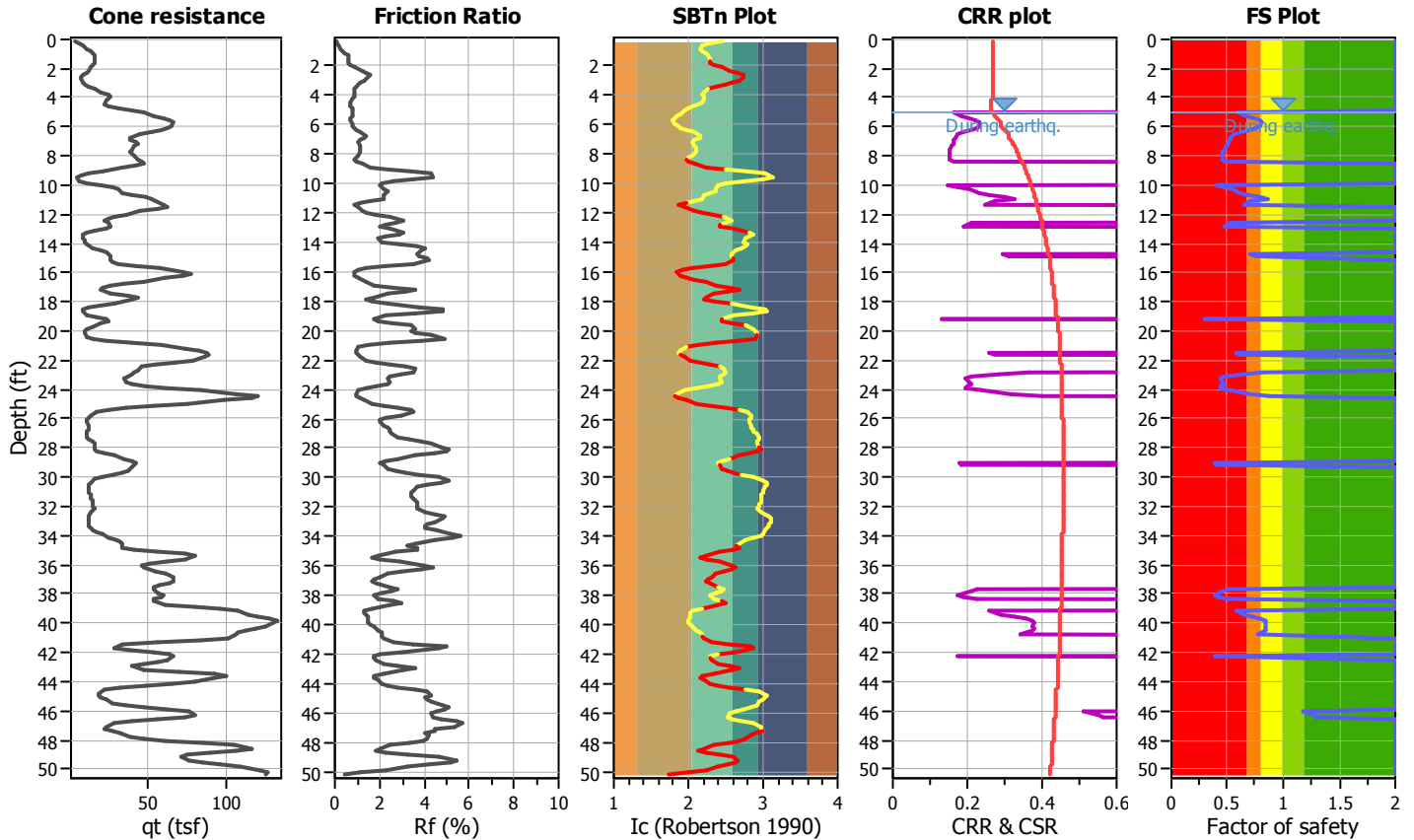
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 1

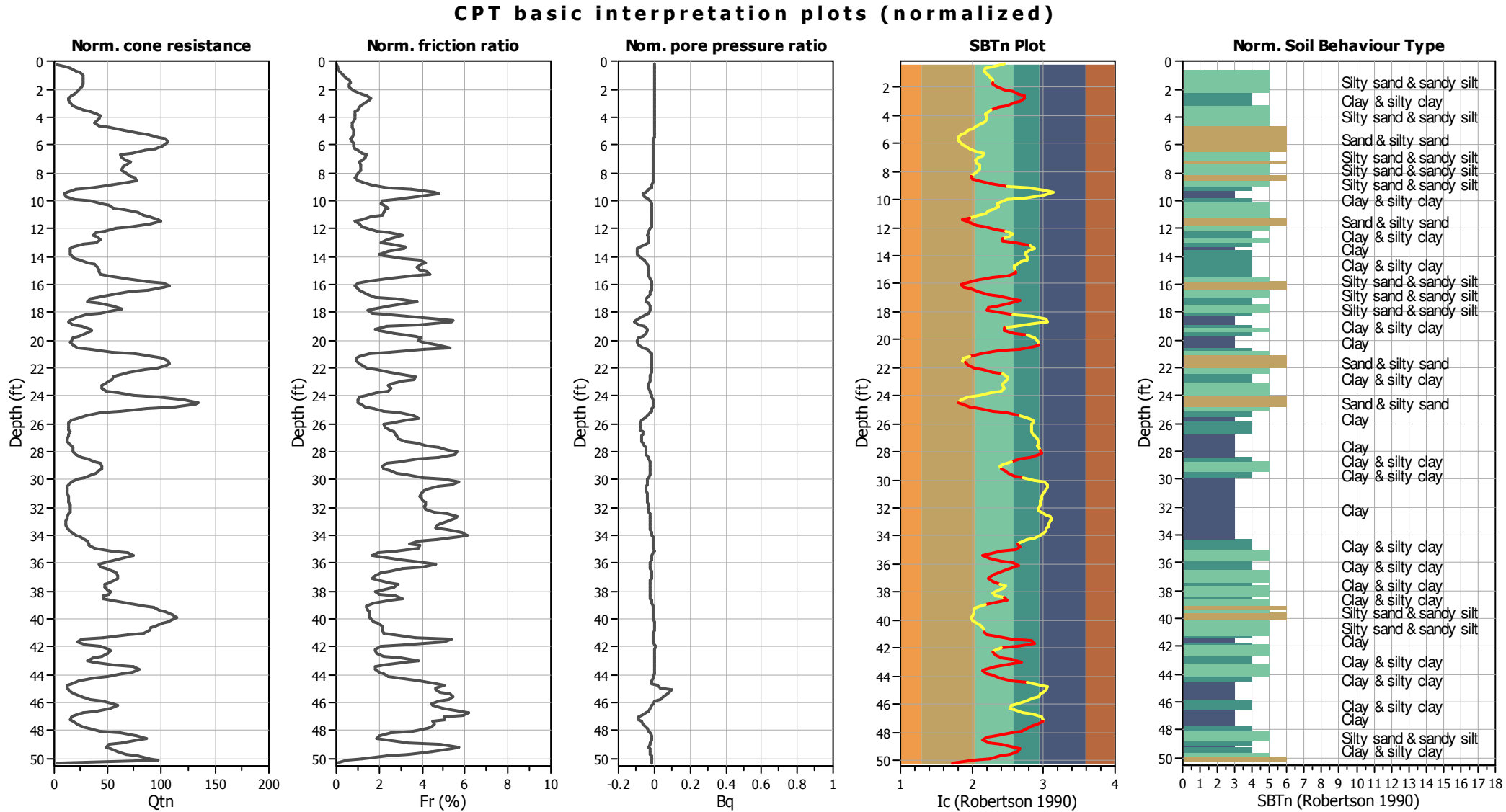
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry





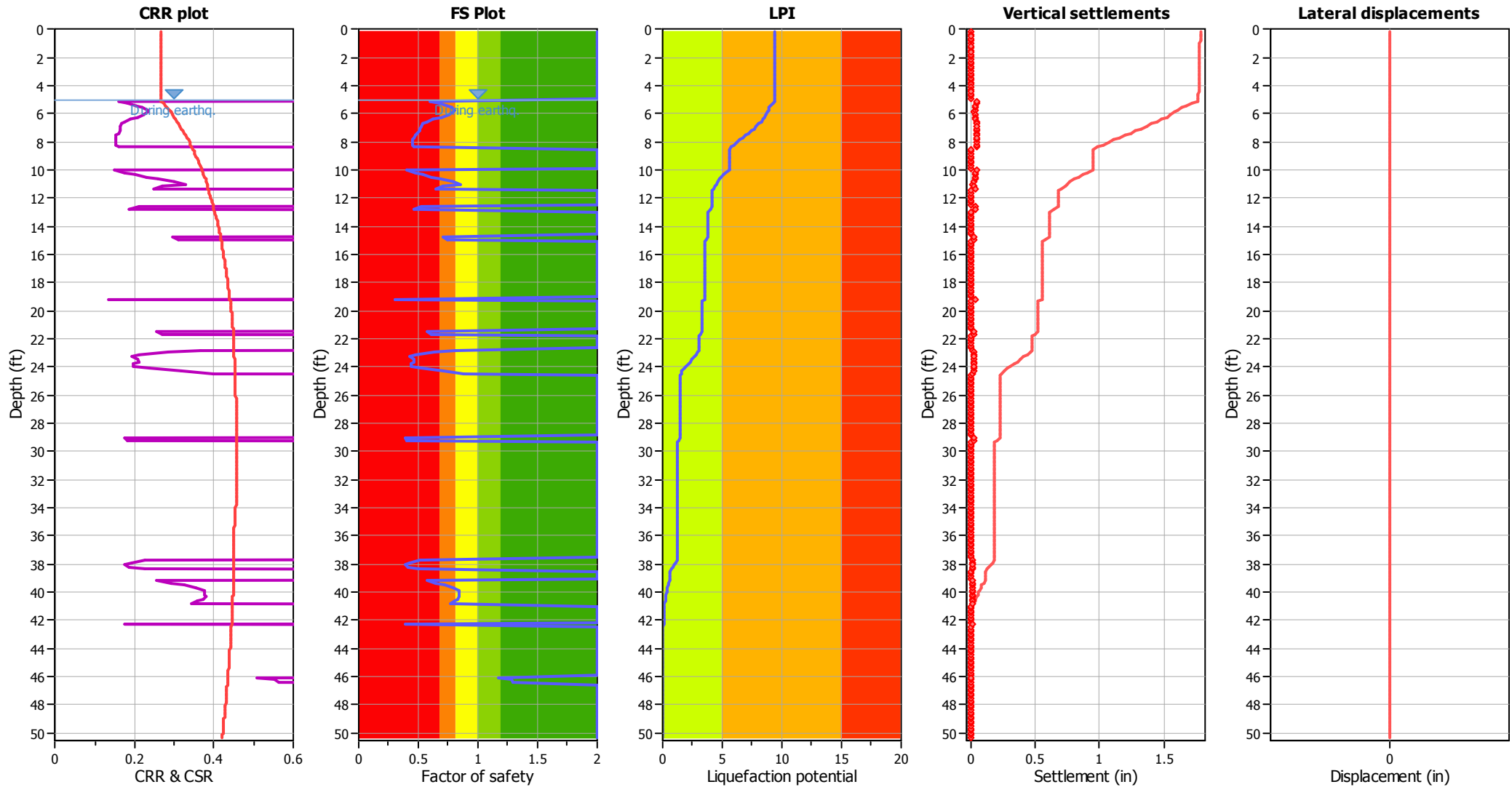
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

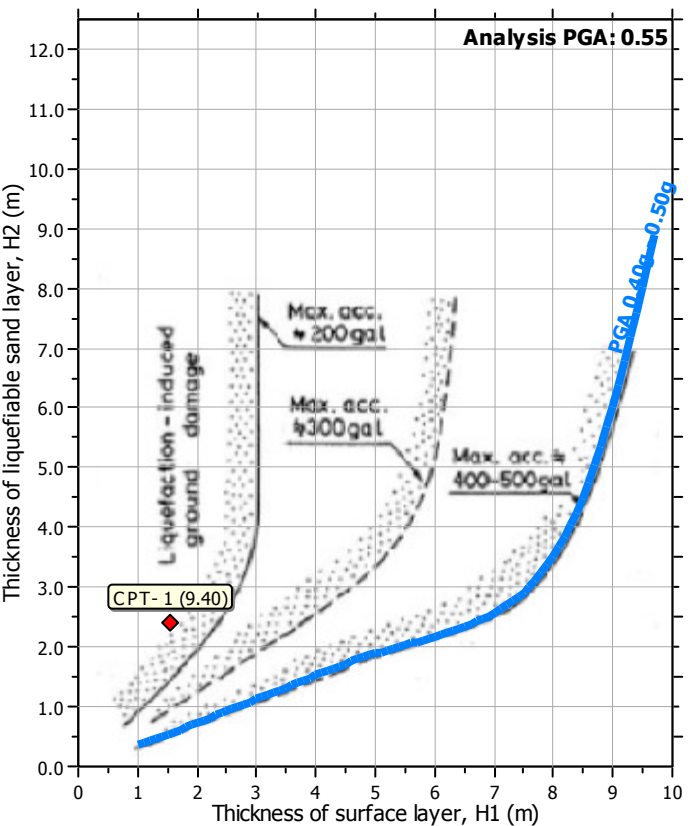
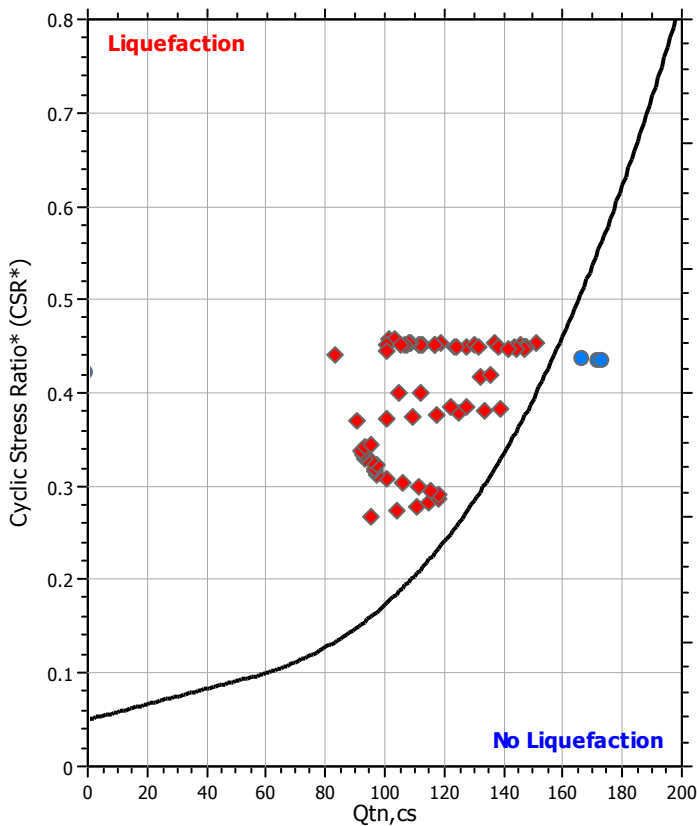
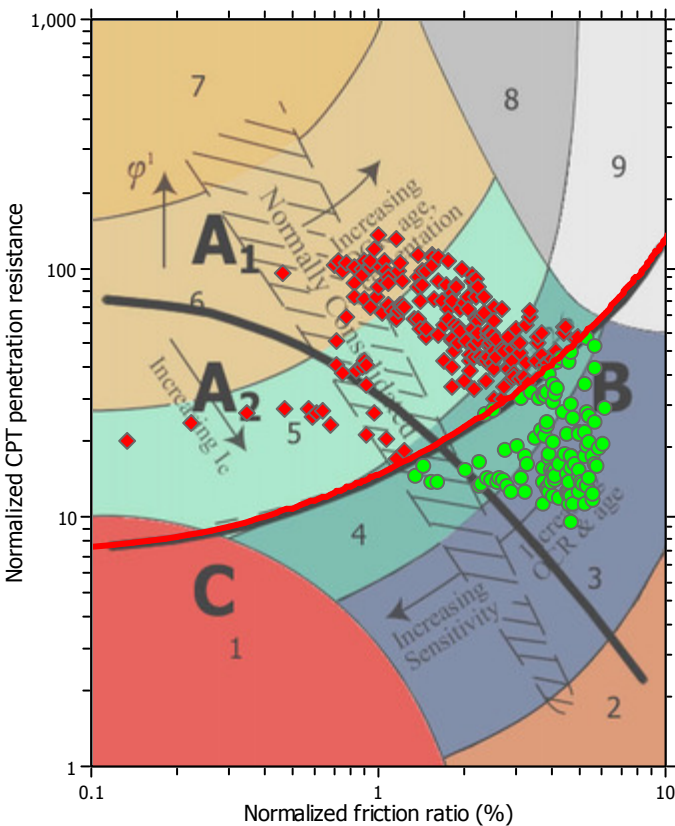
Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk



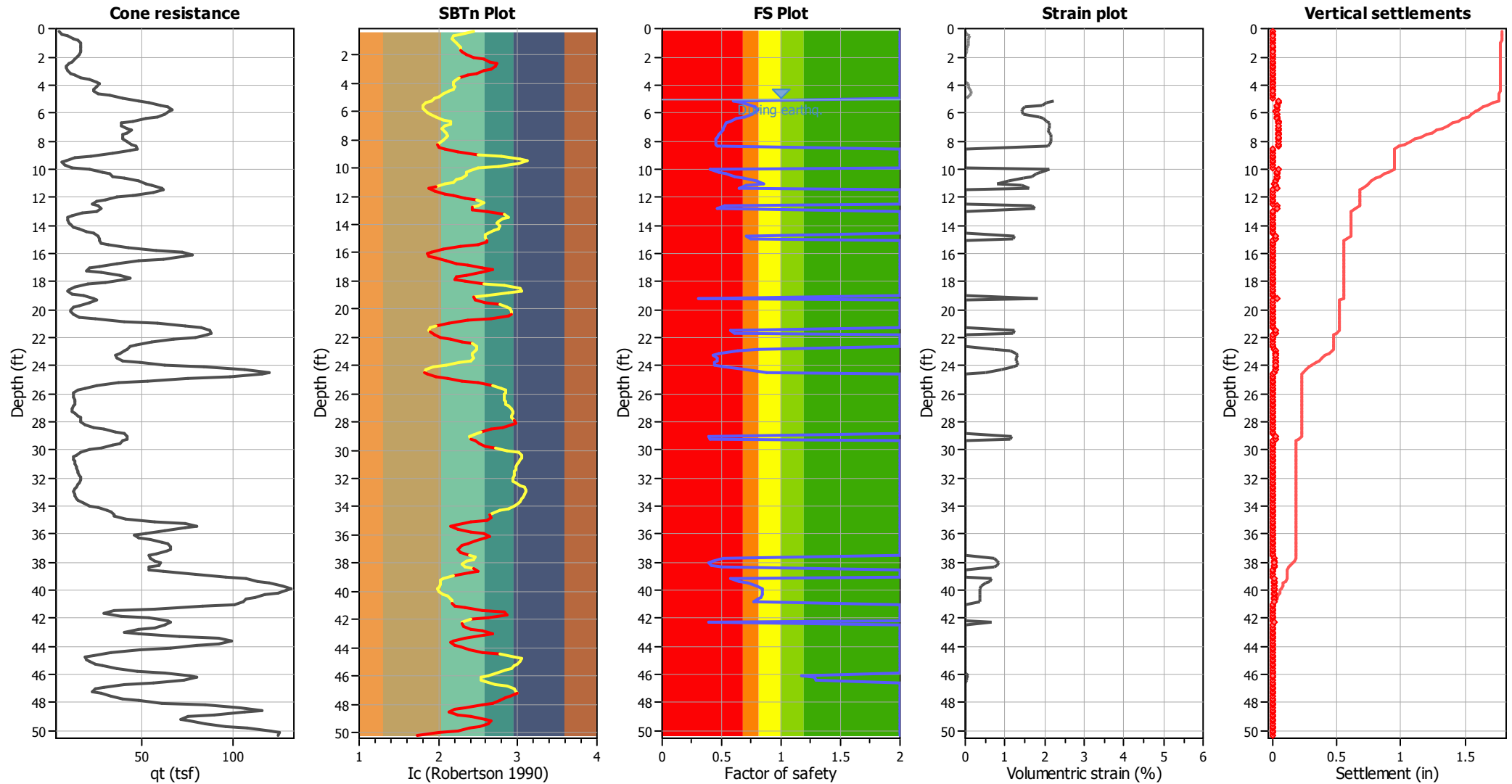
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

**NMG Geotechnical, Inc.**  
17991 Fitch  
Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

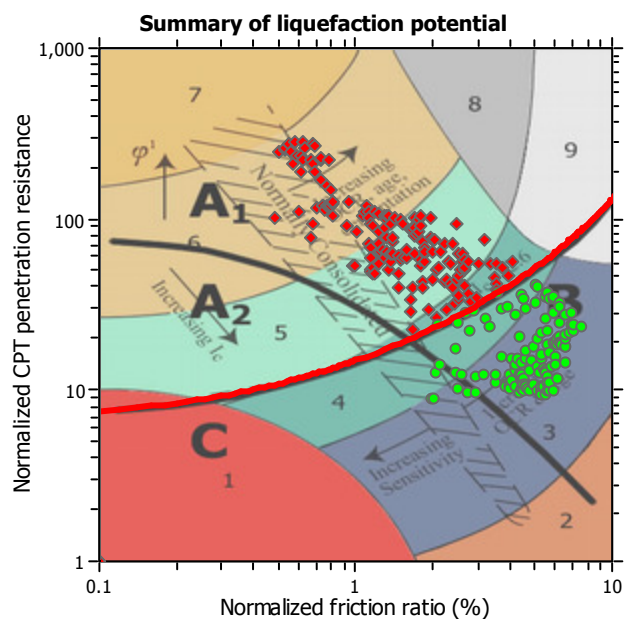
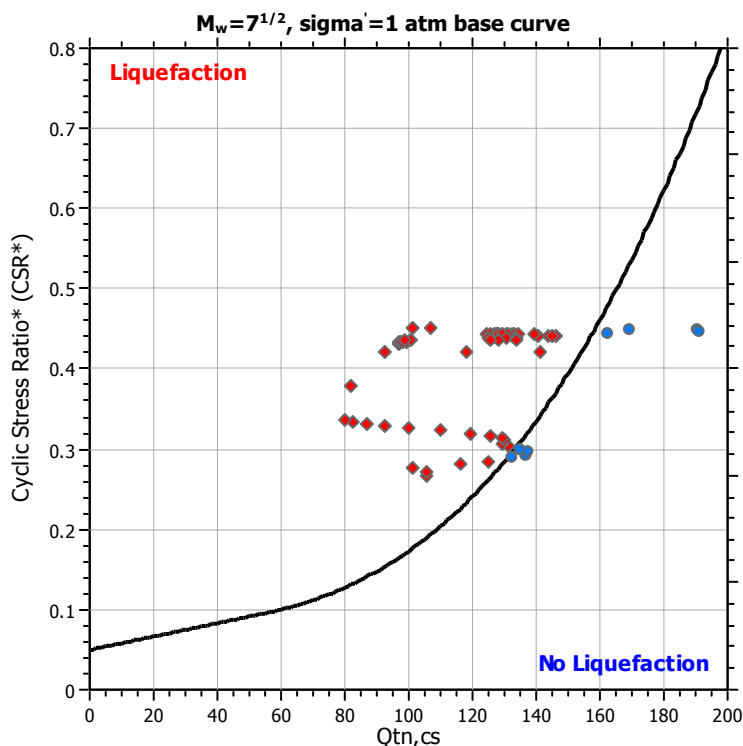
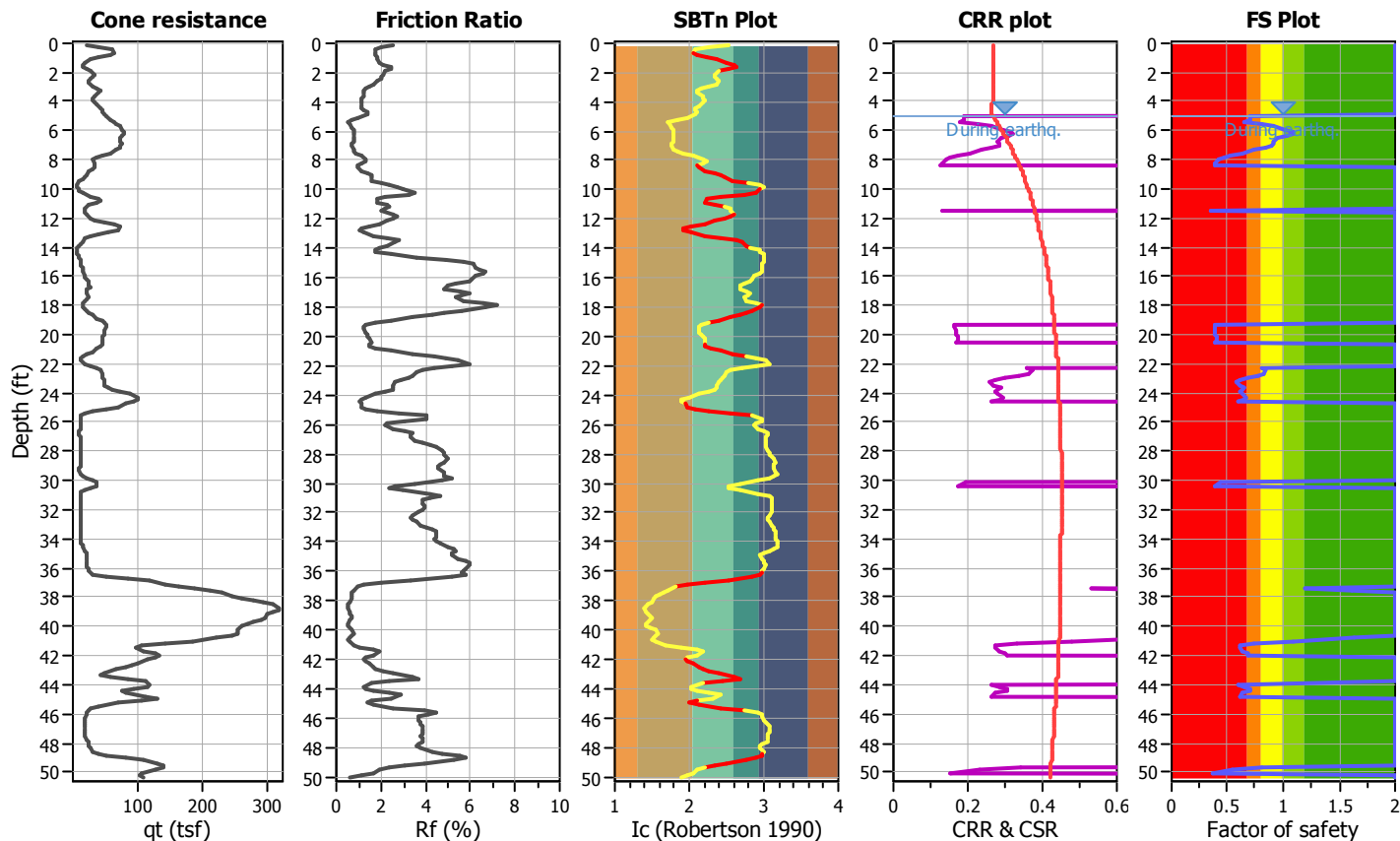
**Project title : Shea Properties/Cypress**

**Location : Cypress, California**

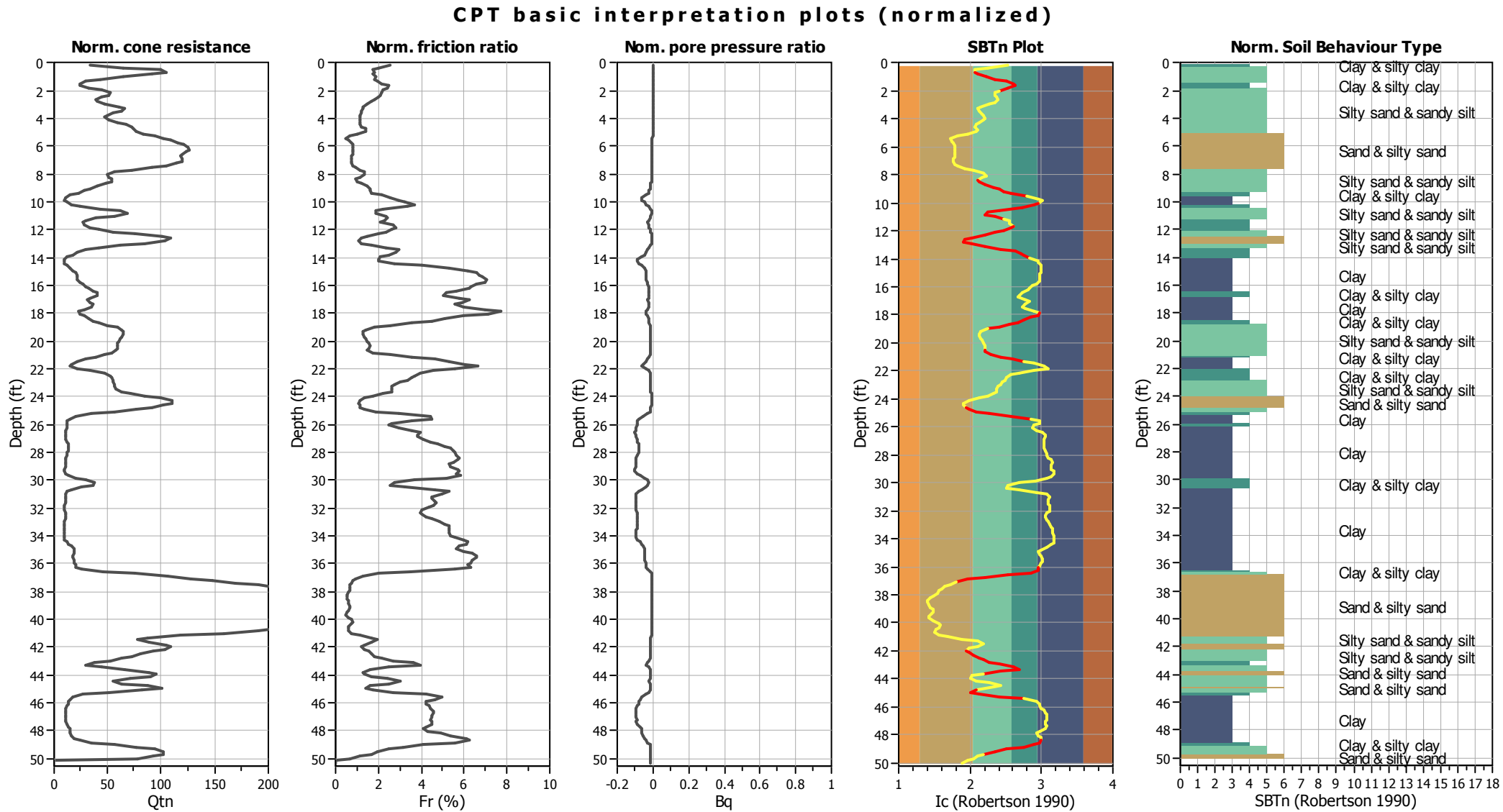
**CPT file : CPT- 2**

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
 Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
 Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
 Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

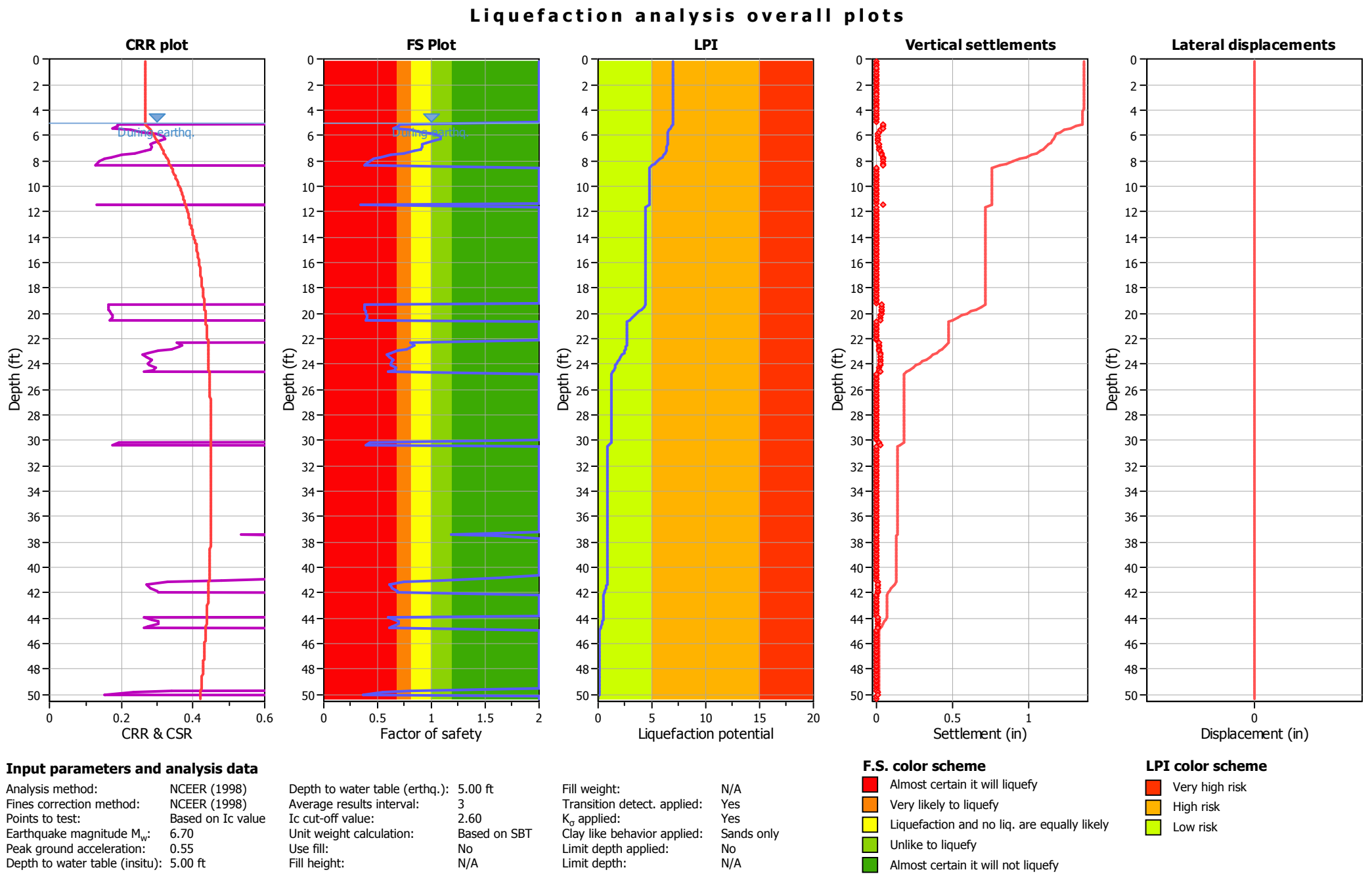
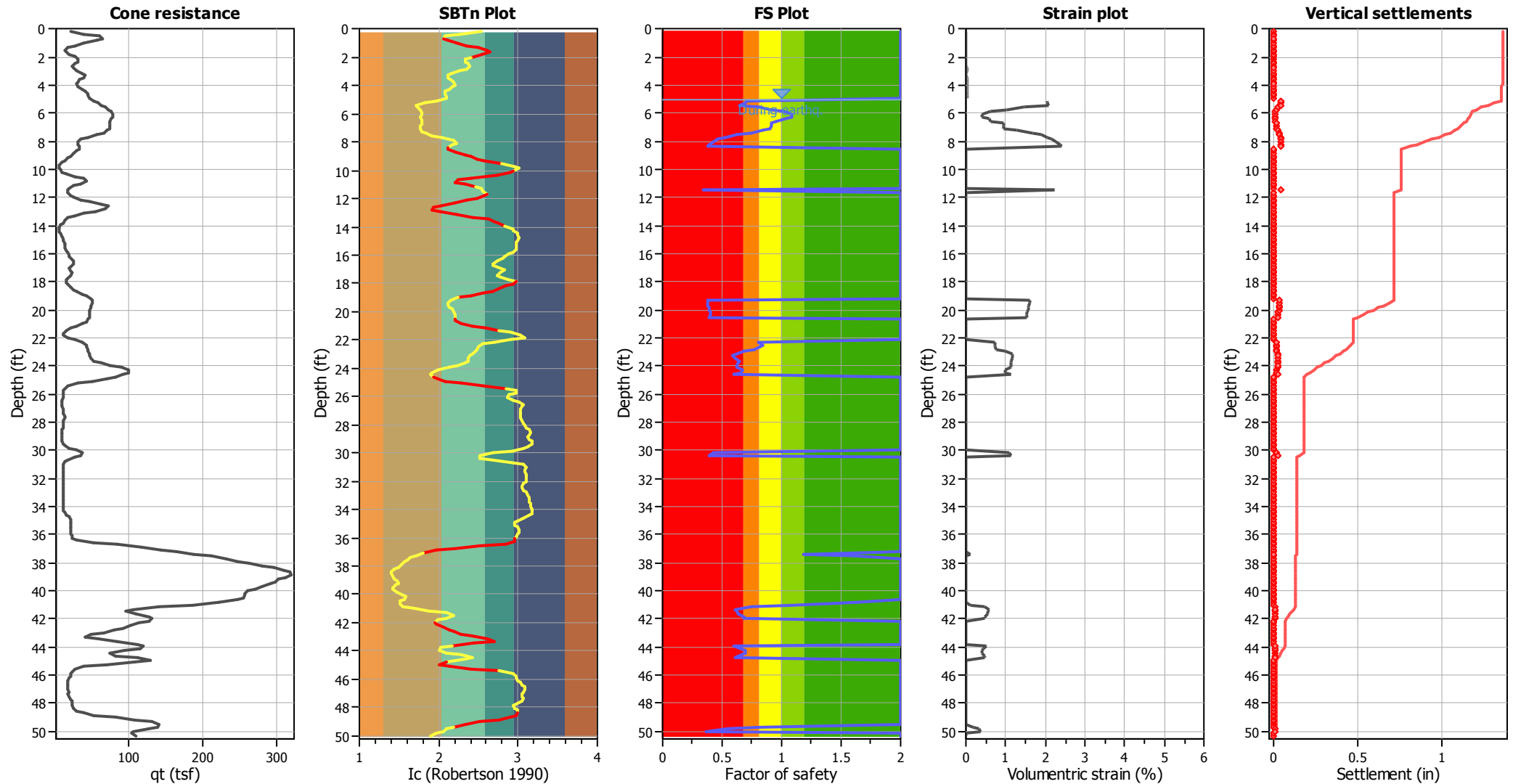


Figure 10 consists of three plots related to soil liquefaction analysis:

- Left Plot:** Normalized CPT penetration resistance (log scale, 1 to 1,000) vs. Normalized friction ratio (%) (log scale, 0.1 to 10). The plot shows various soil behavior zones (A1, A2, B, C) and data points (red diamonds, green circles, blue circles). Arrows indicate trends like "Increasing  $\phi'$ ", "Normal Consolidation", "Increasing  $I_c$ ", and "Increasing Sensitivity".
- Middle Plot:** Cyclic Stress Ratio\* (CSR\*) (log scale, 0 to 0.8) vs.  $Q_{tn,cs}$  (linear scale, 0 to 200). The plot shows the boundary between "Liquefaction" (red diamonds) and "No Liquefaction" (blue circles).
- Right Plot:** Thickness of liquefiable sand layer,  $H_2$  (m) (linear scale, 0.0 to 12.0) vs. Thickness of surface layer,  $H_1$  (m) (linear scale, 0 to 10). The plot shows the boundary for "Liquefaction-induced ground damage" and "Max. acc. 200gal", "Max. acc. 400gal", and "Max. acc. 400-500gal". A specific point is labeled "CPT-2 (6.99)".

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain





NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

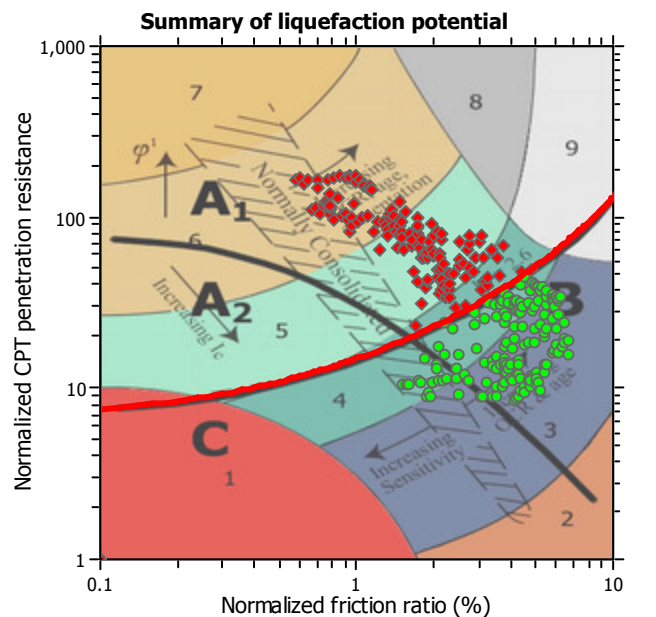
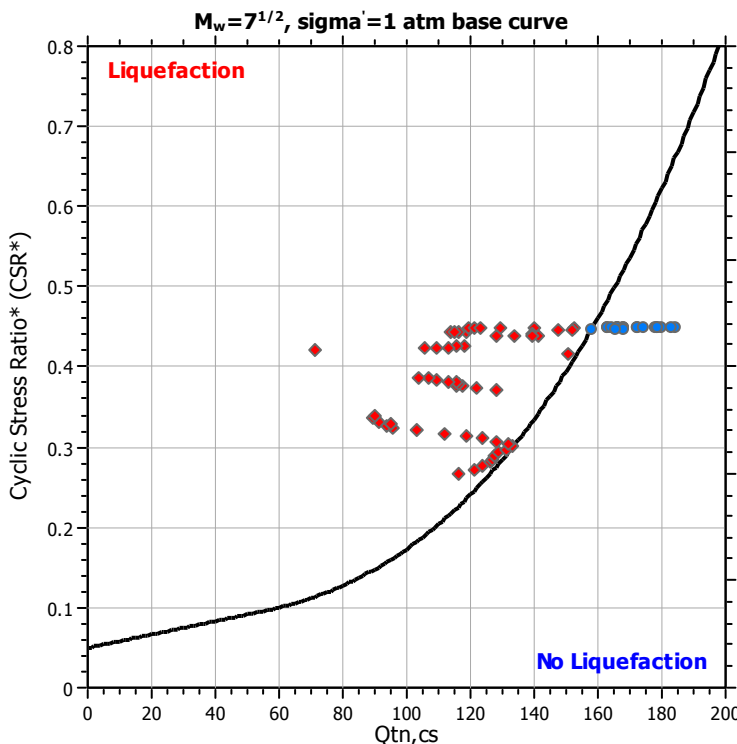
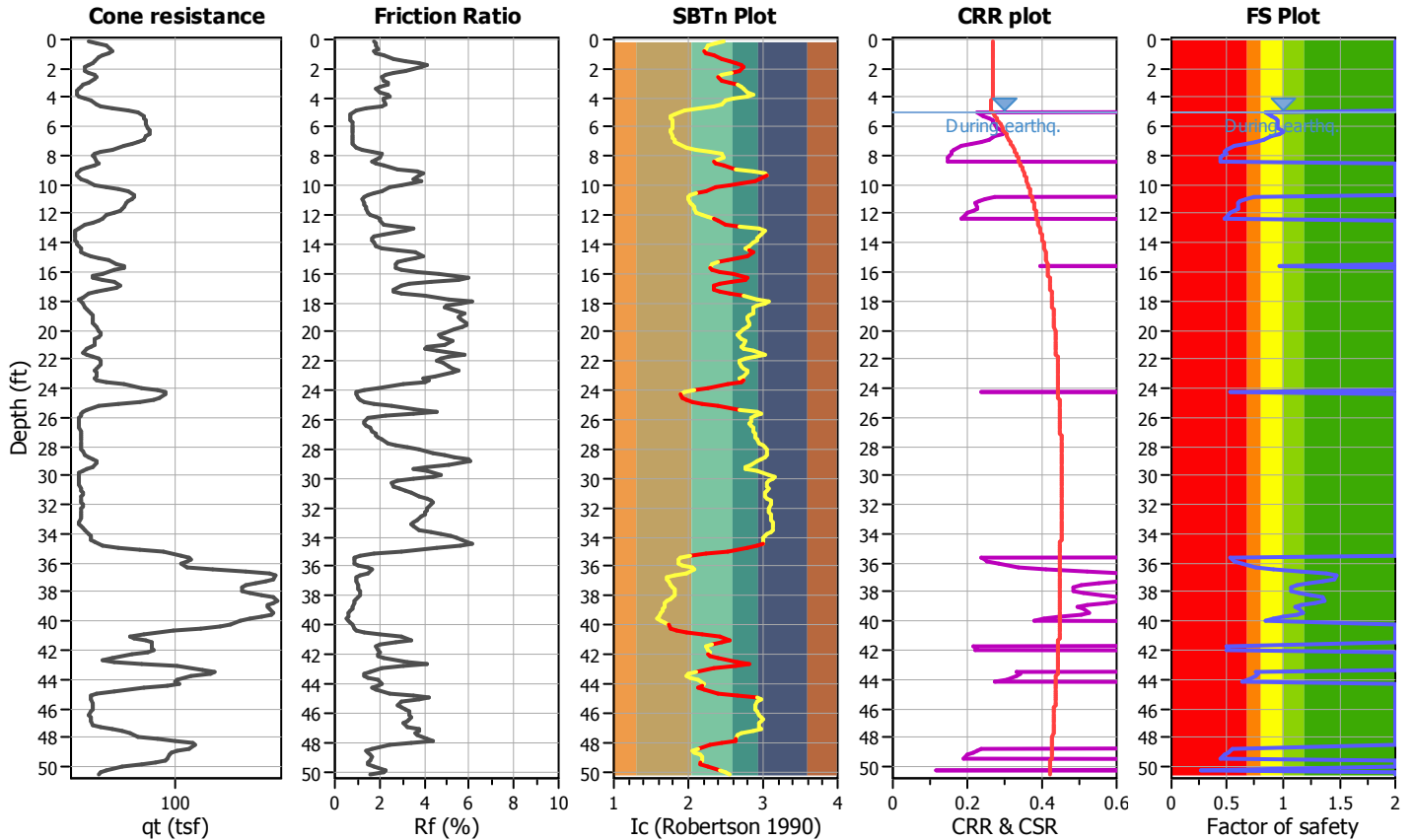
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 3

### Input parameters and analysis data

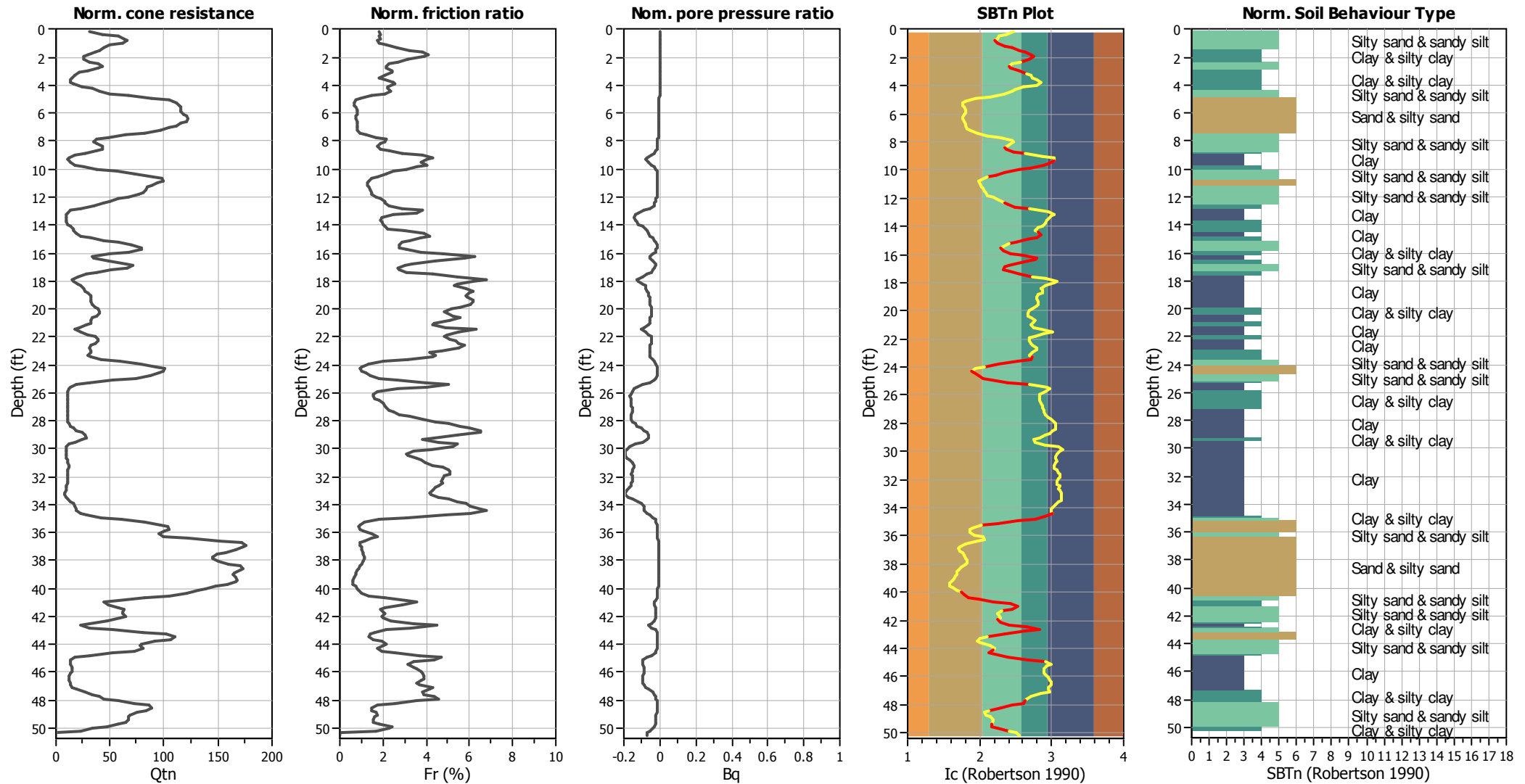
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

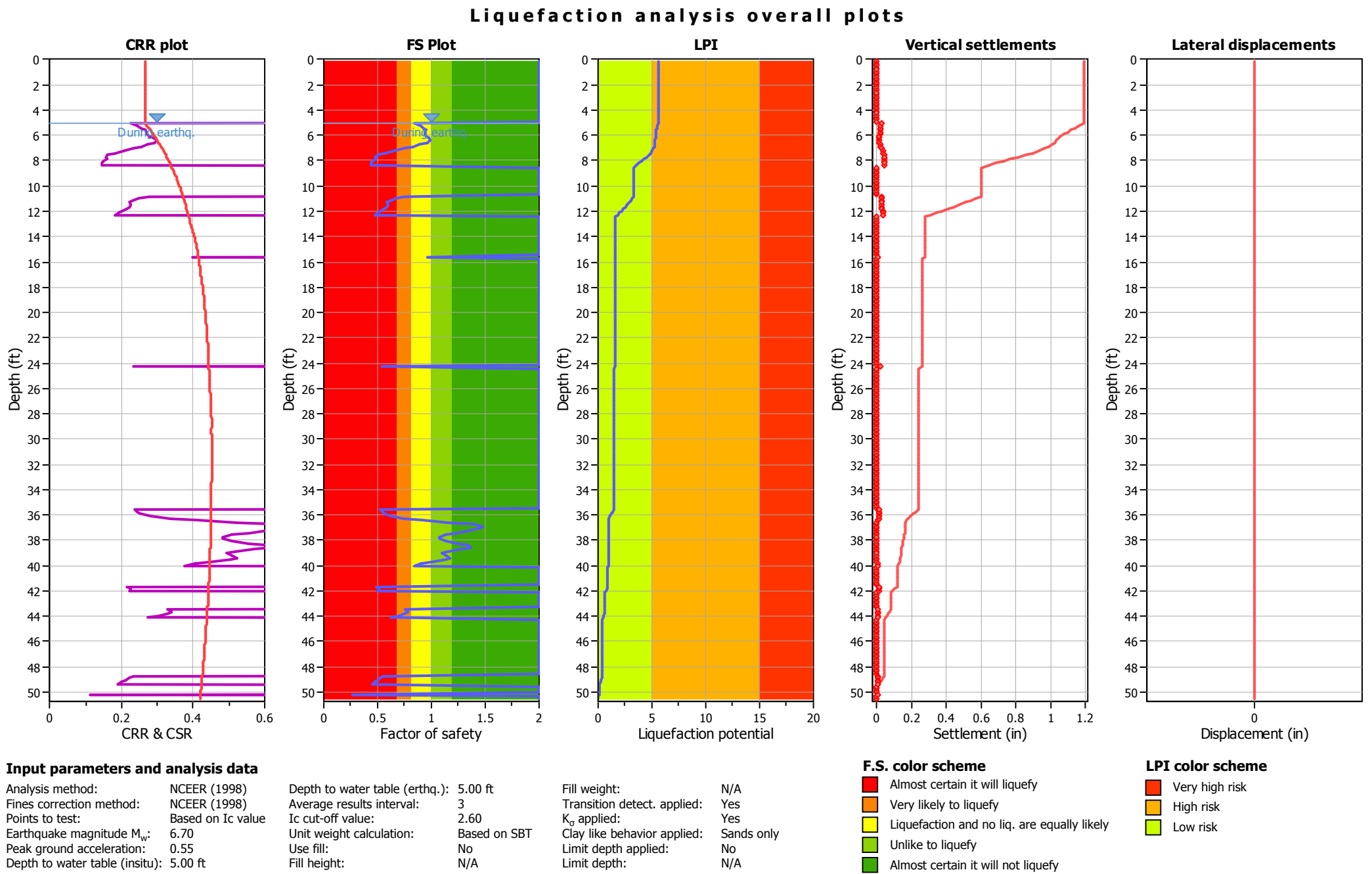


## CPT basic interpretation plots (normalized)

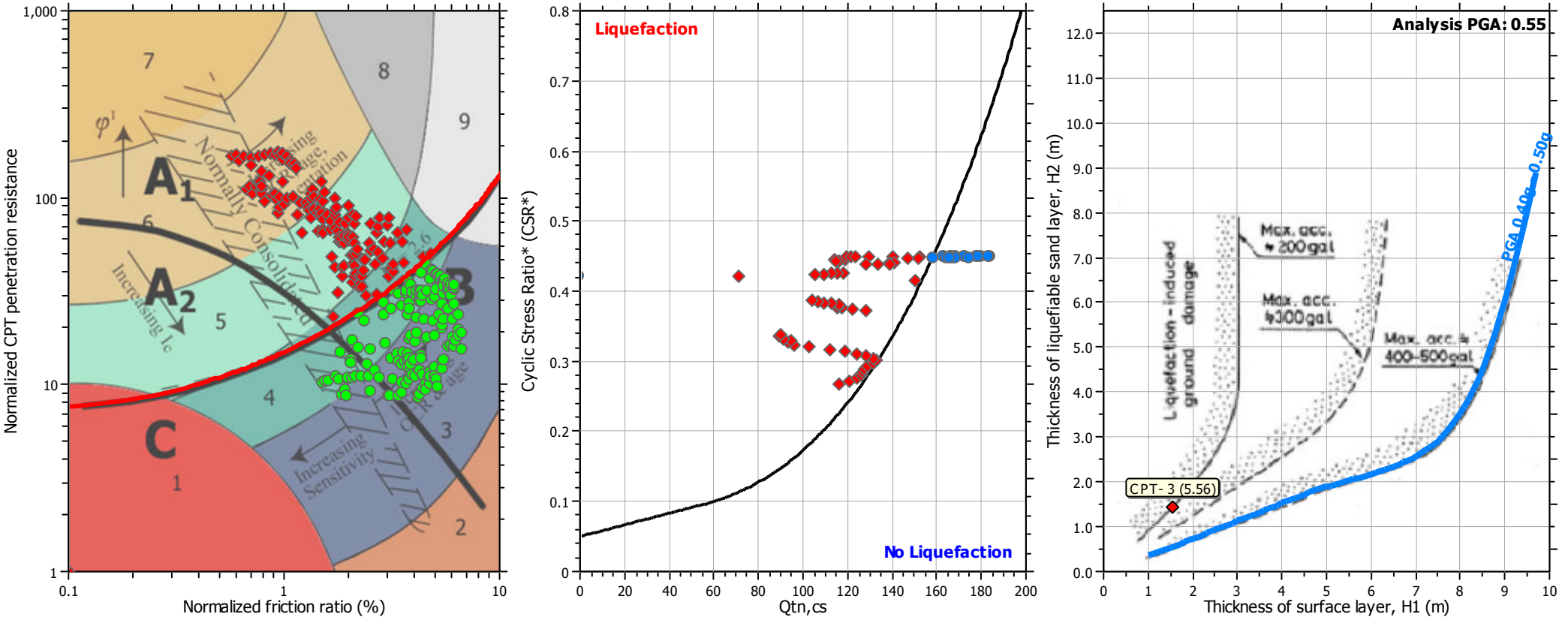


## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



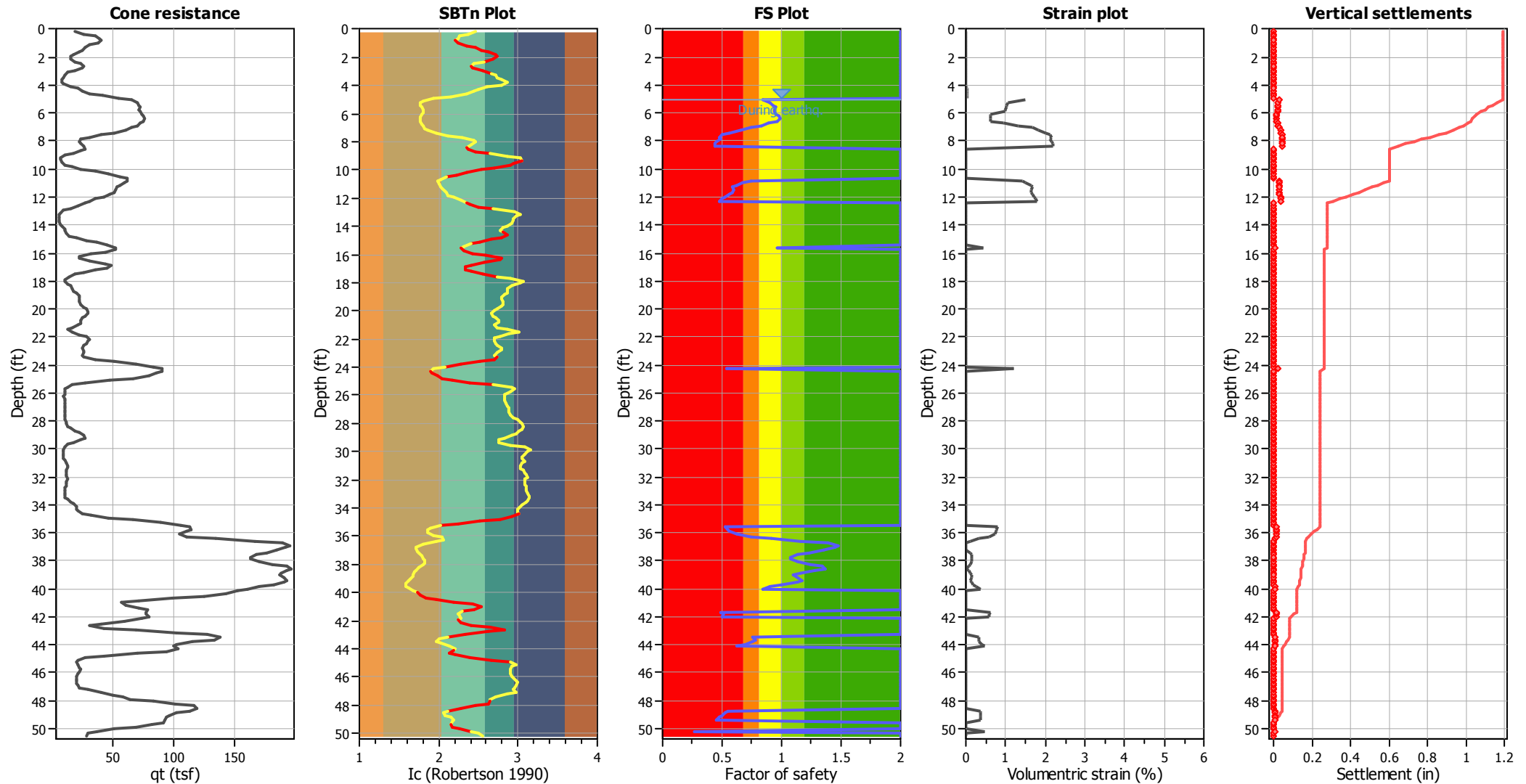
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_0$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

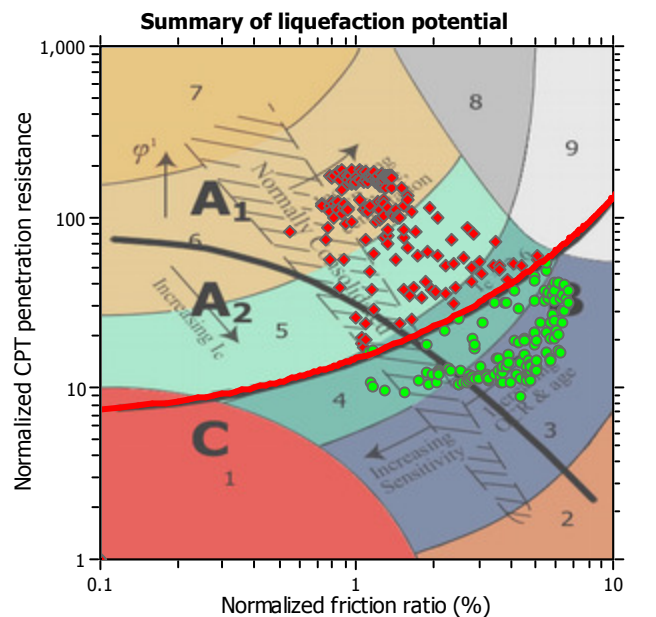
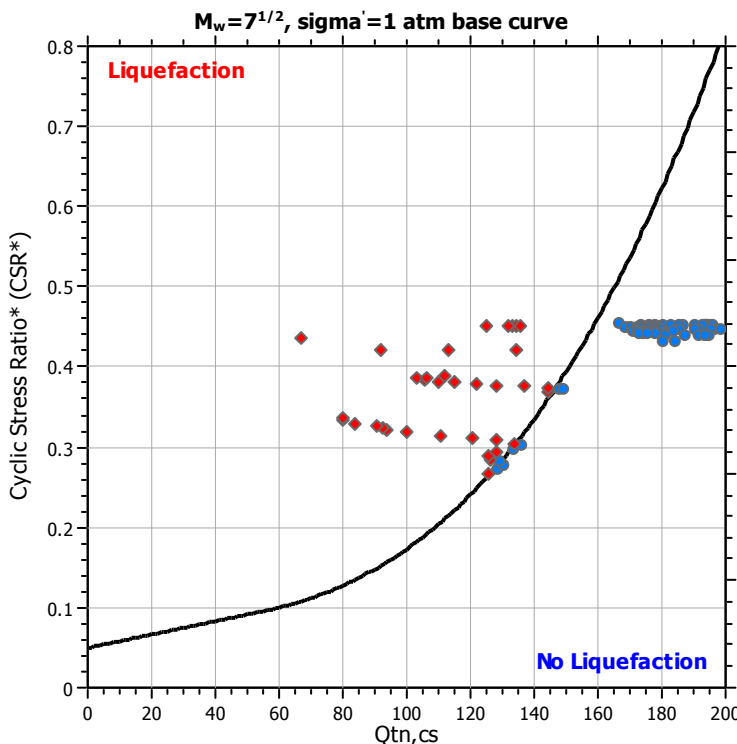
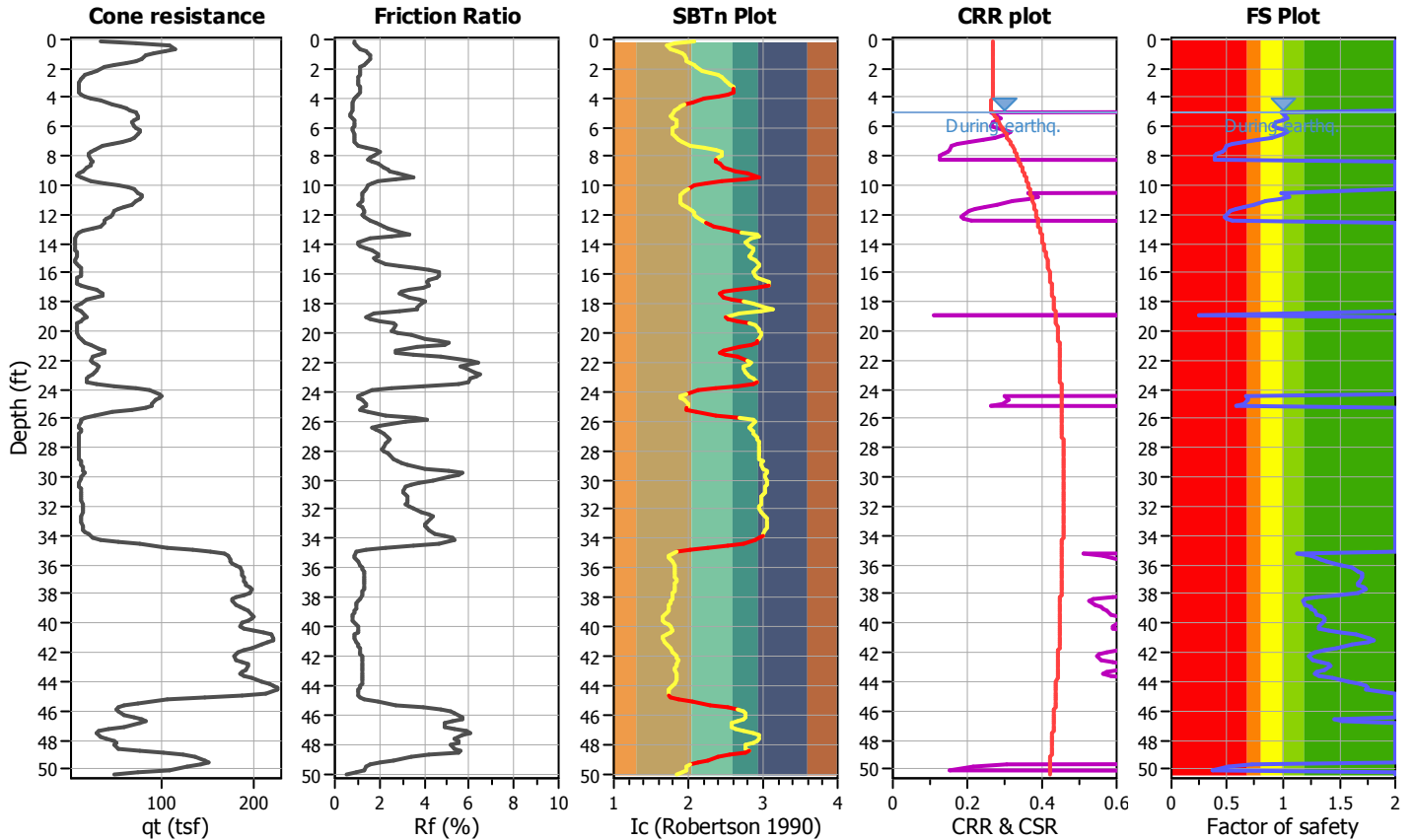
Project title : Shea Properties/Cypress

Location : Cypress, California

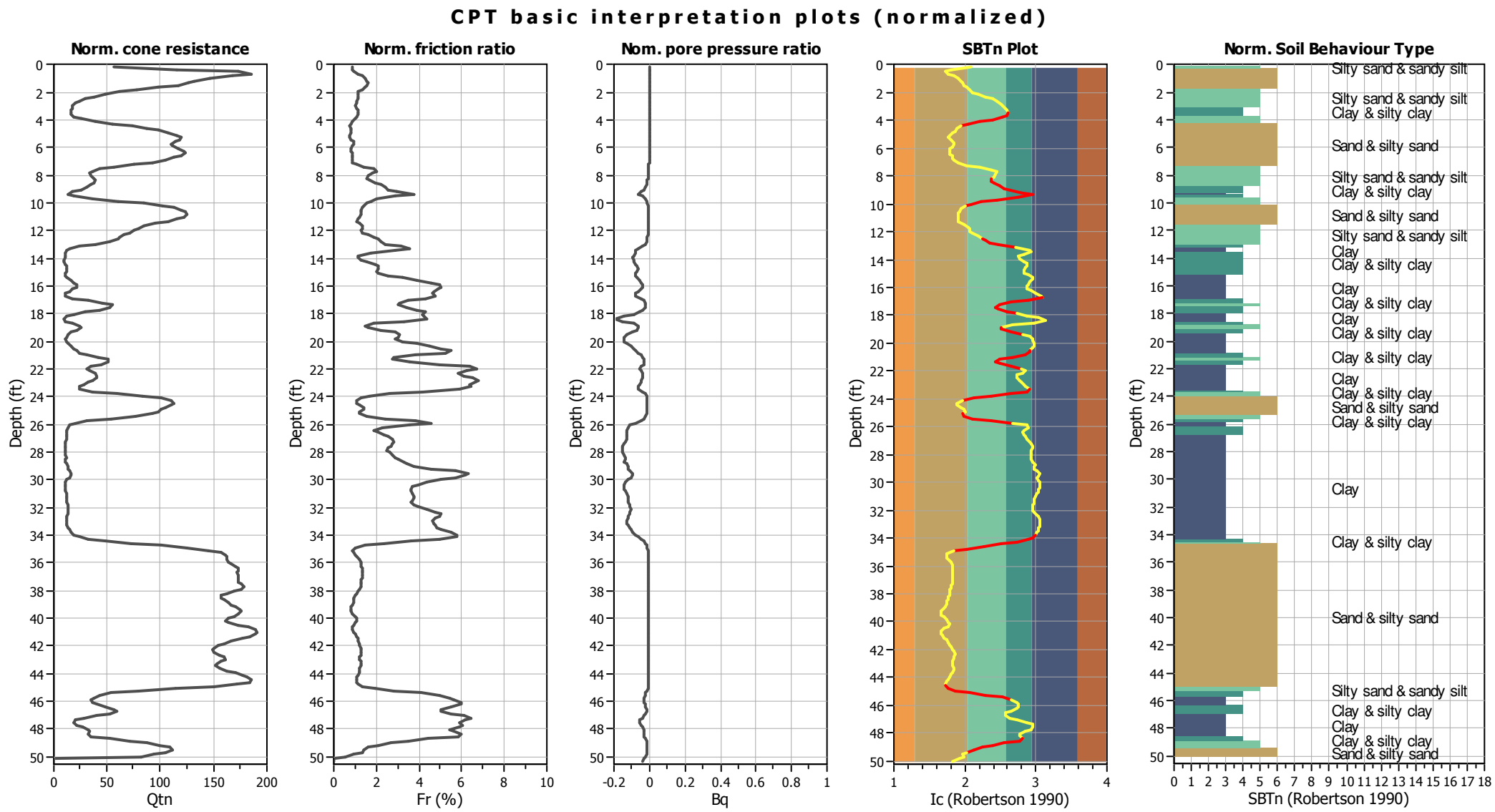
CPT file : CPT- 4

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



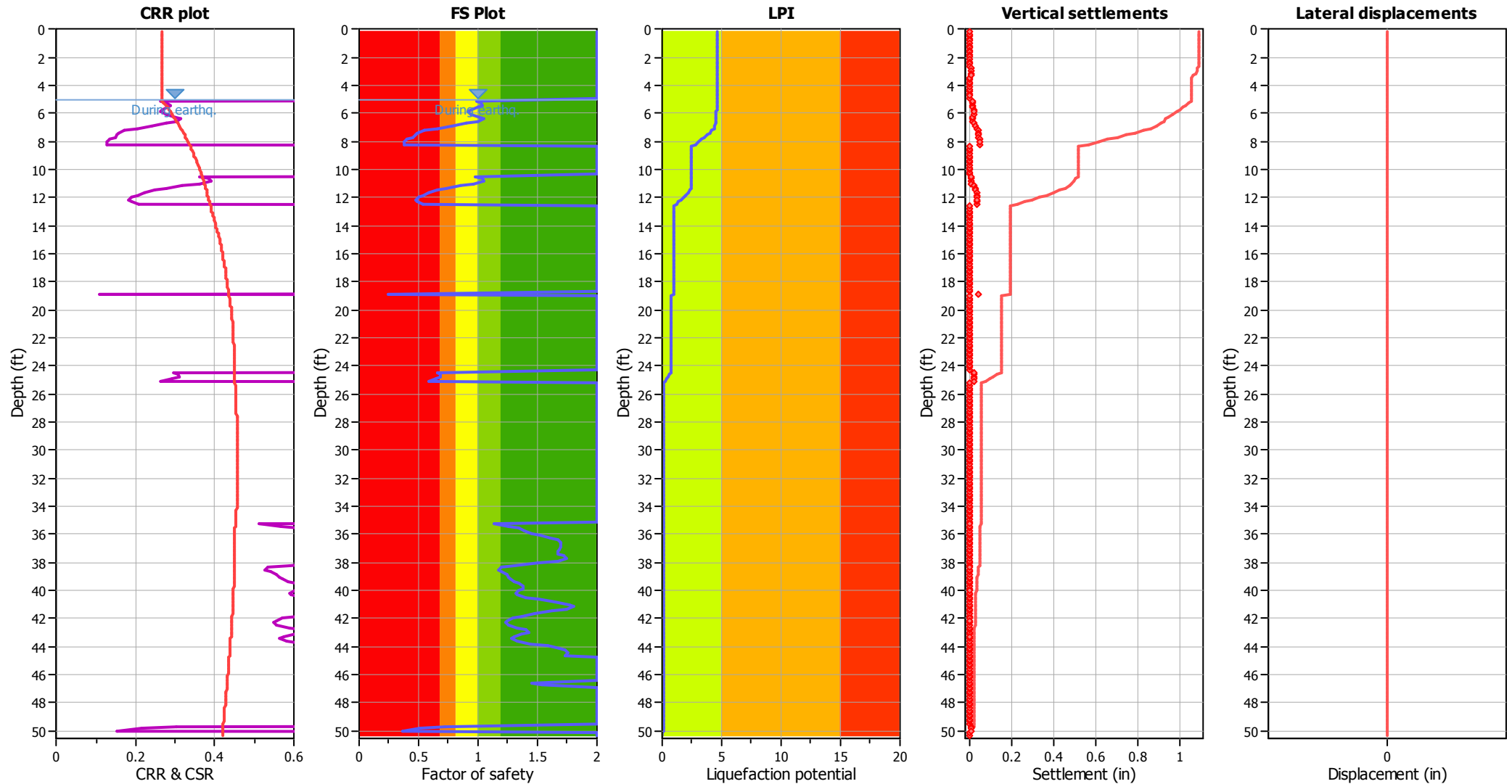
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>0</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

### F.S. color scheme

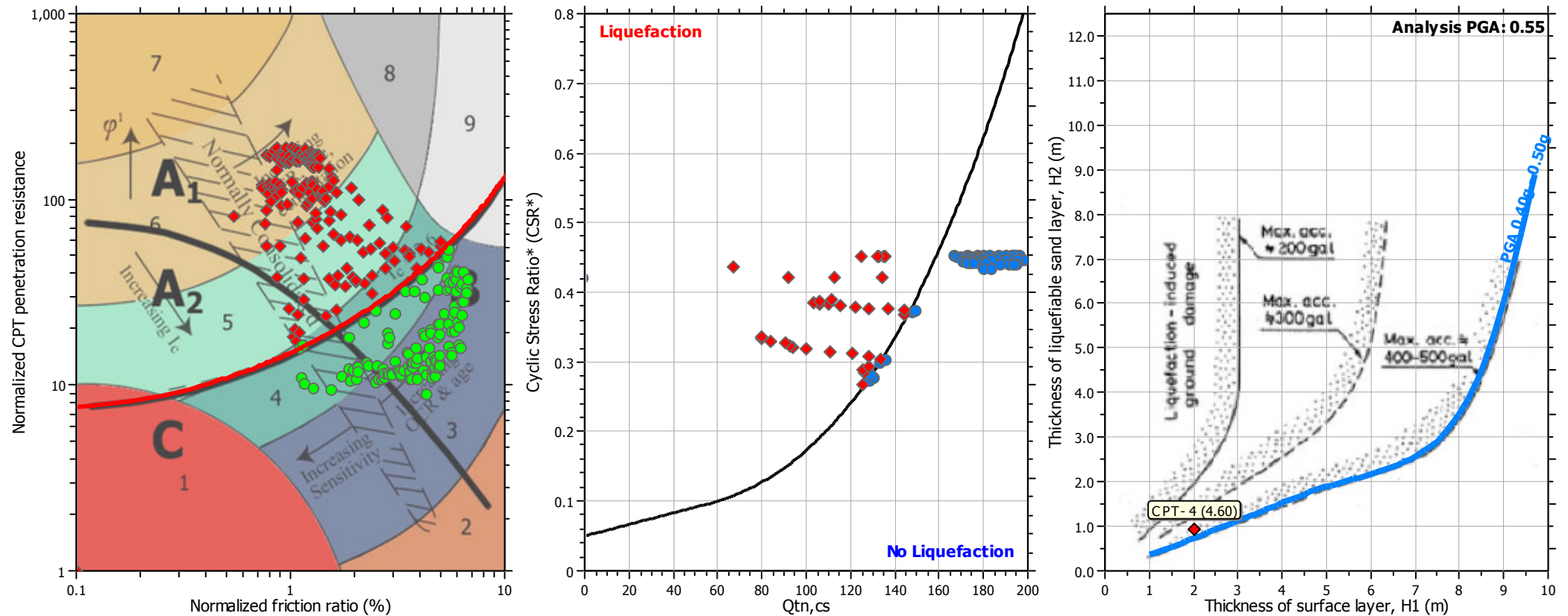
<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk



## Liquefaction analysis summary plots

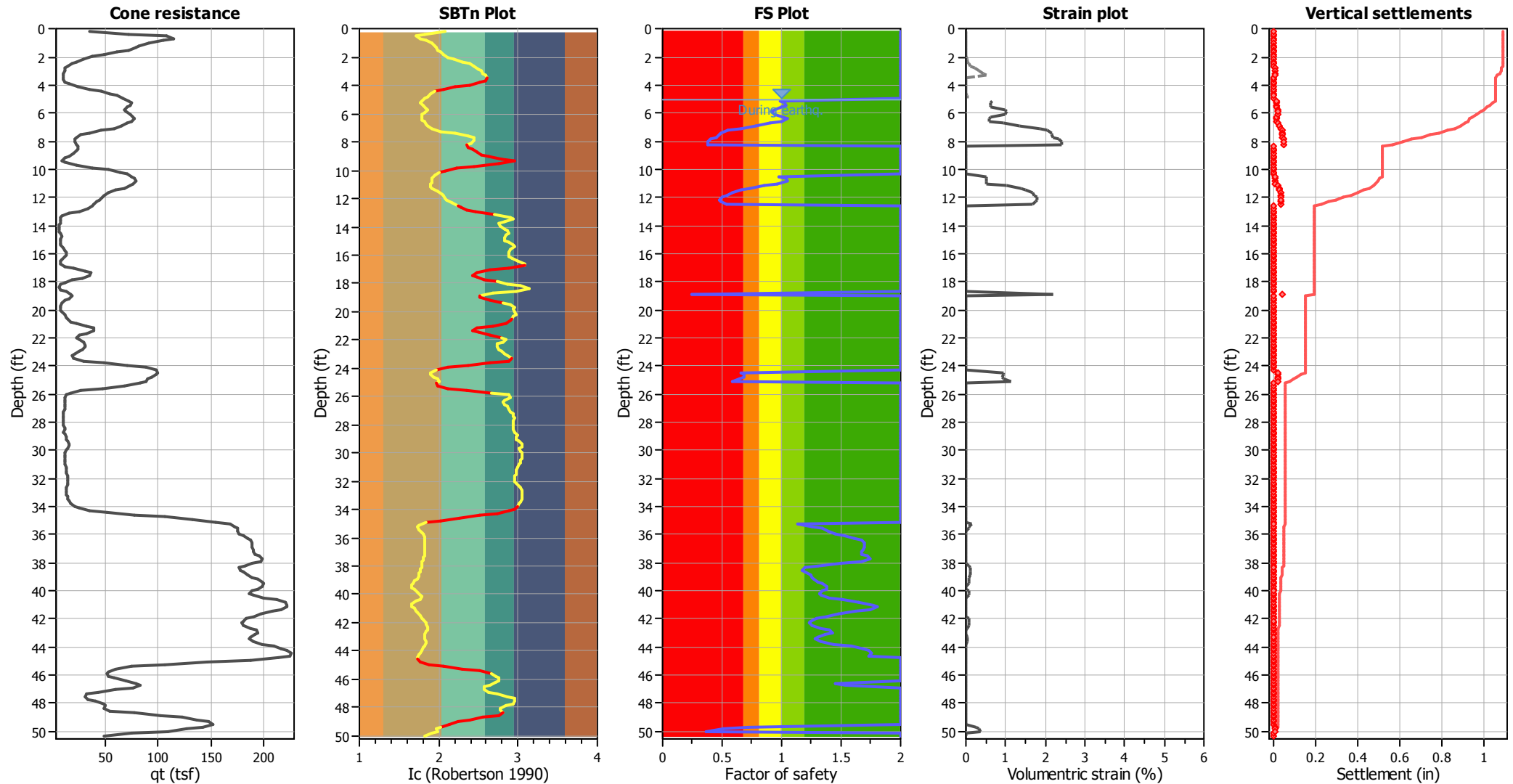


### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

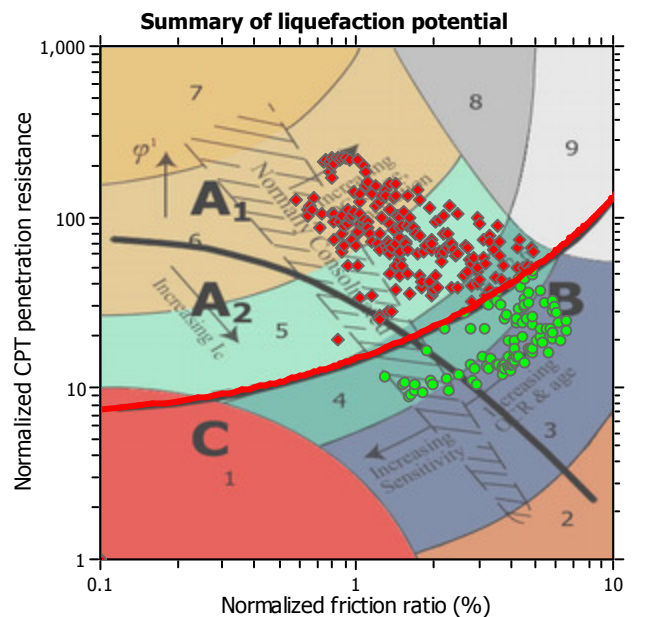
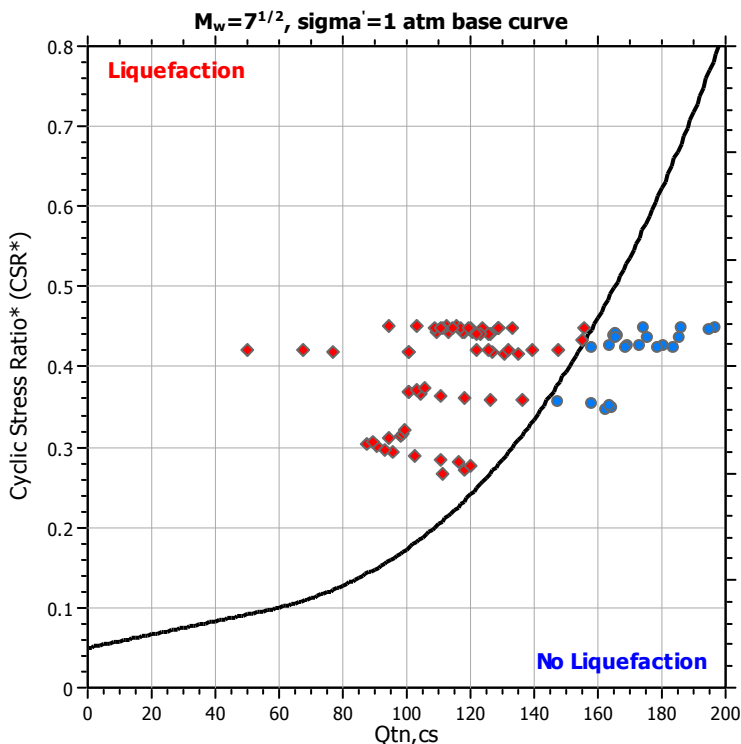
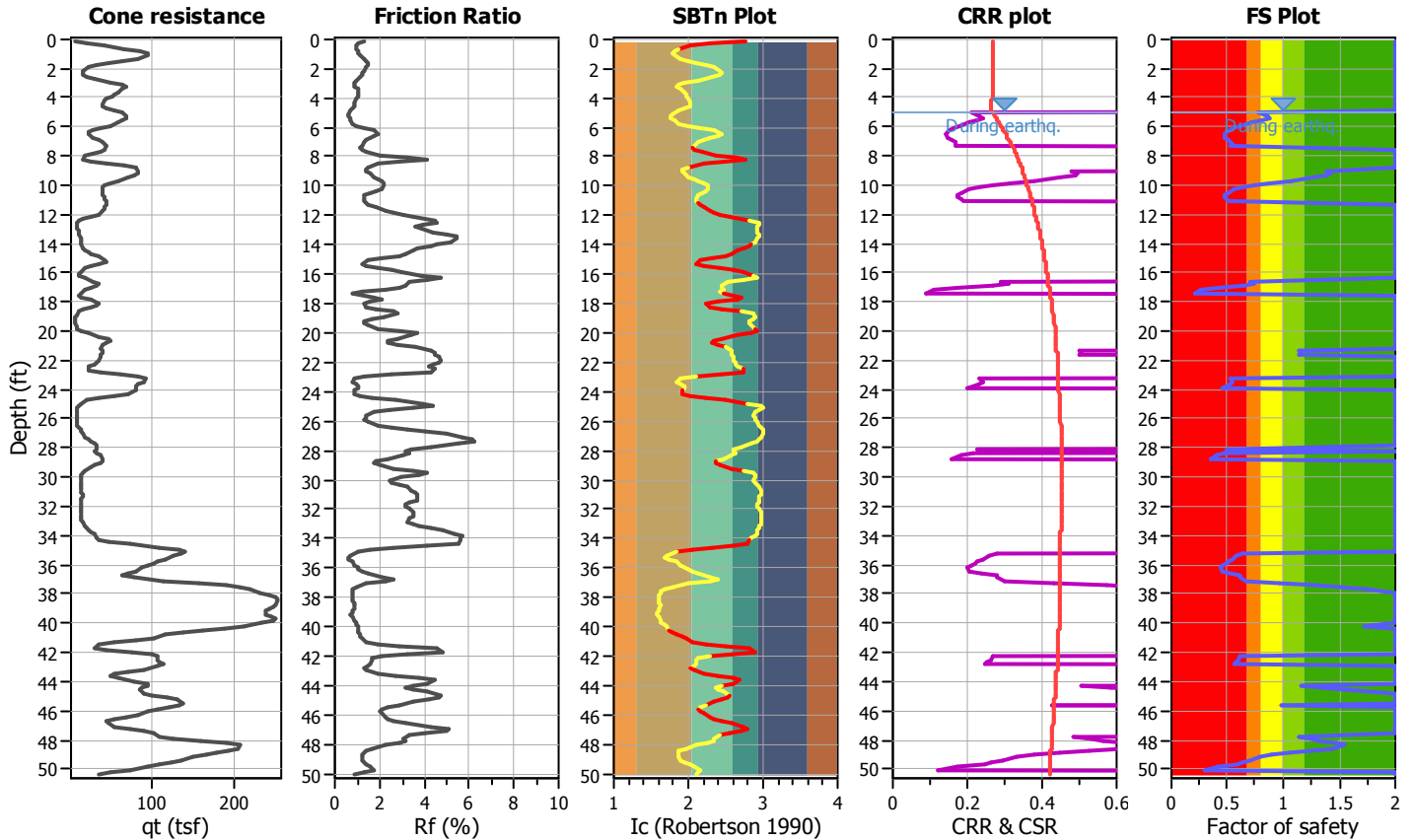
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 5

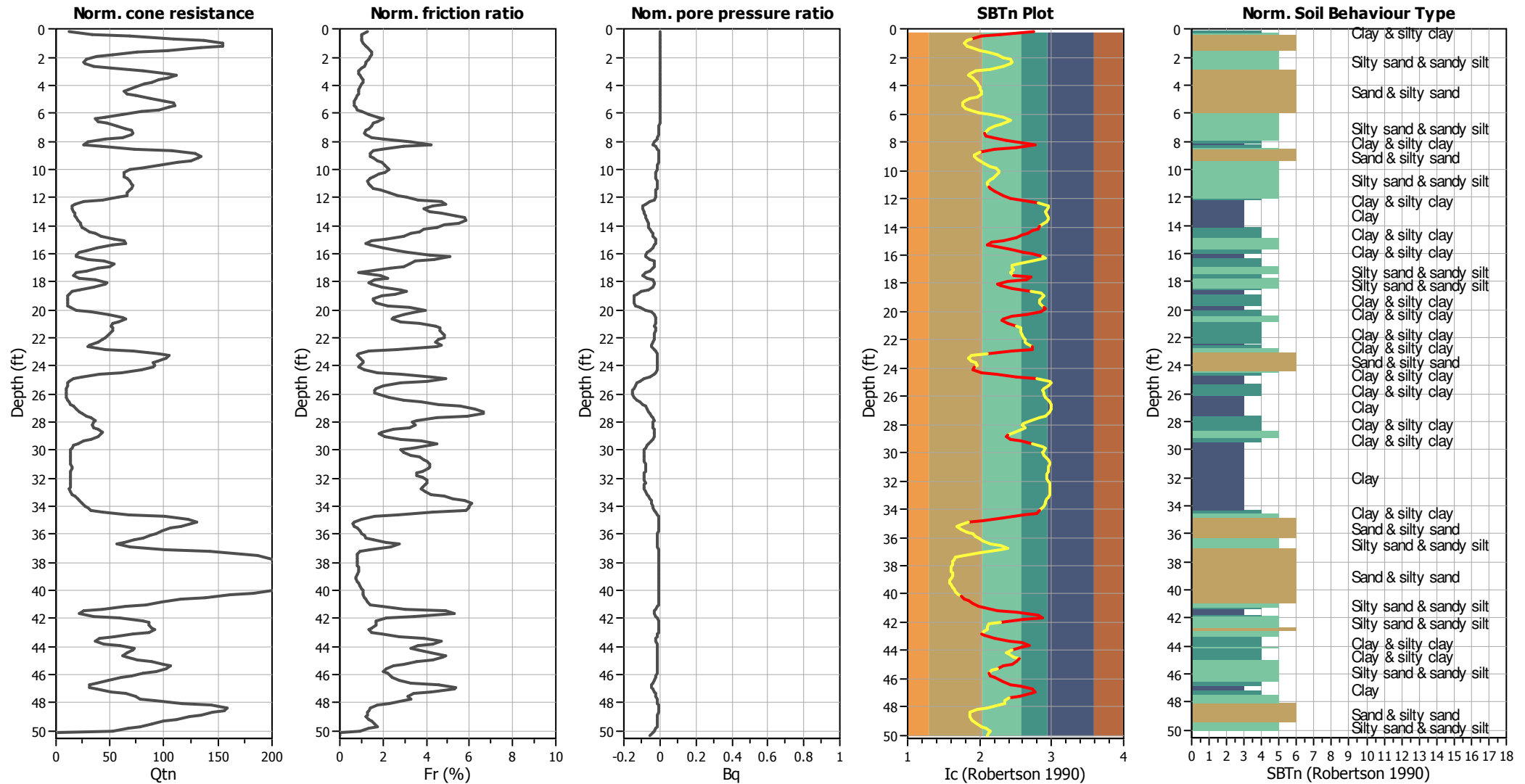
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

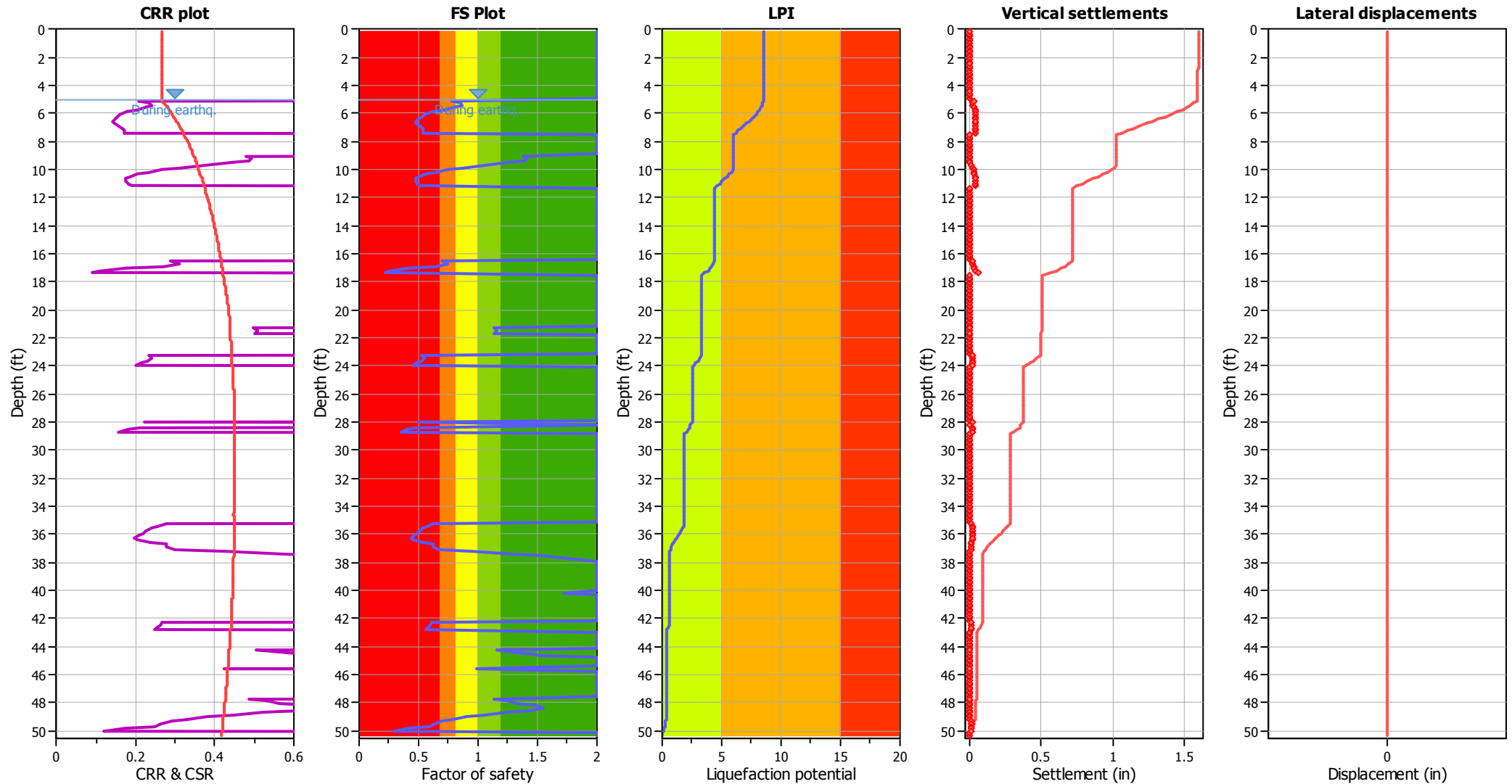
## CPT basic interpretation plots (normalized)



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

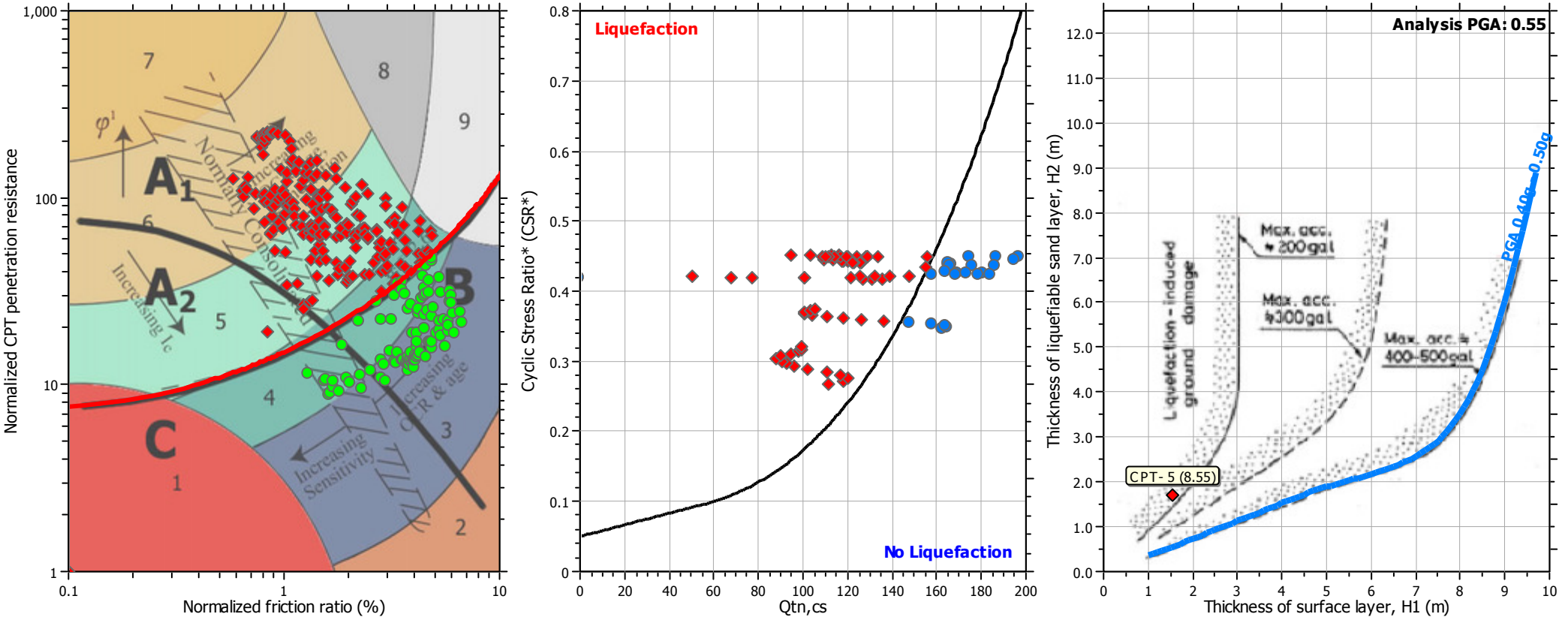
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

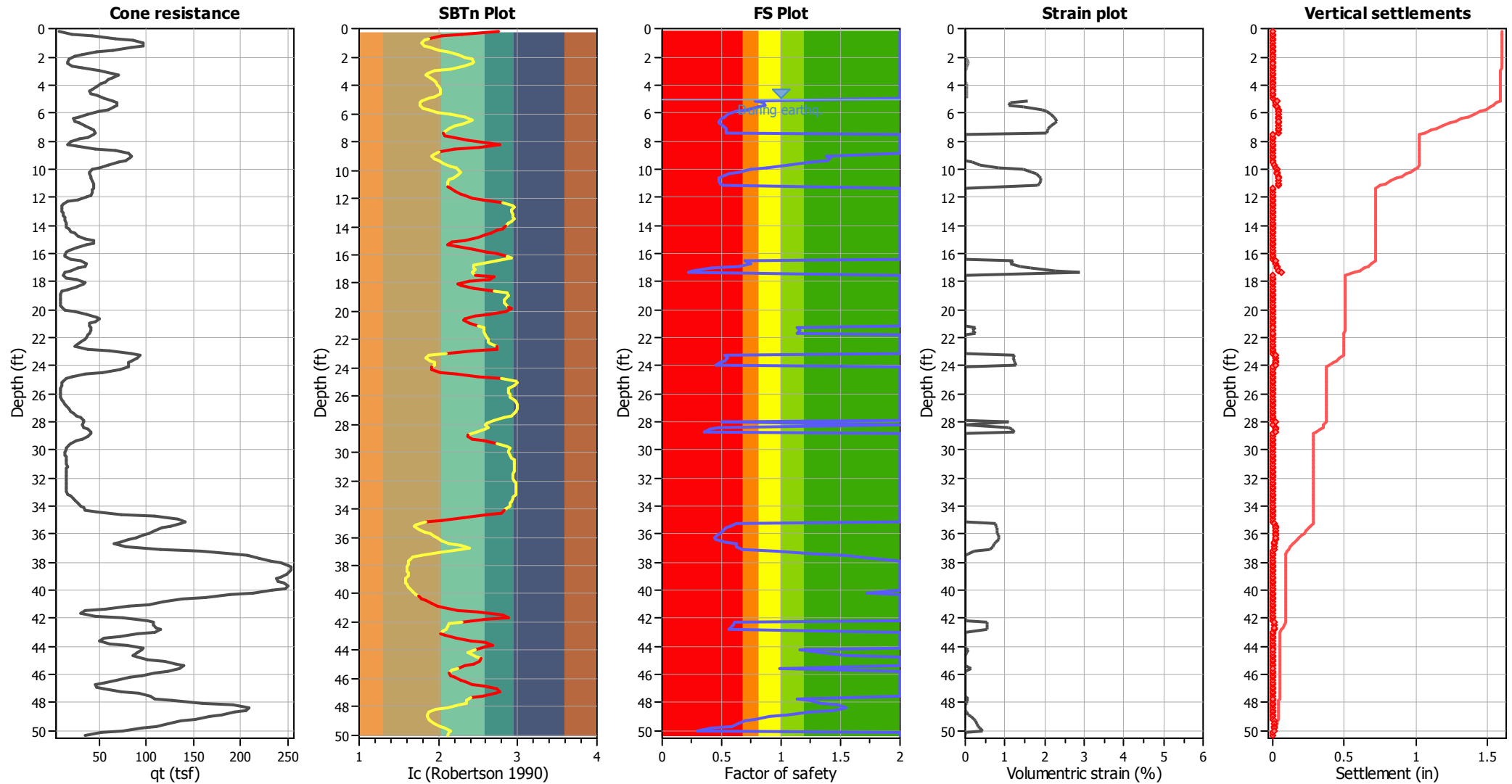
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

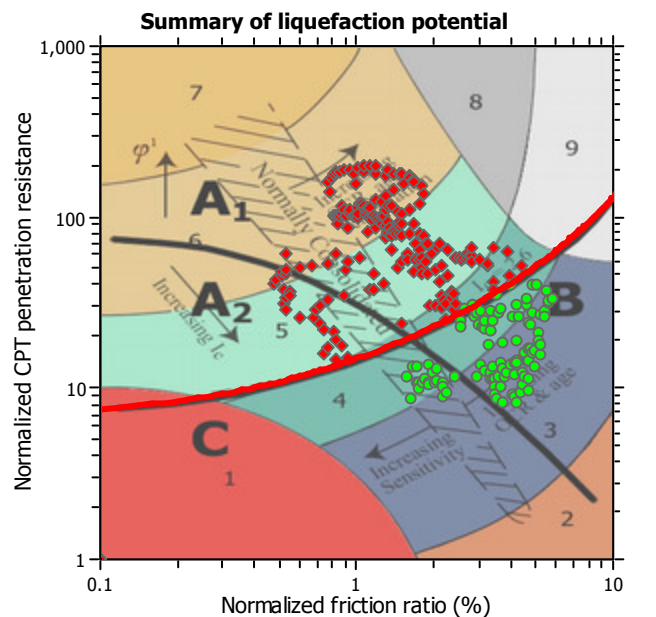
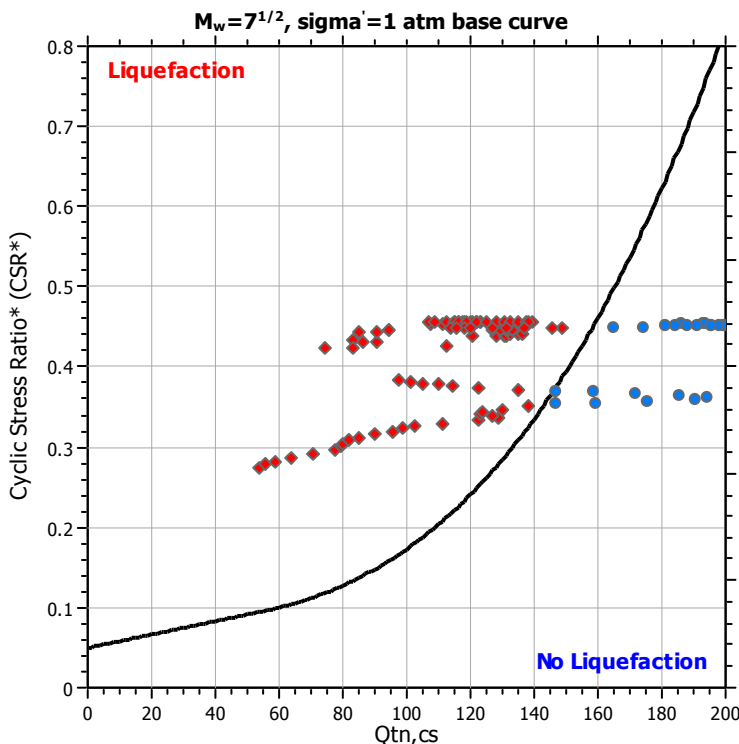
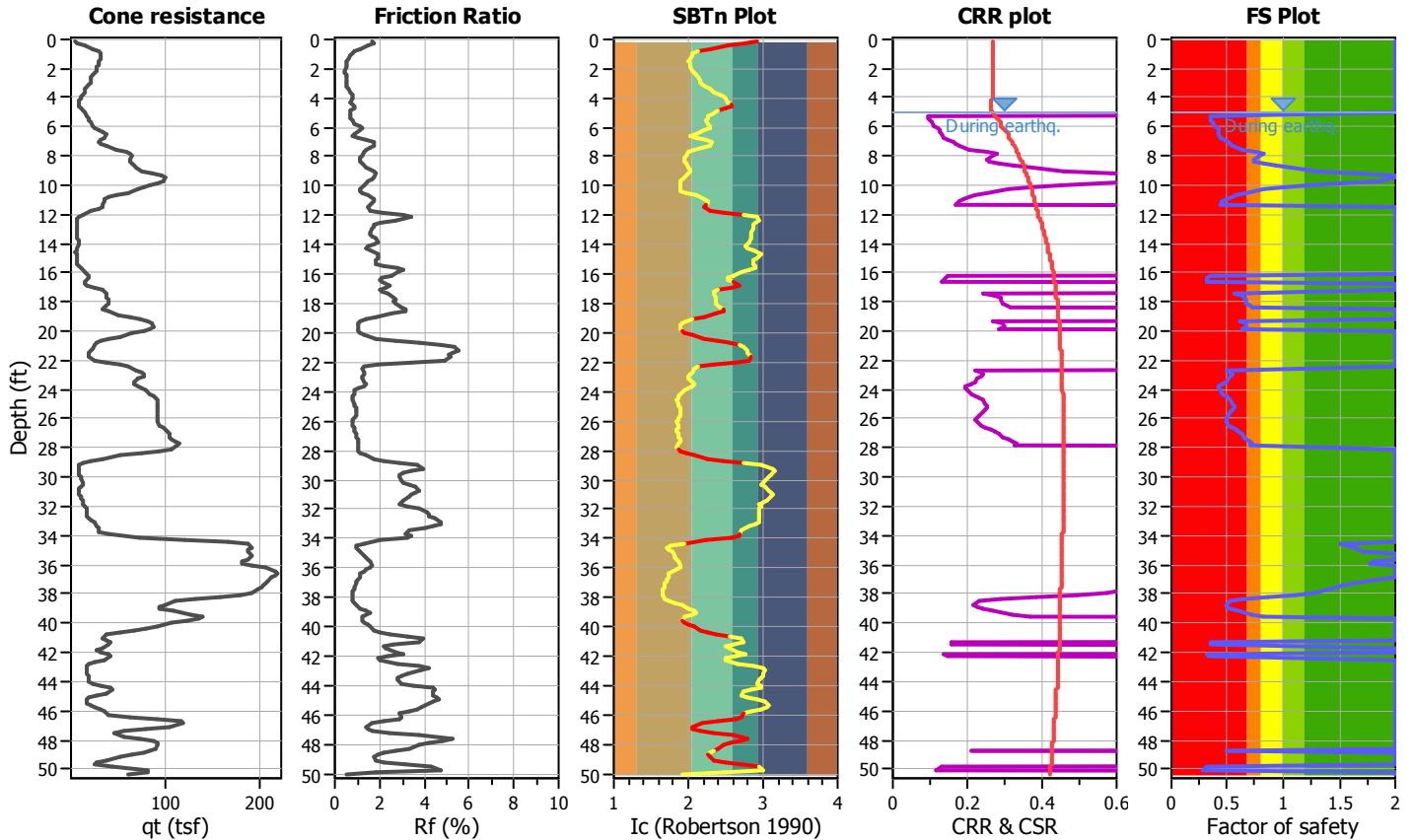
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT- 6

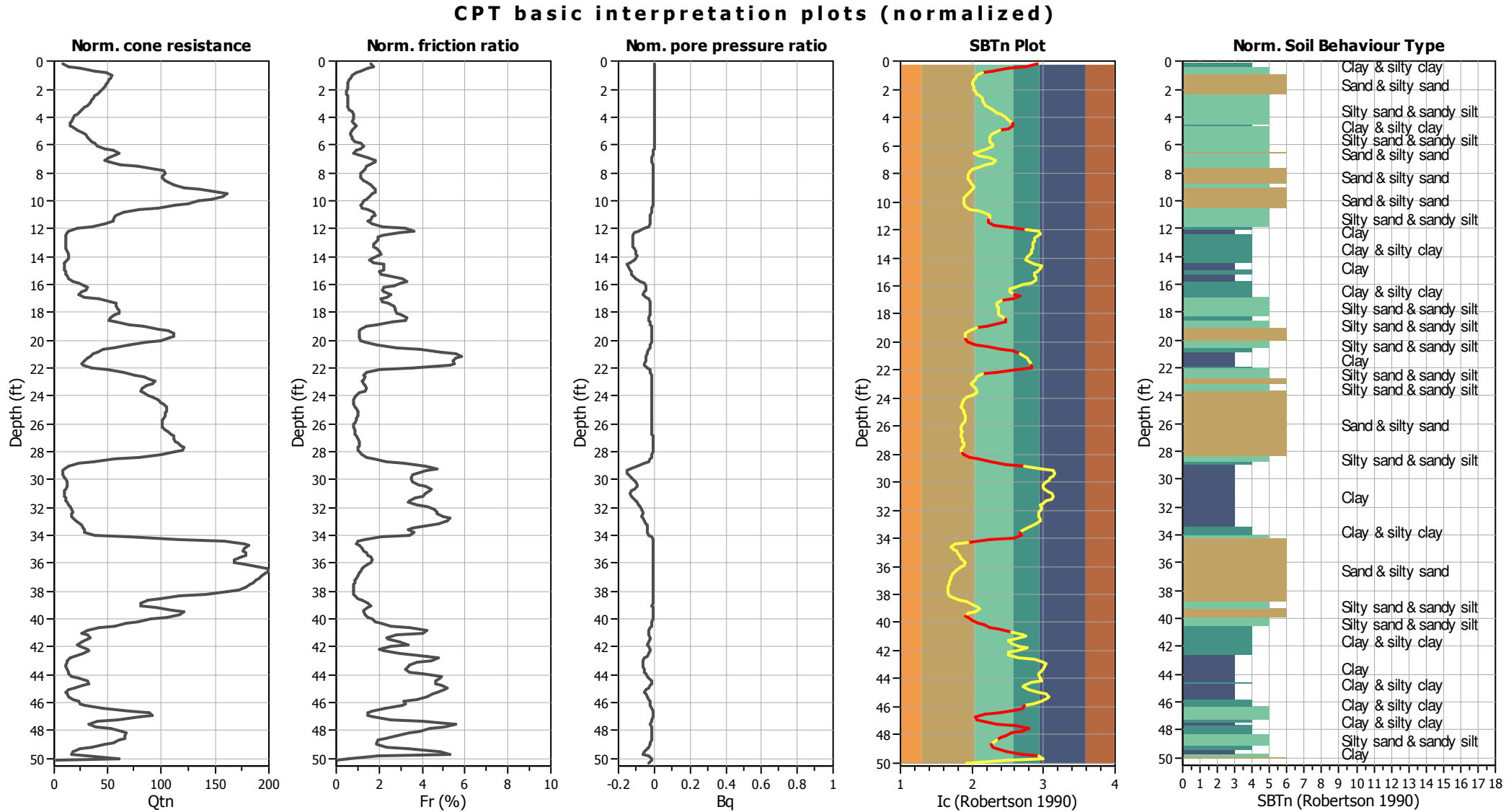
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry





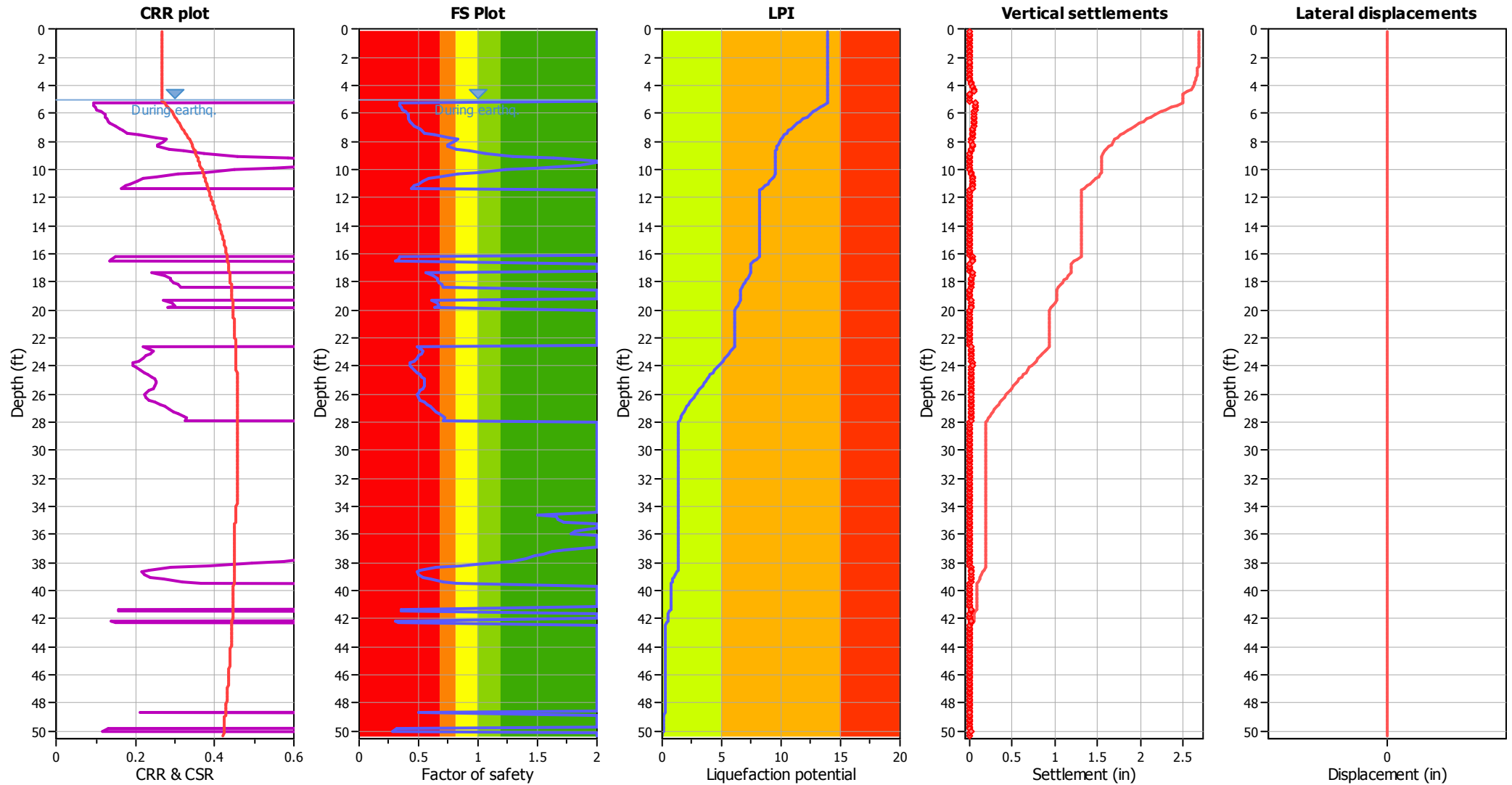
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend		
1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

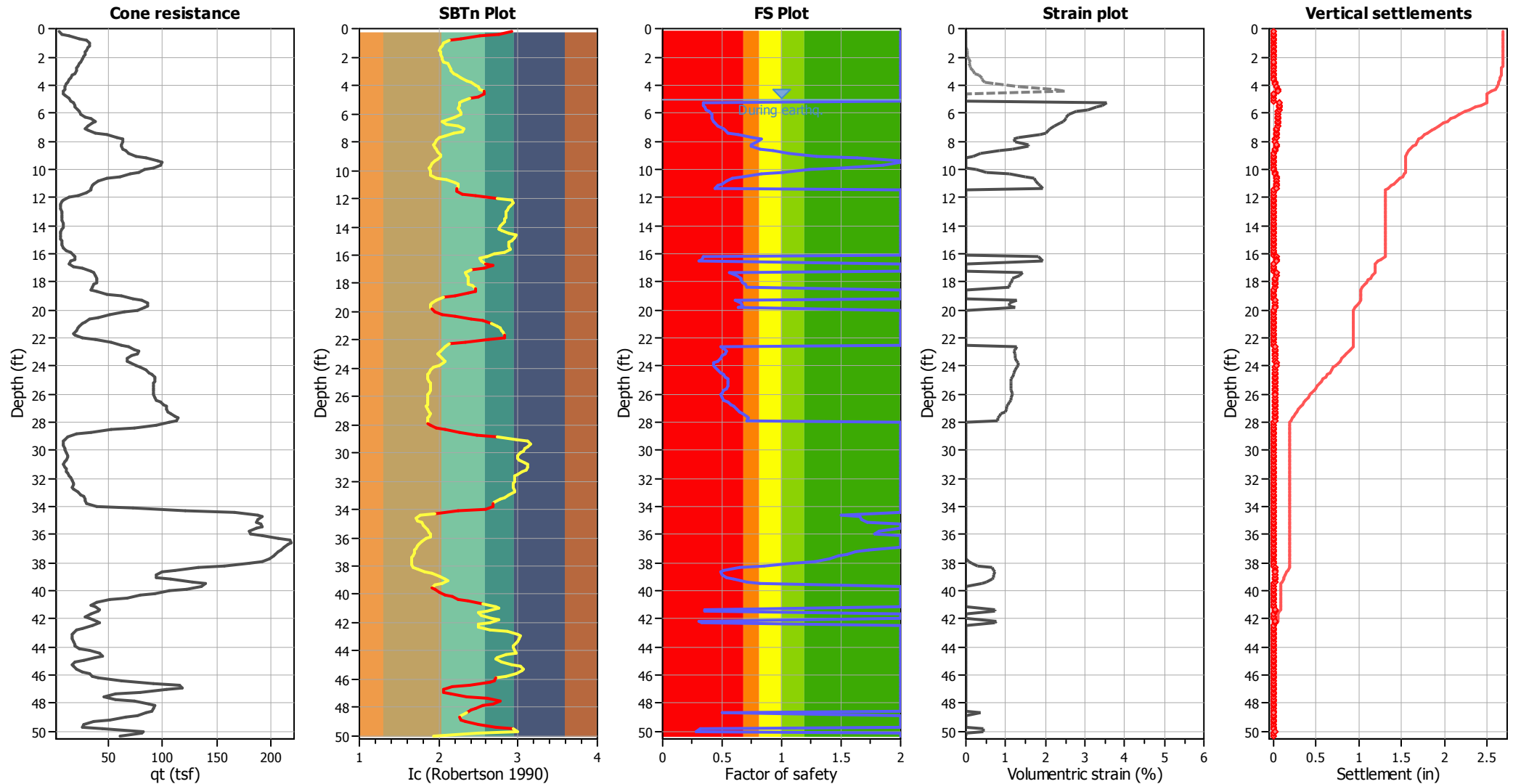
<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

Figure 10 consists of three plots related to soil liquefaction analysis:

- Left Plot:** A log-log plot of Normalized CPT penetration resistance (y-axis, 1 to 1,000) versus Normalized friction ratio (%) (x-axis, 0.1 to 10). The plot is divided into regions A1, A2, B, and C, with various soil behavior zones (1-9) and arrows indicating trends like  $\phi'$ ,  $\phi$ , and increasing  $I_c$ .
- Middle Plot:** A log-log plot of Cyclic Stress Ratio\* (CSR\*) (y-axis, 0 to 0.8) versus  $Q_{tn,cs}$  (x-axis, 0 to 200). It shows a boundary between "Liquefaction" (above) and "No Liquefaction" (below) regions, with data points in red and blue.
- Right Plot:** A plot of Thickness of liquefiable sand layer,  $H_2$  (m) (y-axis, 0.0 to 12.0) versus Thickness of surface layer,  $H_1$  (m) (x-axis, 0 to 10). It shows contours for maximum acceleration (Max. acc.) and a blue curve for  $PGA \approx 0.40 - 0.50g$ . A specific point is labeled "CPT-6 (13.88)".

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

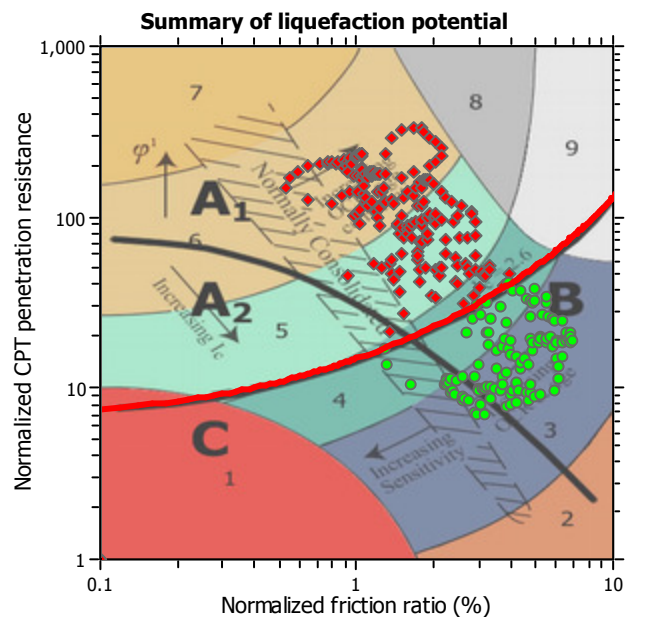
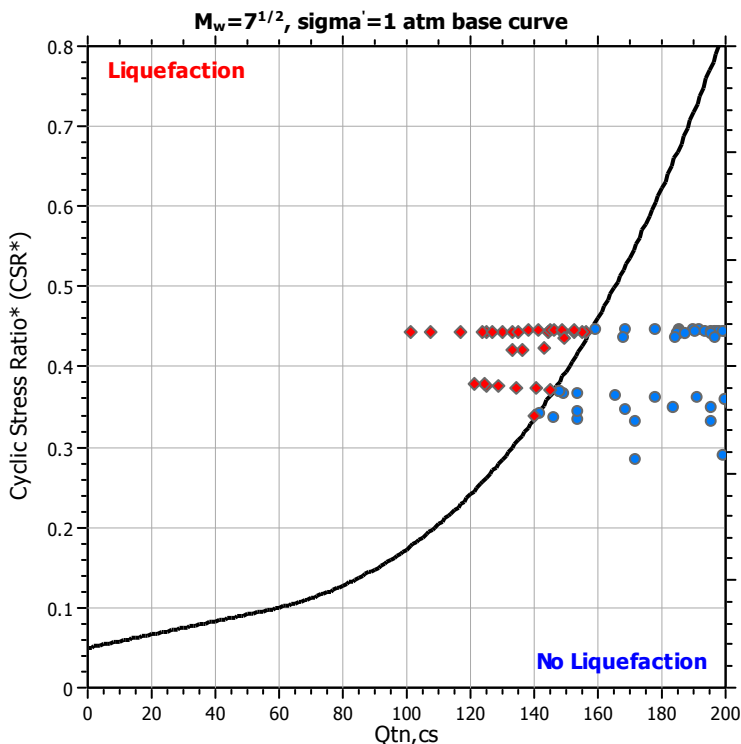
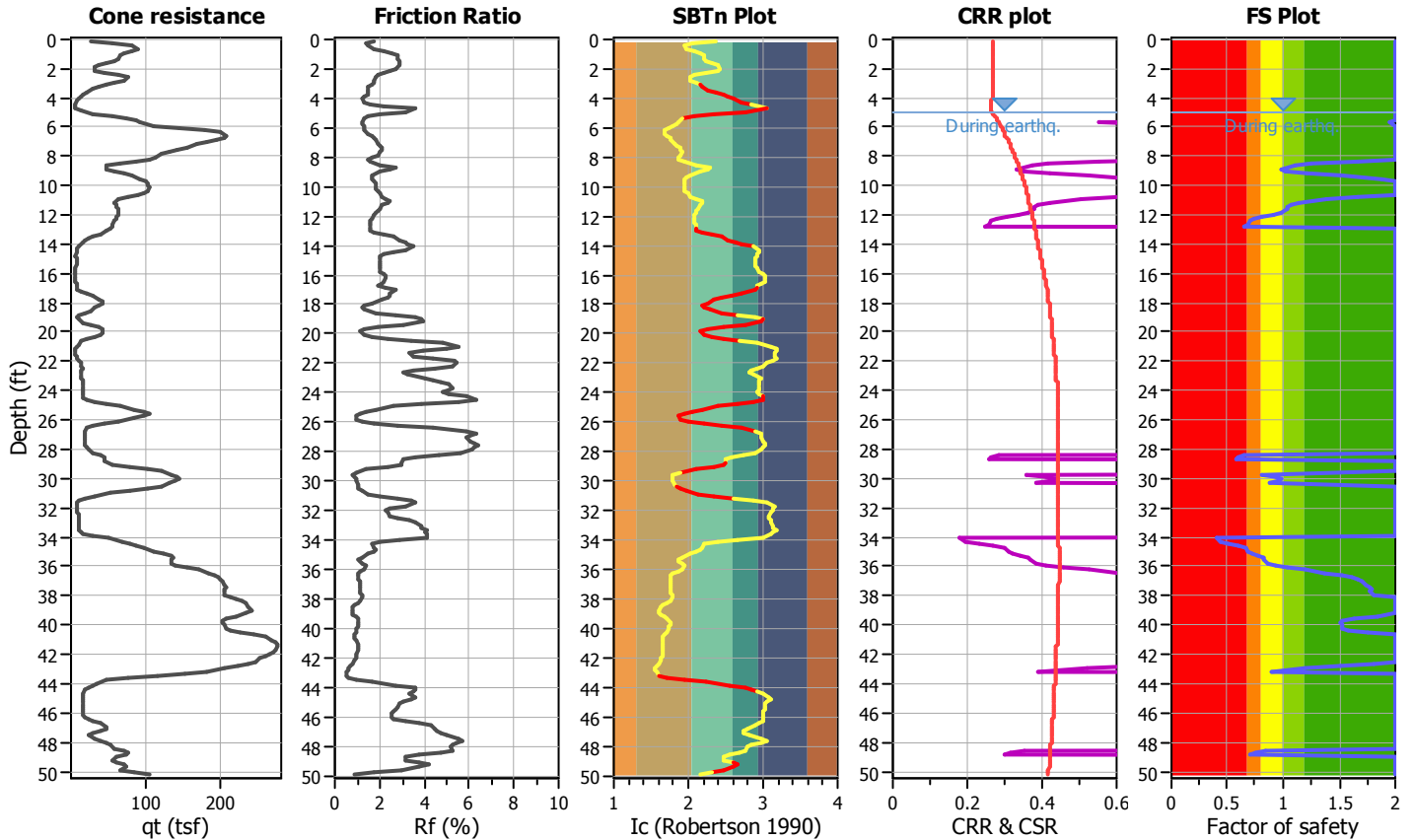
Project title : Shea Properties/Cypress

Location : Cypress, California

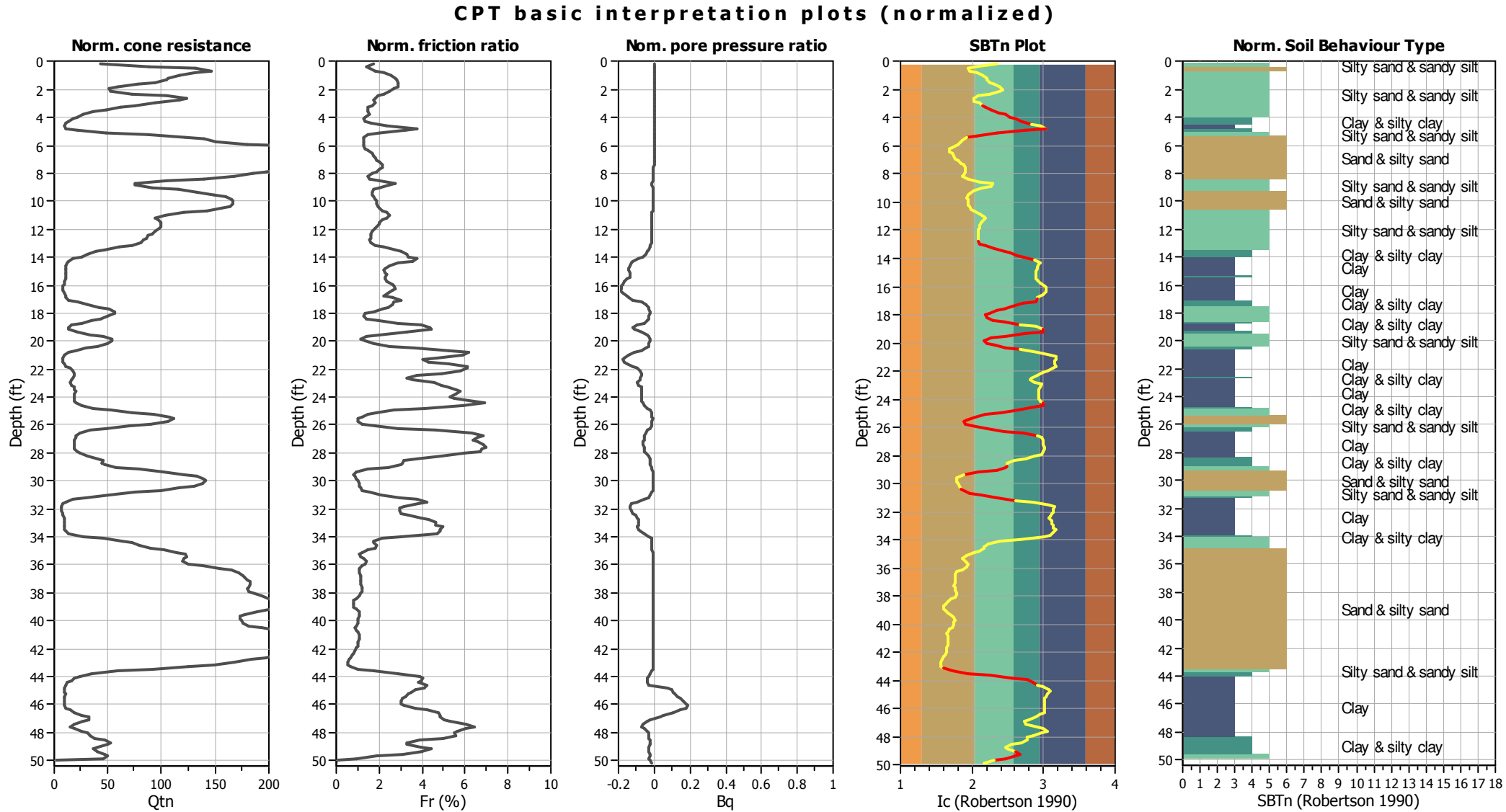
CPT file : CPT- 7

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_g$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

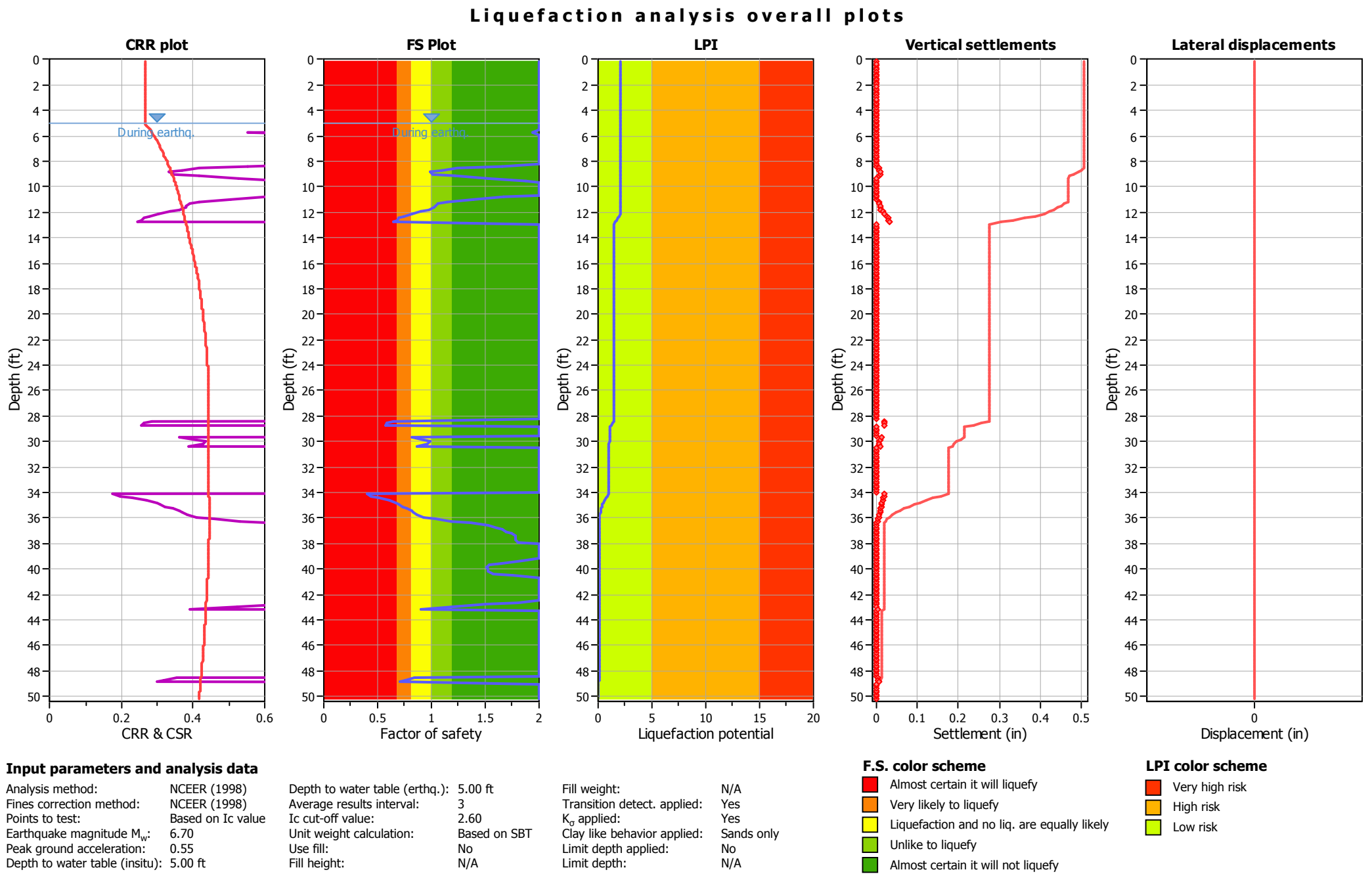


Input parameters and analysis data

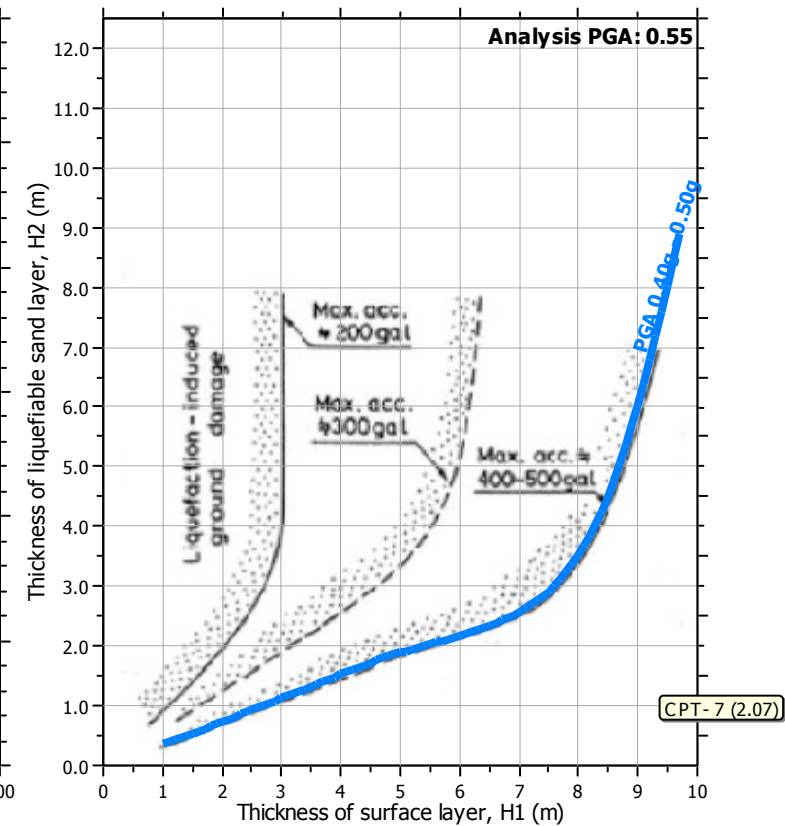
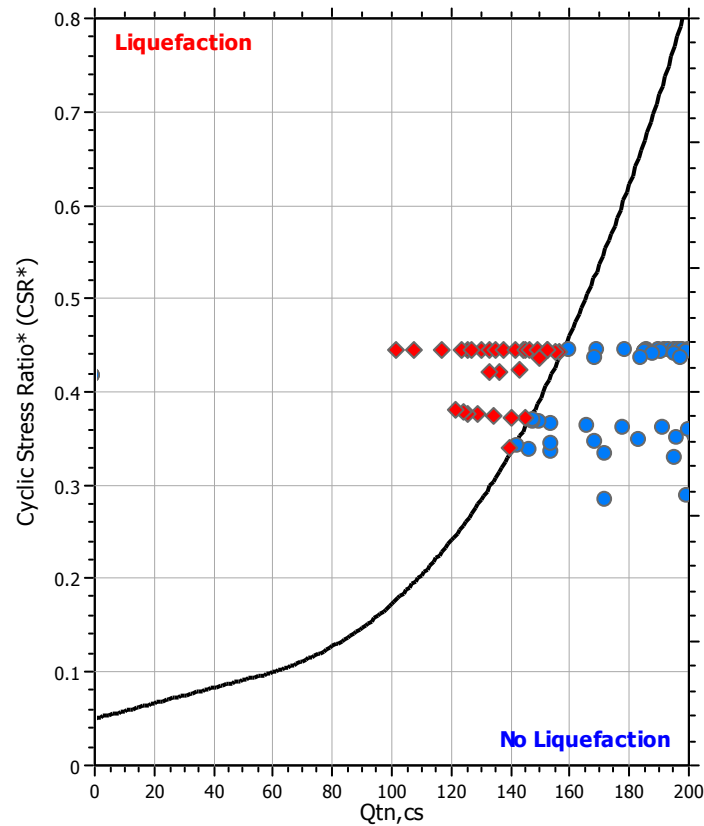
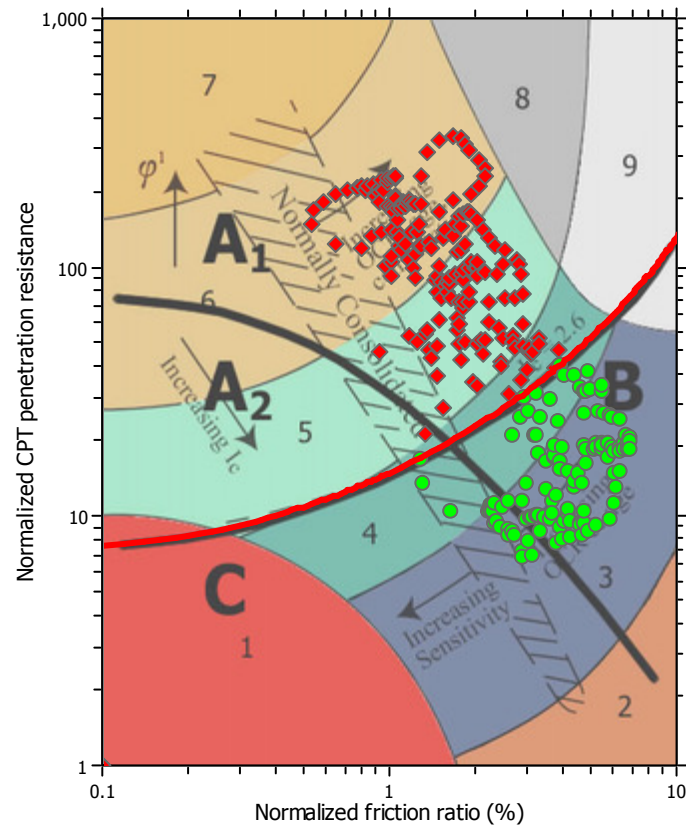
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



## Liquefaction analysis summary plots

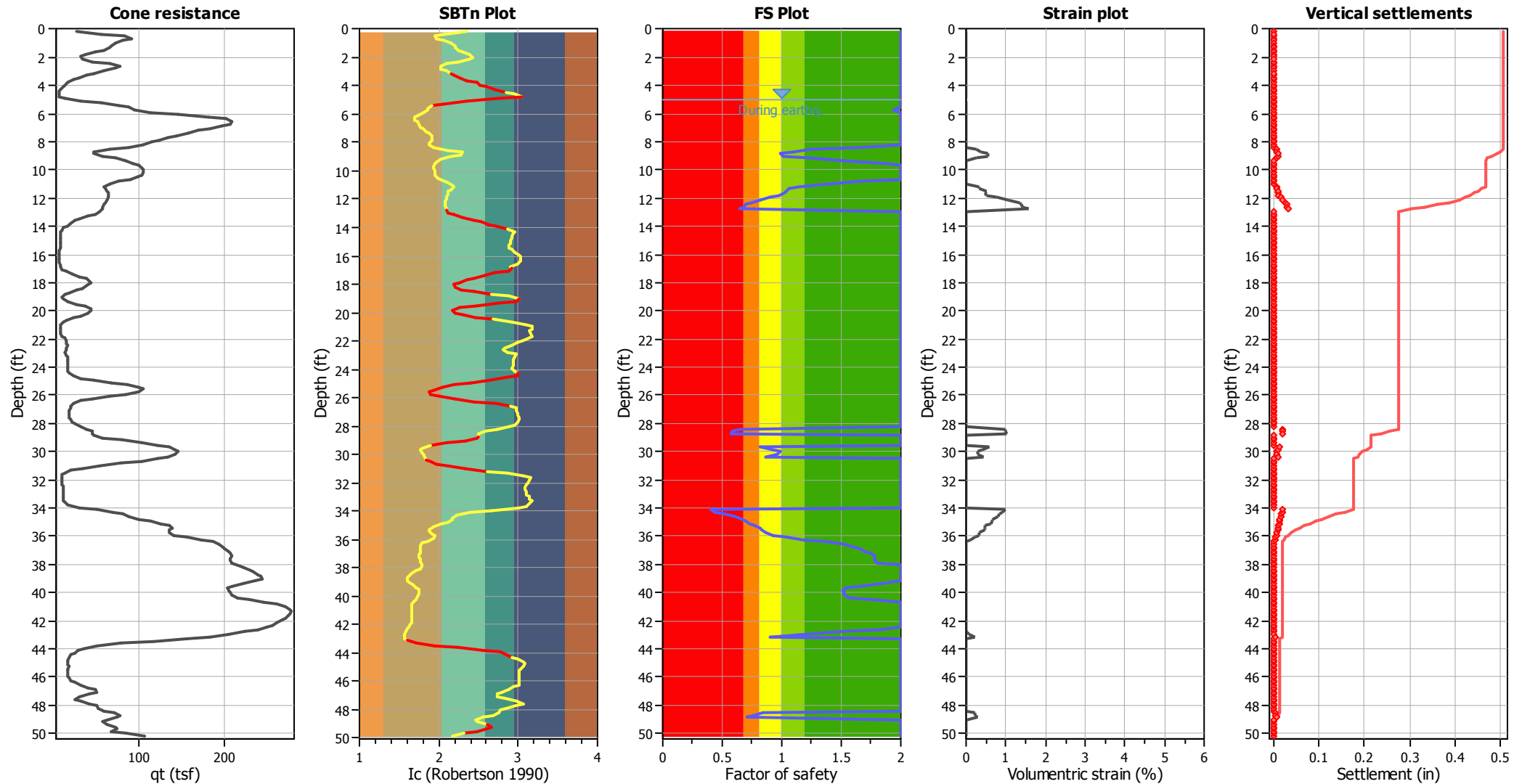


### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements



### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain





NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

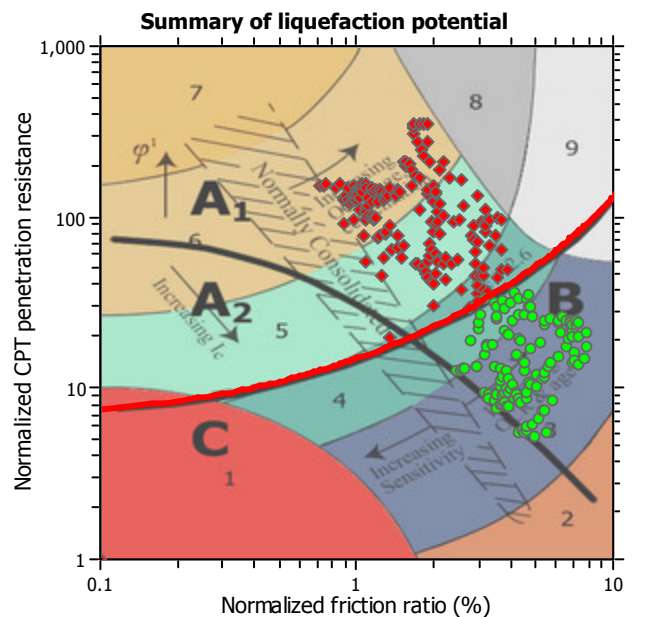
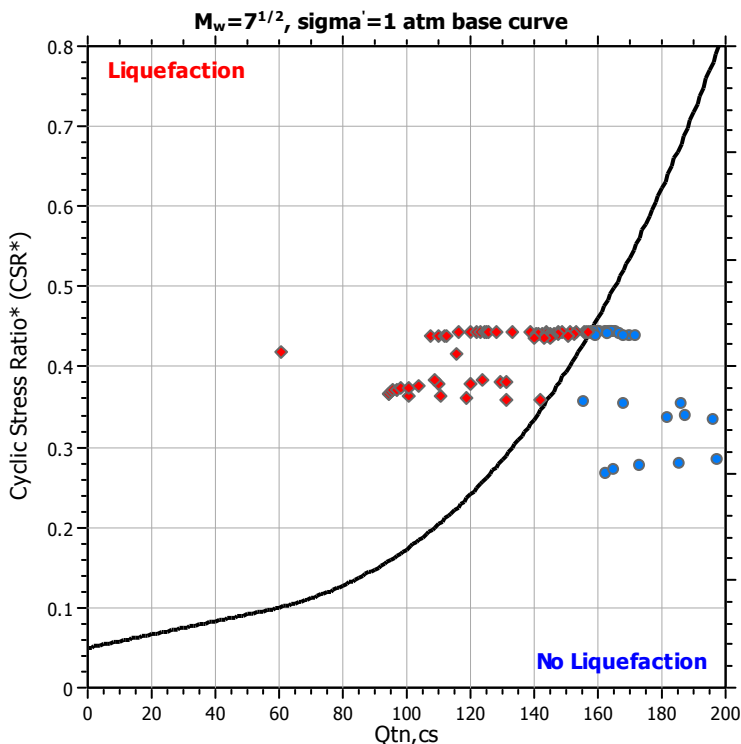
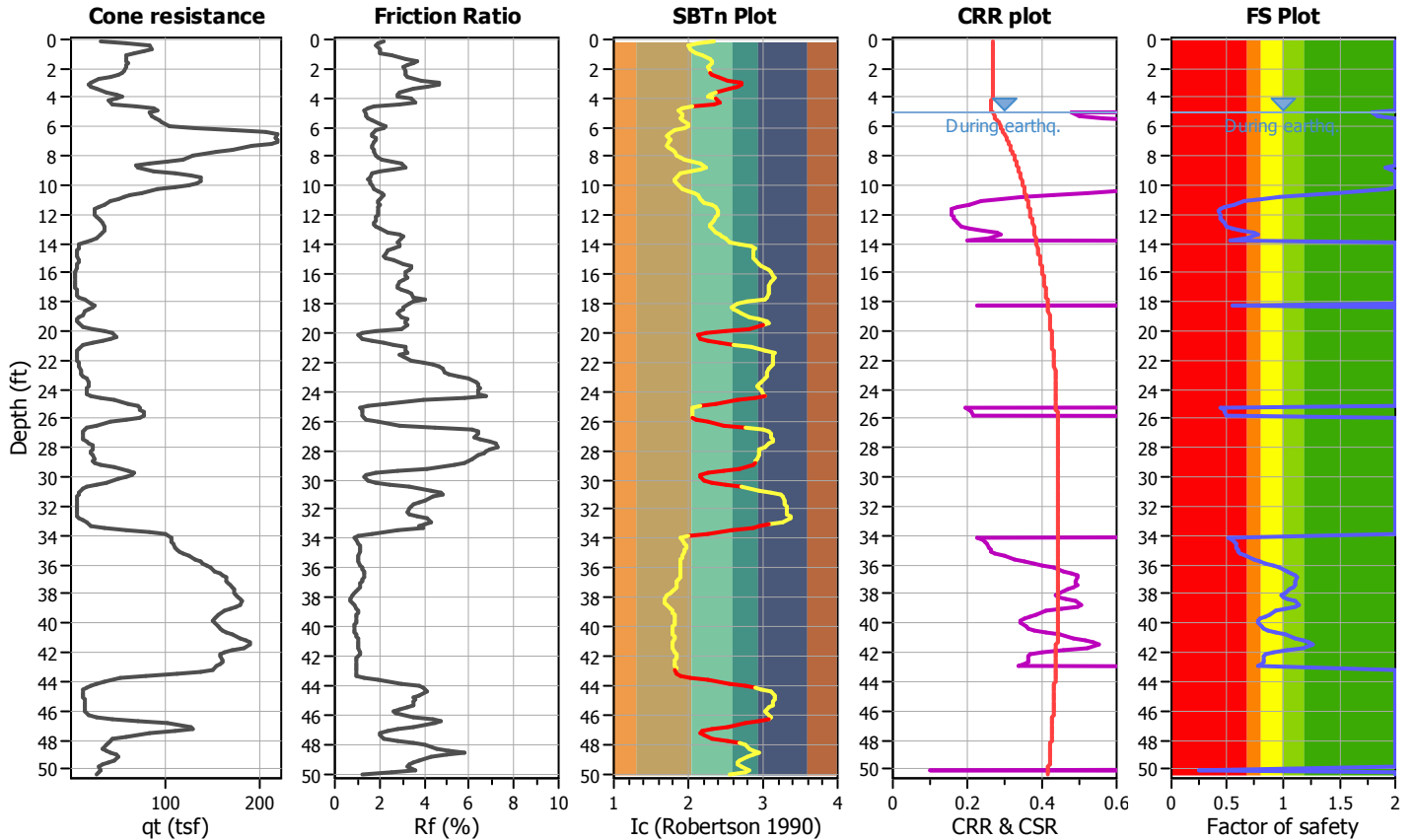
Project title : Shea Properties/Cypress

Location : Cypress, California

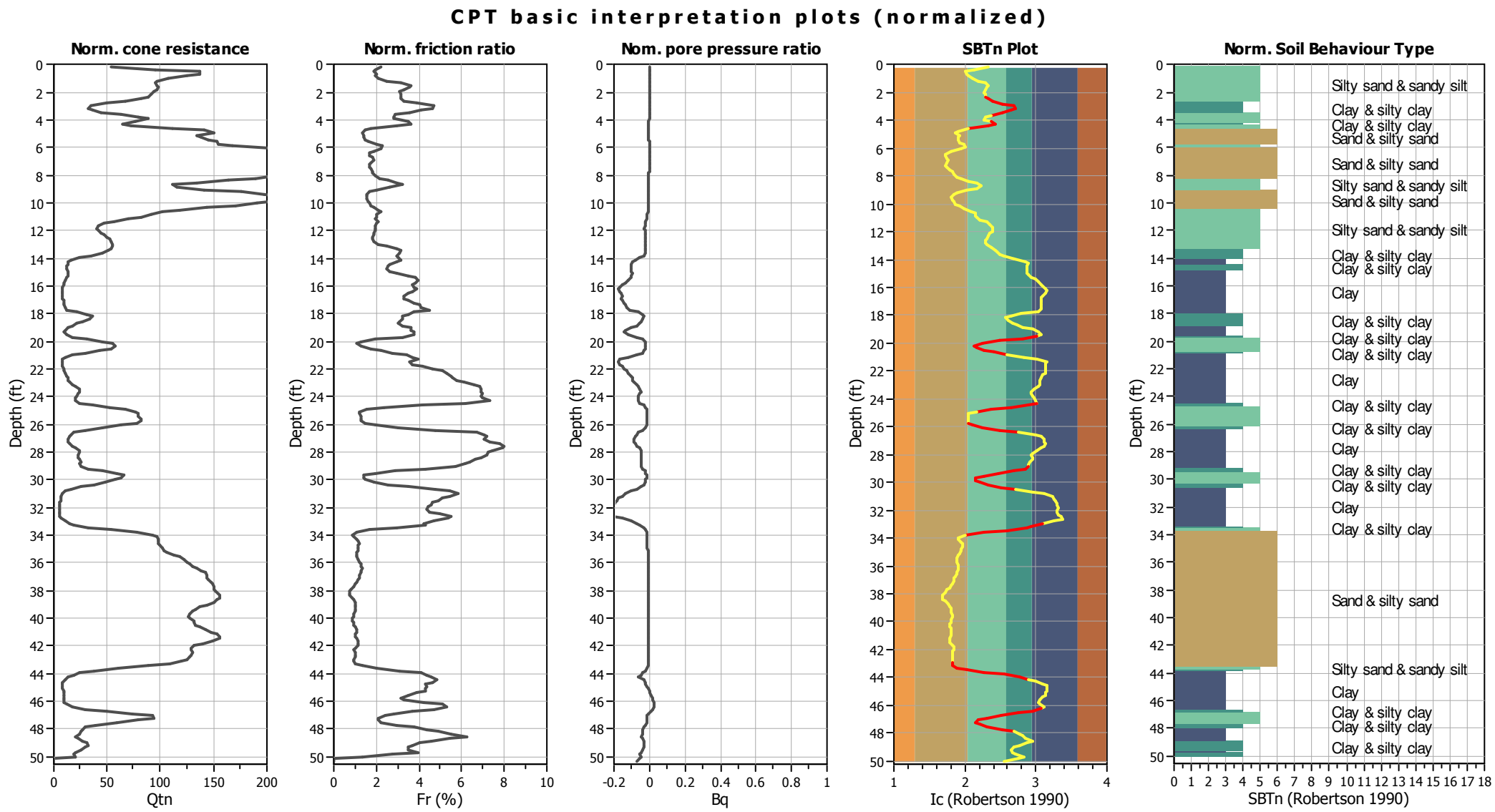
CPT file : CPT- 8

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



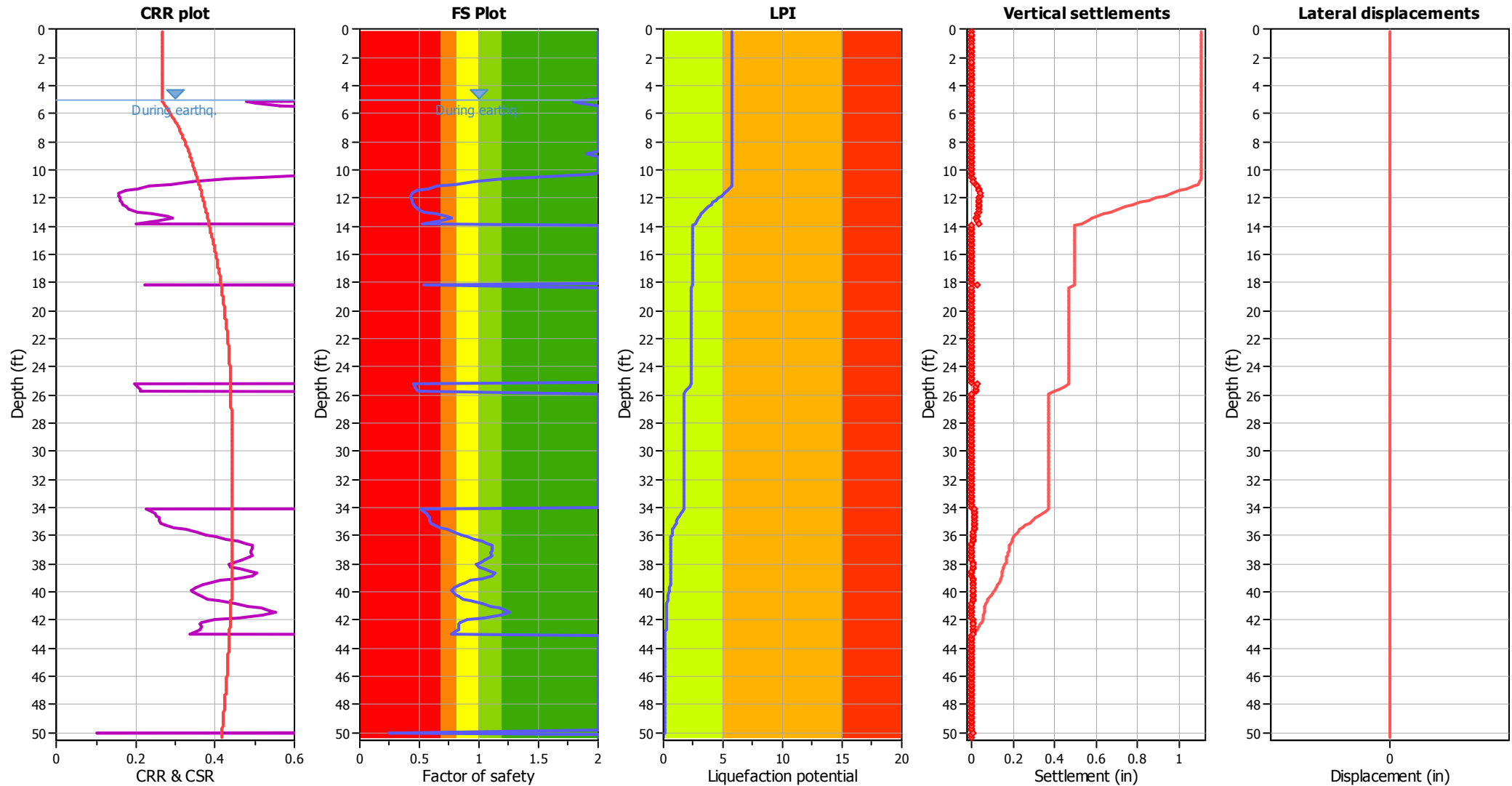
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

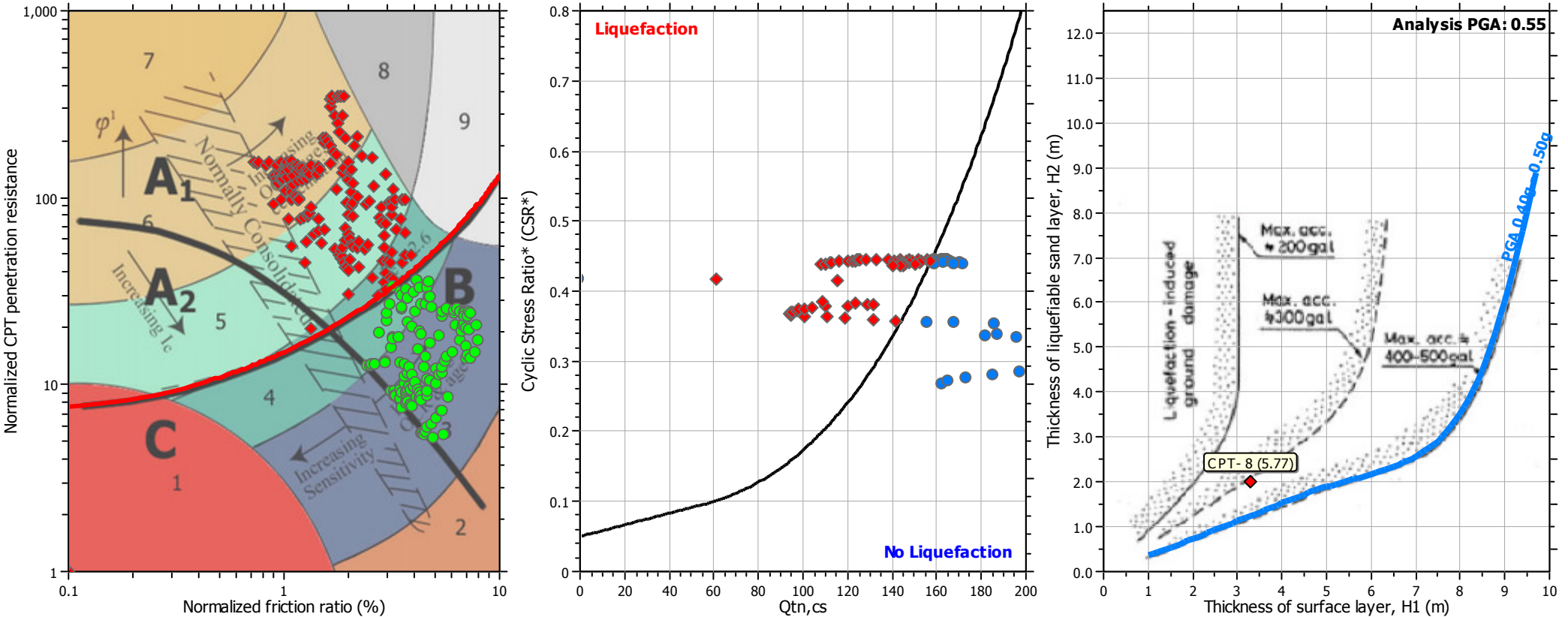
### F.S. color scheme

<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk

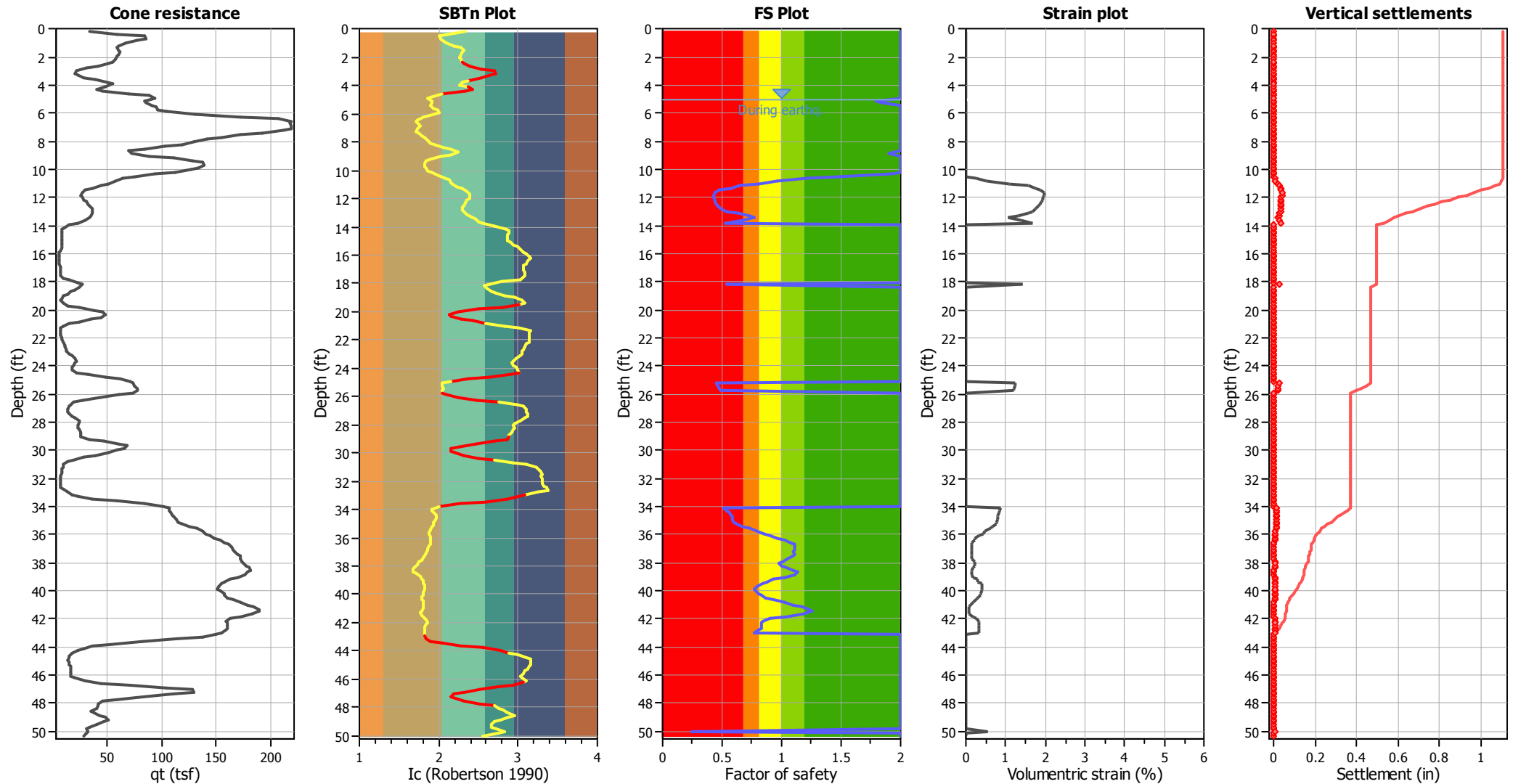
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

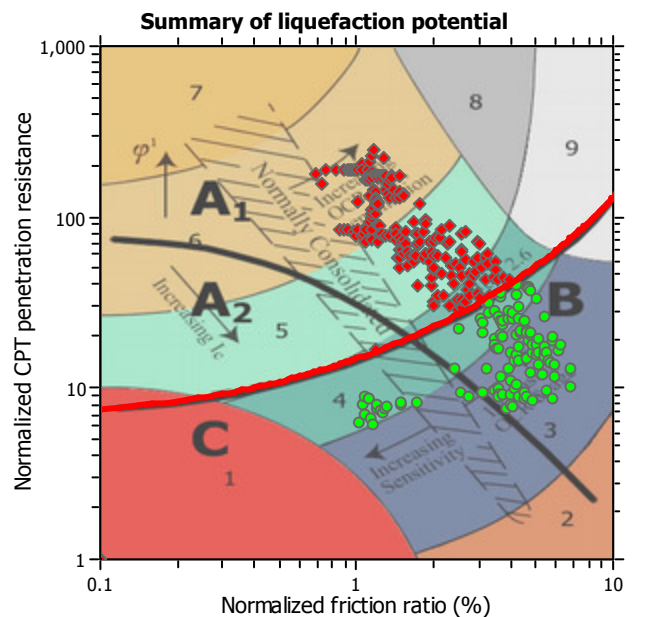
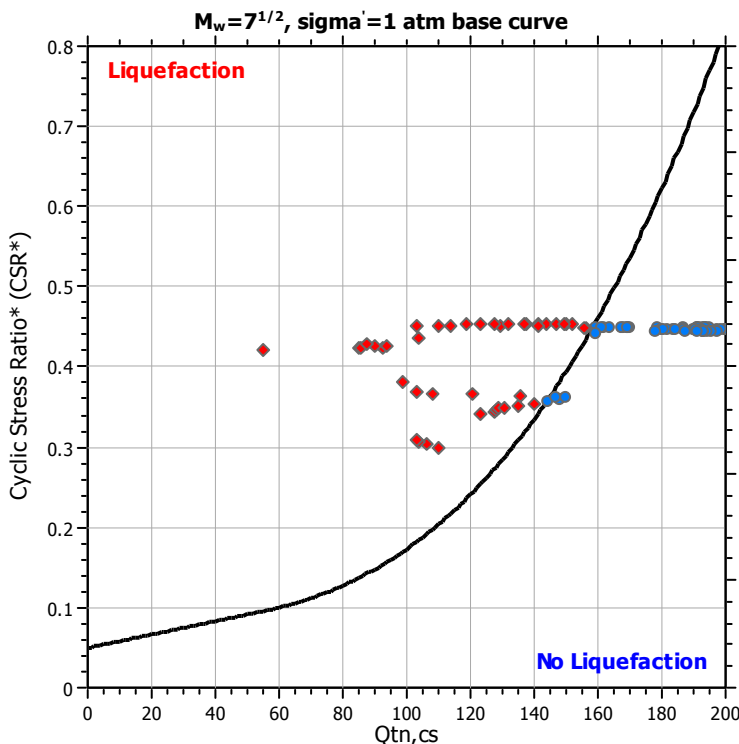
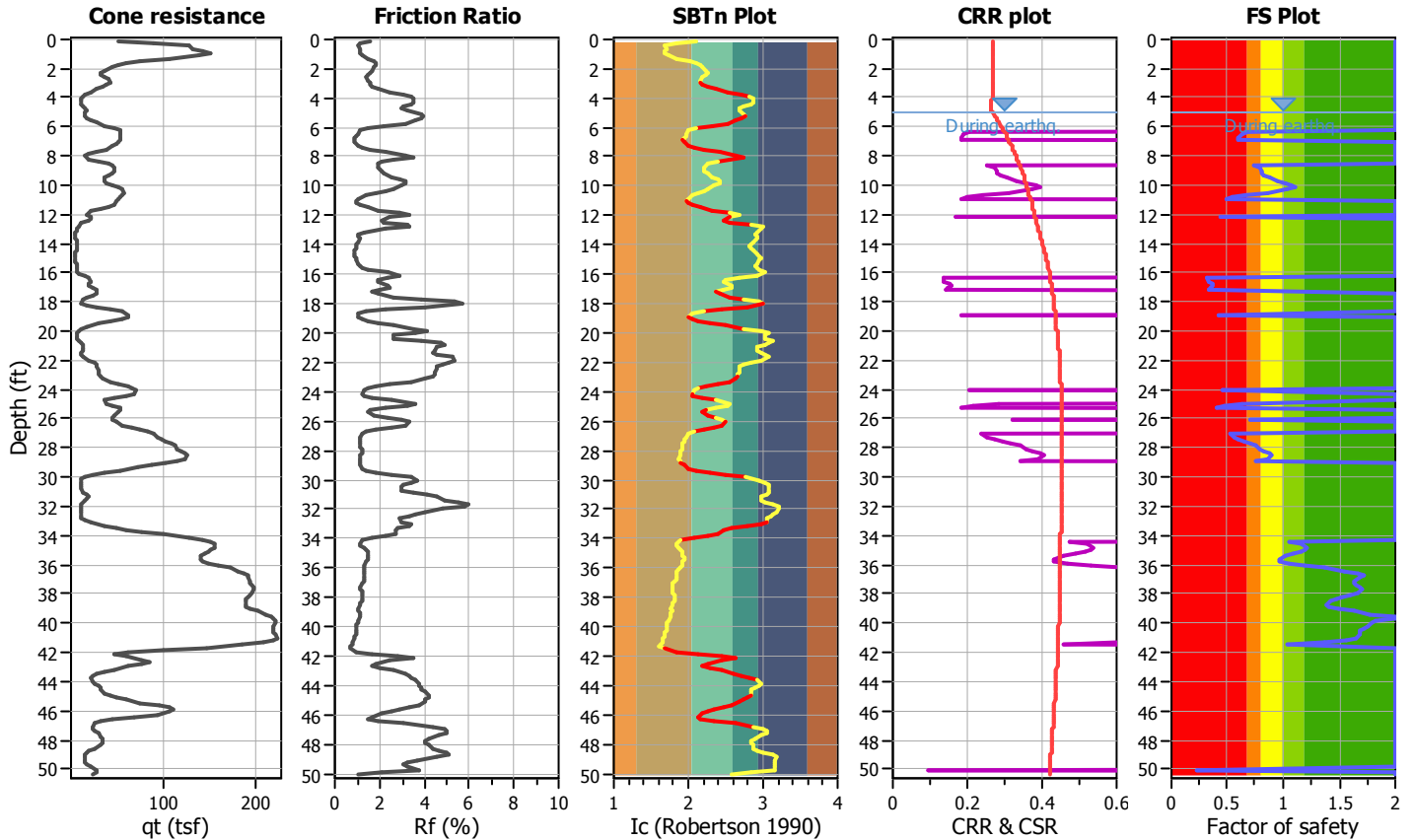
Project title : Shea Properties/Cypress

Location : Cypress, California

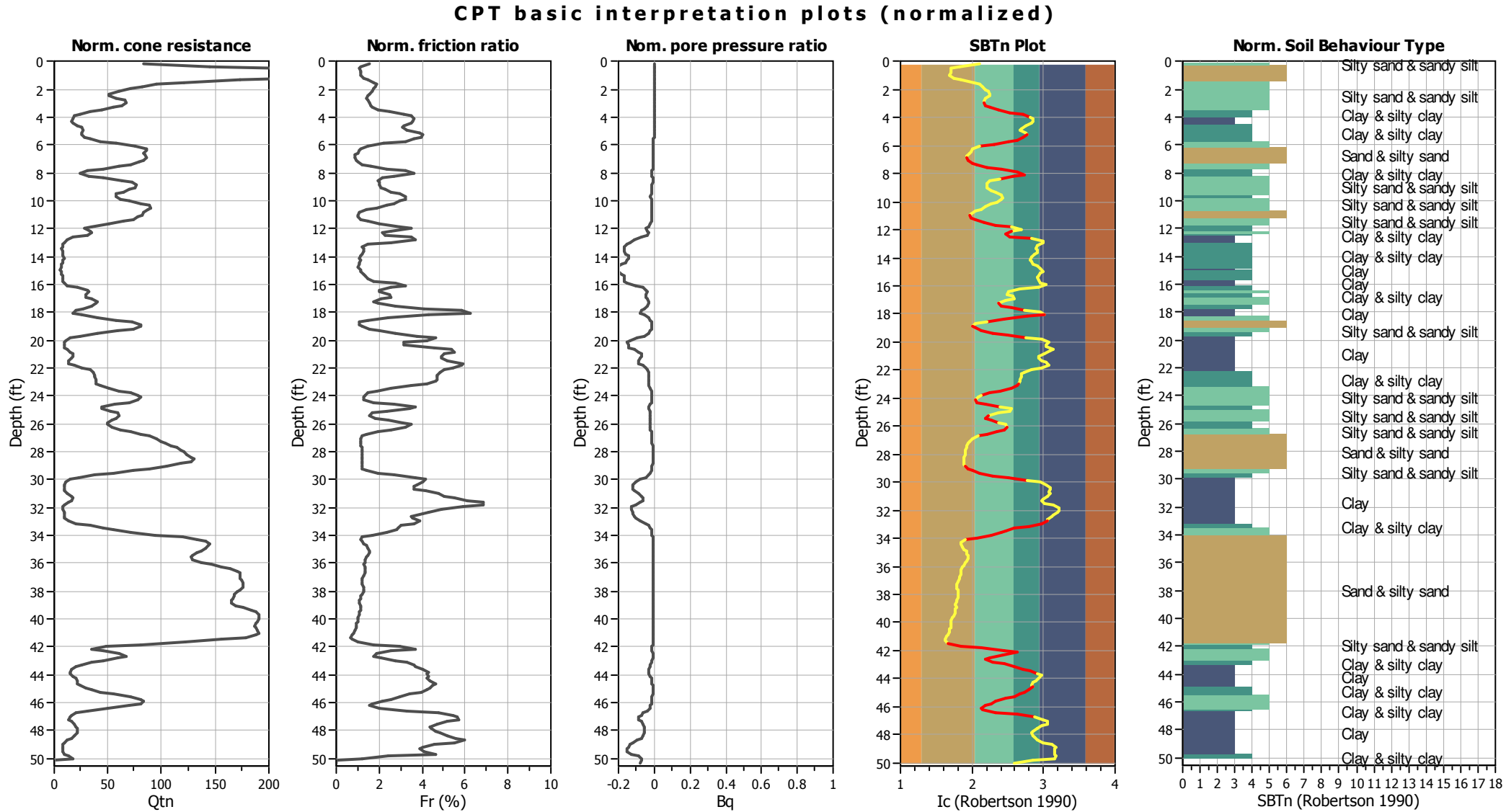
CPT file : CPT- 9

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



Input parameters and analysis data

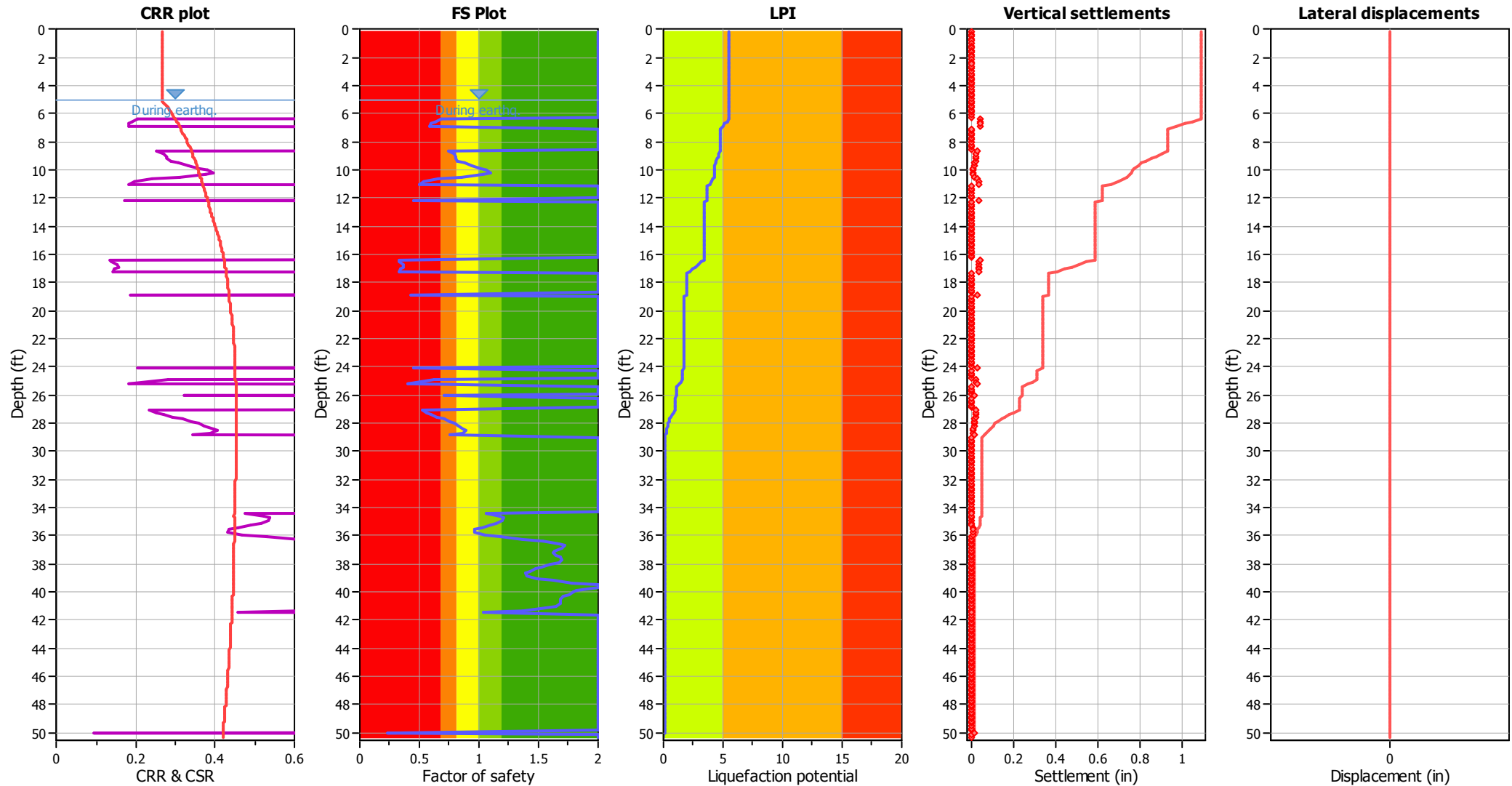
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained



## Liquefaction analysis overall plots



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## F.S. color scheme

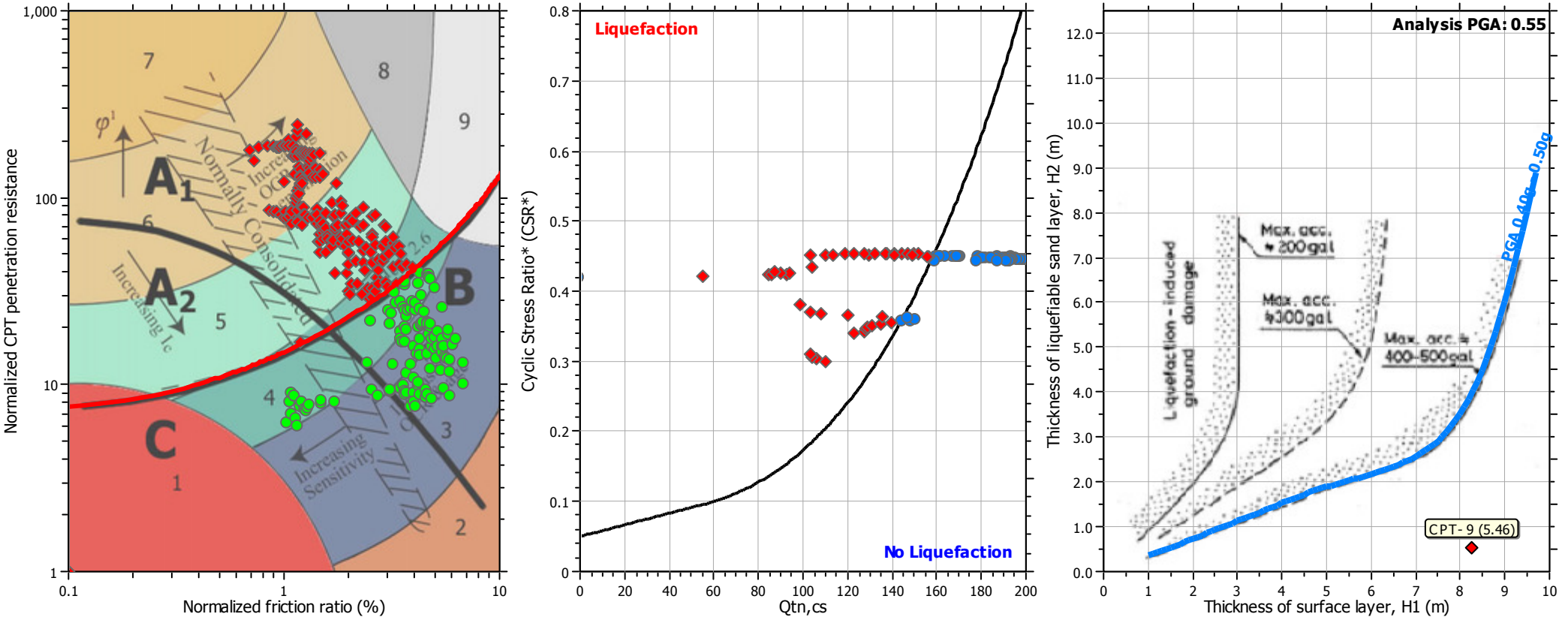
Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

## LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk



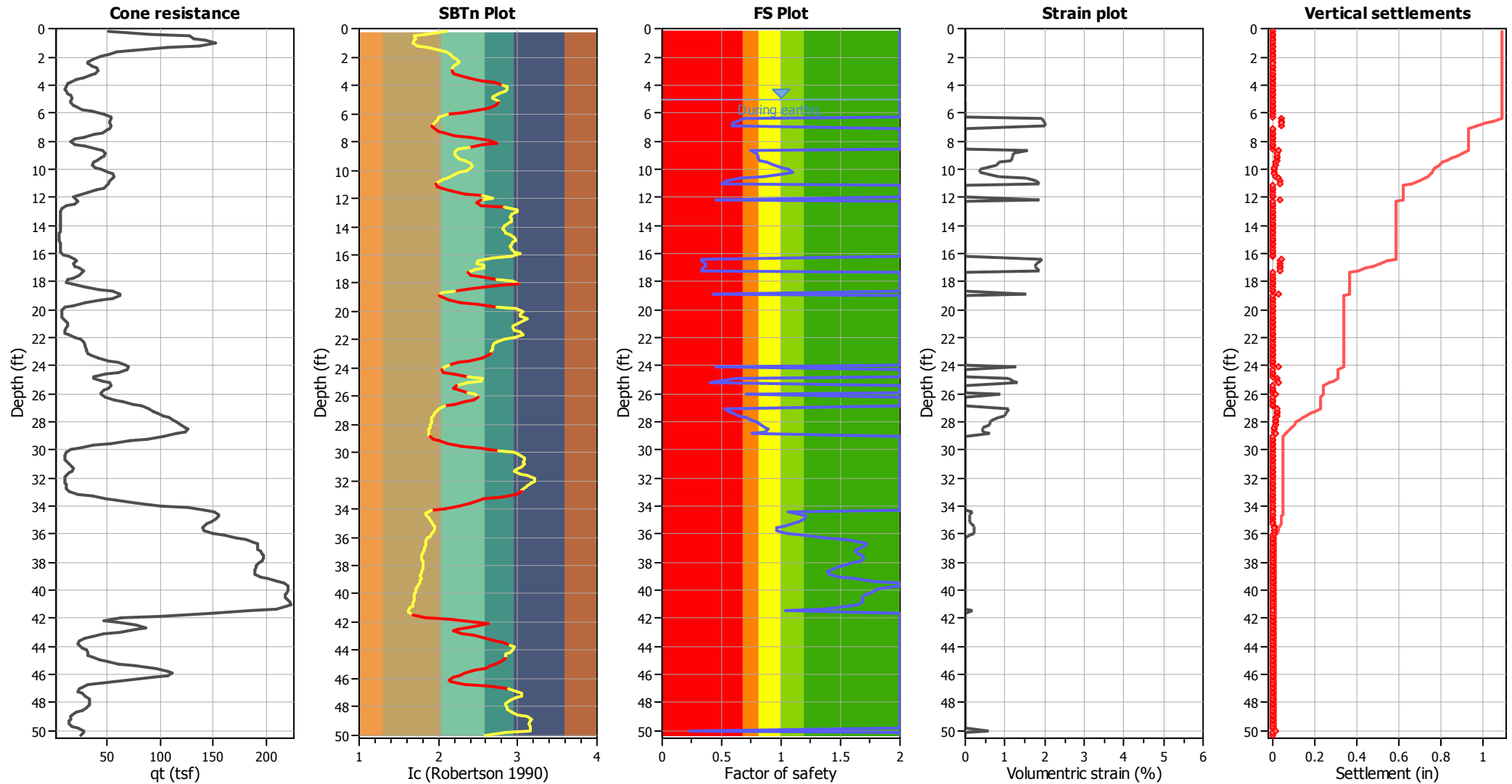
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

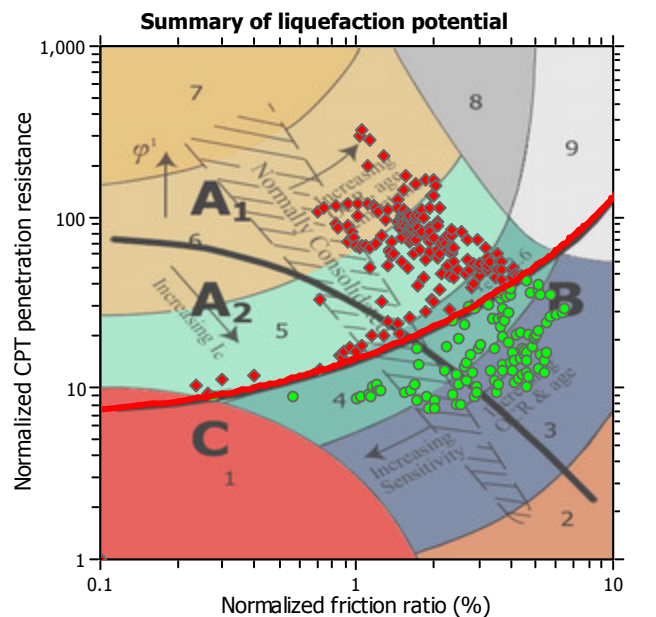
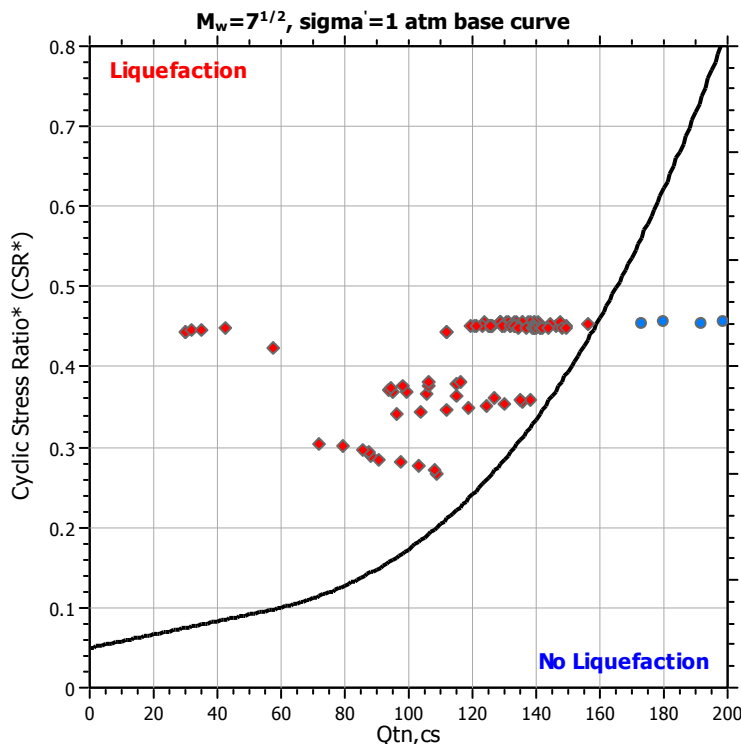
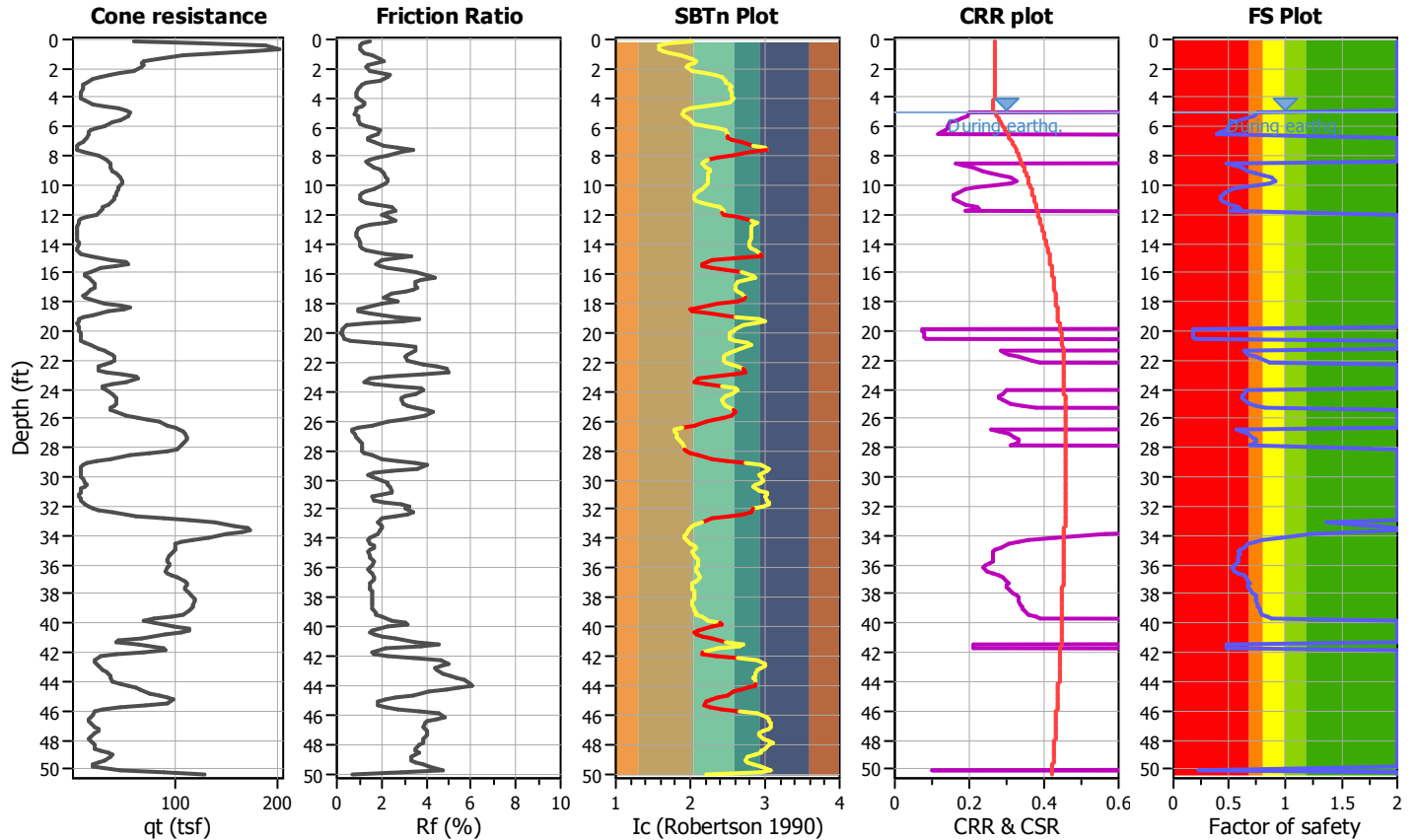
Project title : Shea Properties/Cypress

Location : Cypress, California

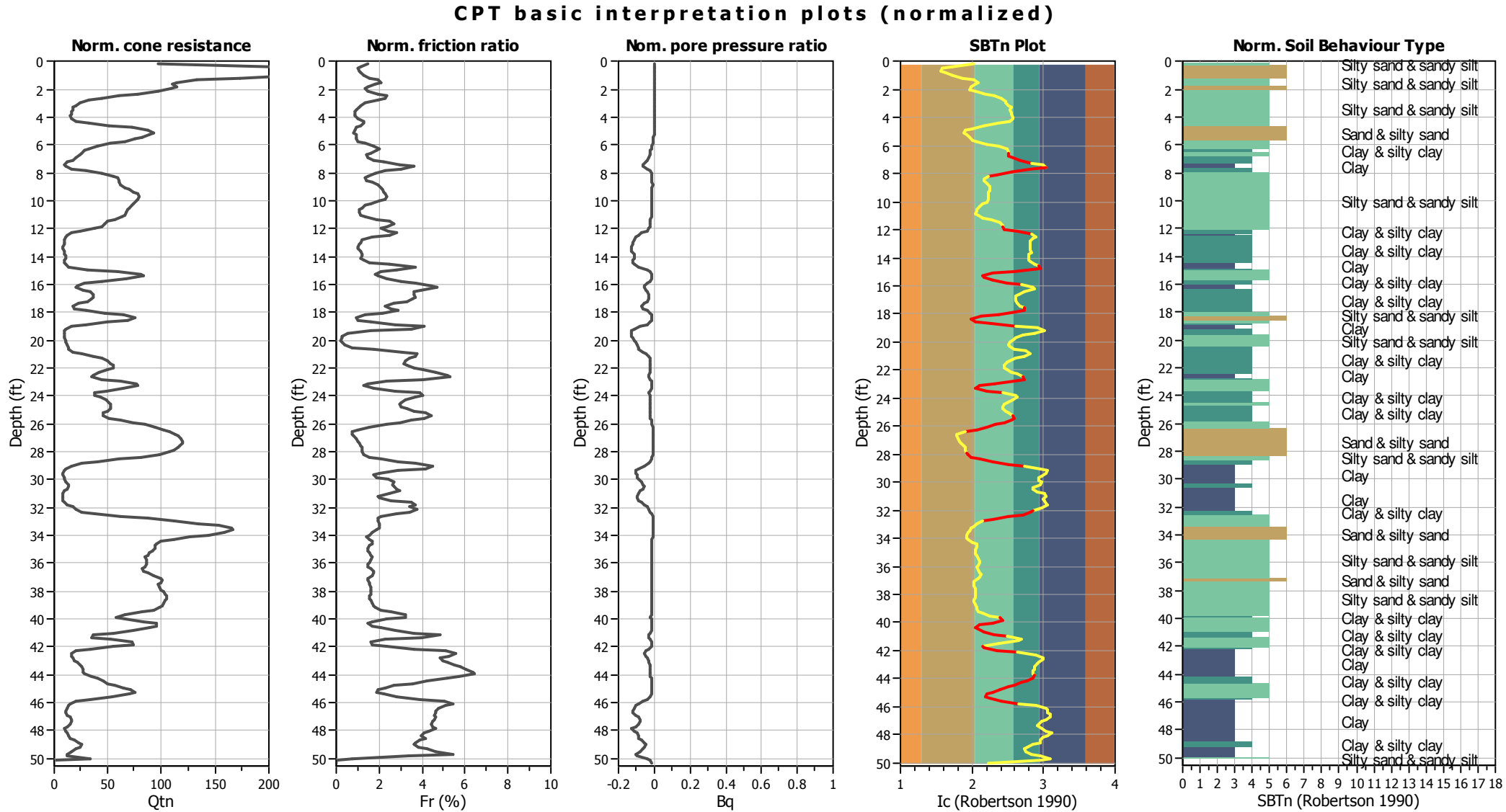
CPT file : CPT-10

### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry



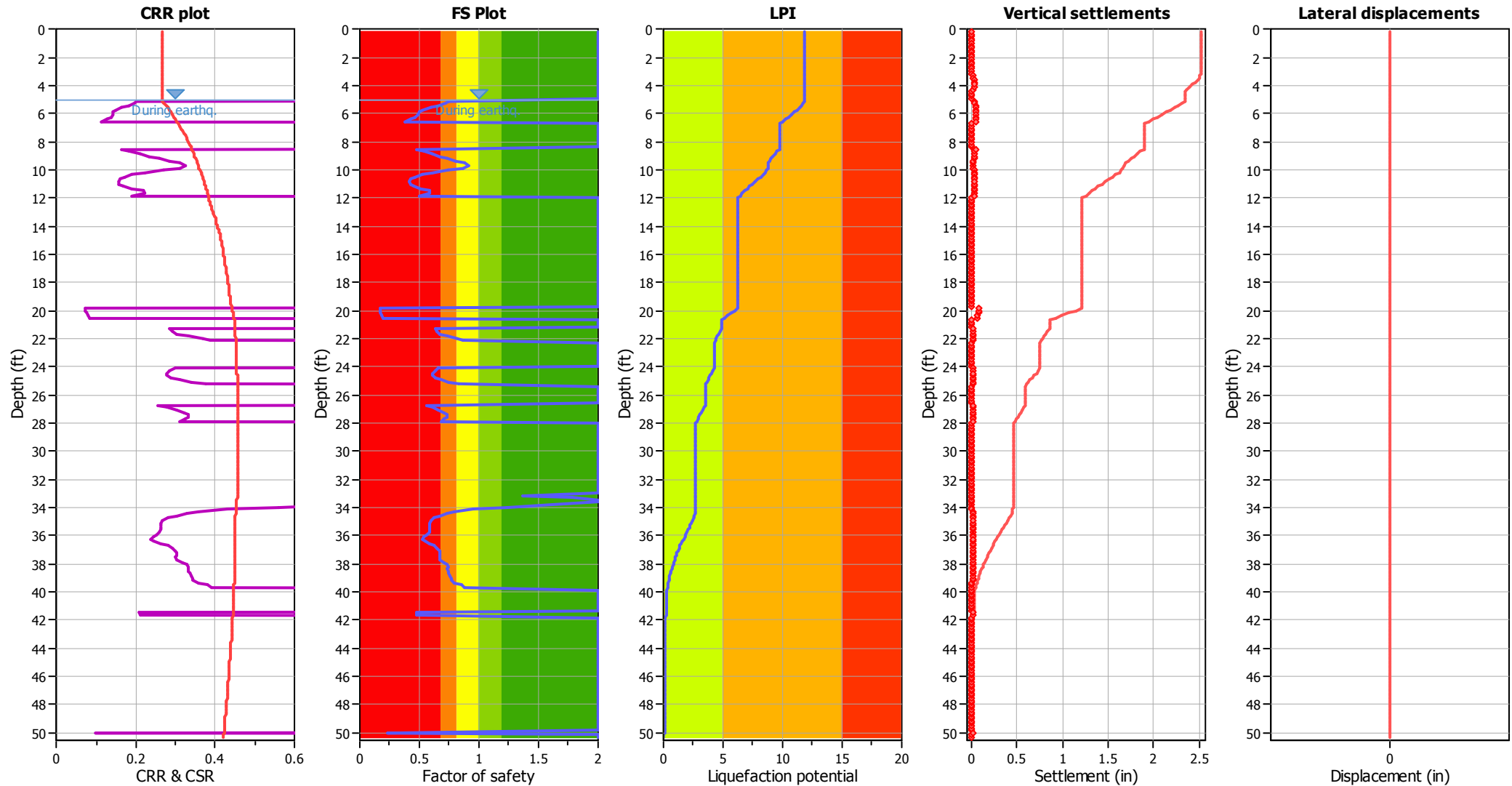
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained	4. Clayey silt to silty	7. Gravely sand to sand
2. Organic material	5. Silty sand to sandy silt	8. Very stiff sand to
3. Clay to silty clay	6. Clean sand to silty sand	9. Very stiff fine grained

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_0$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

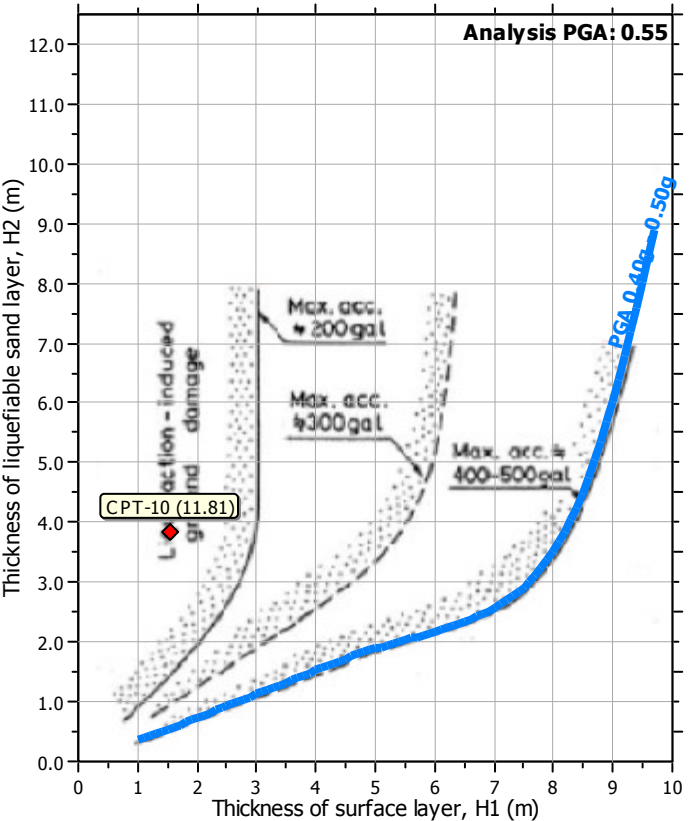
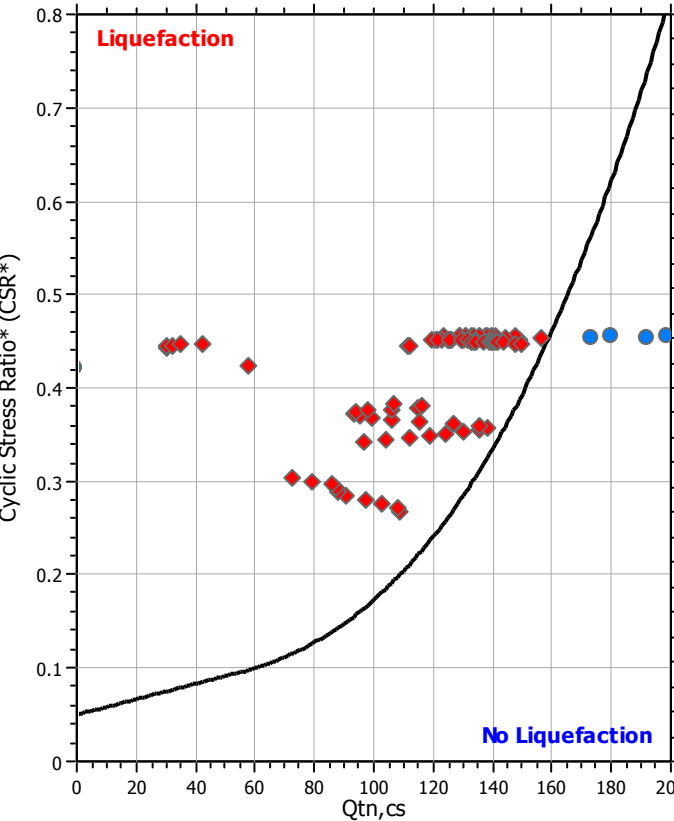
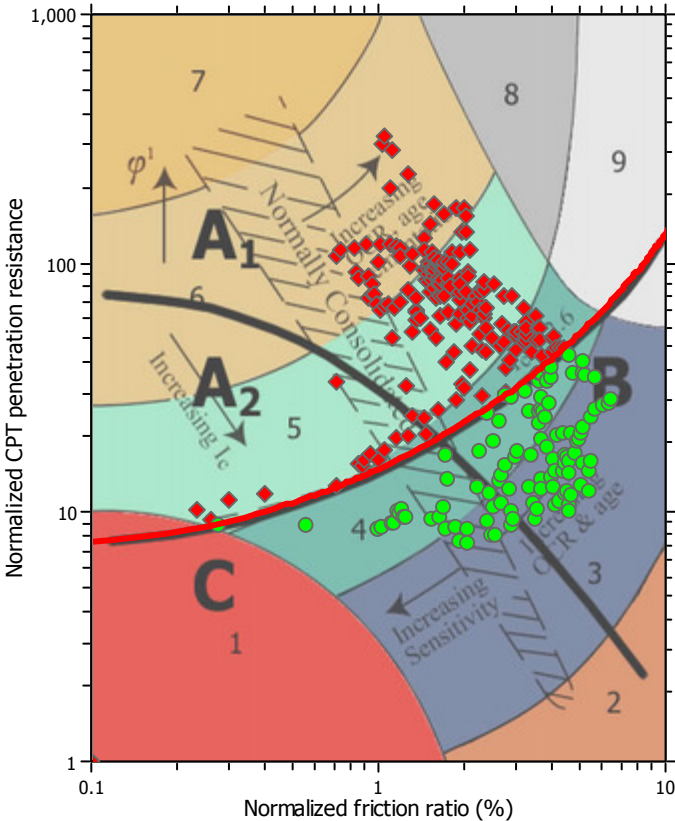
### F.S. color scheme

Red	Almost certain it will liquefy
Orange	Very likely to liquefy
Yellow	Liquefaction and no liq. are equally likely
Light Green	Unlike to liquefy
Dark Green	Almost certain it will not liquefy

### LPI color scheme

Red	Very high risk
Orange	High risk
Yellow	Low risk

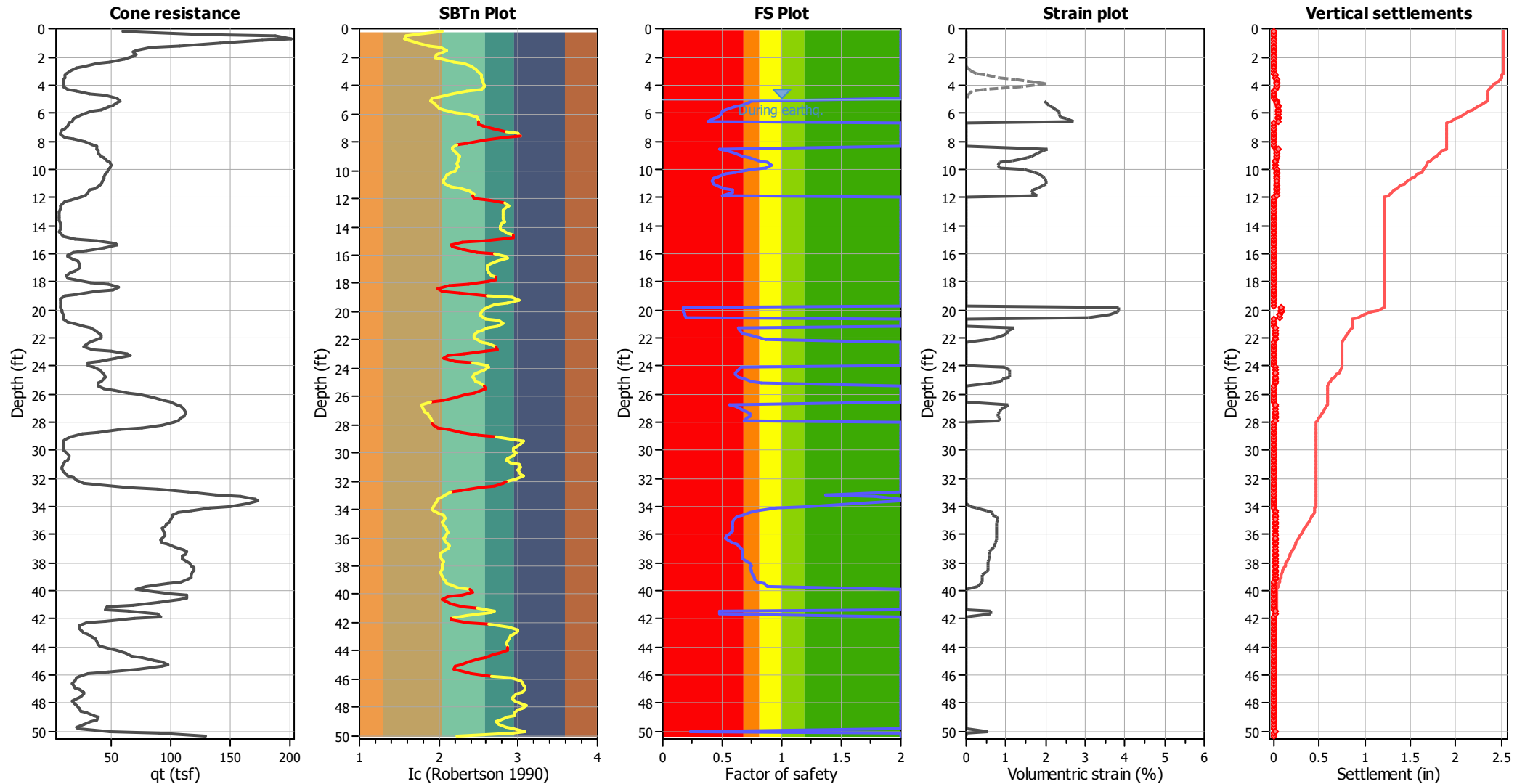
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain





NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

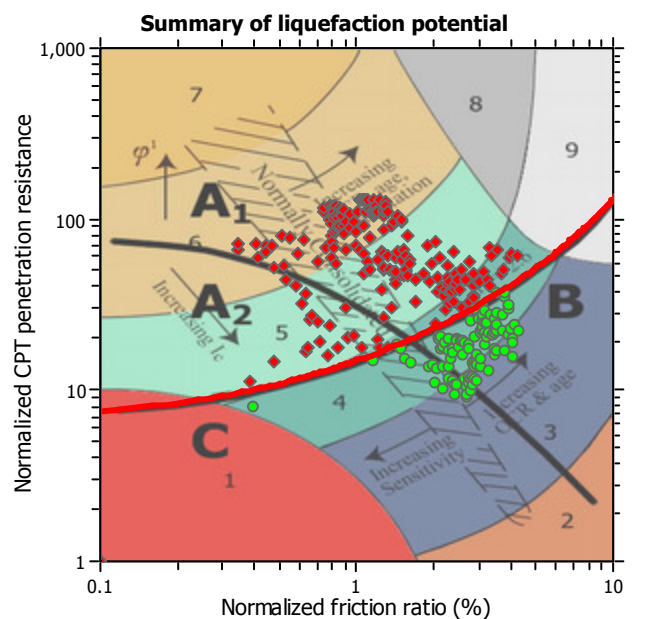
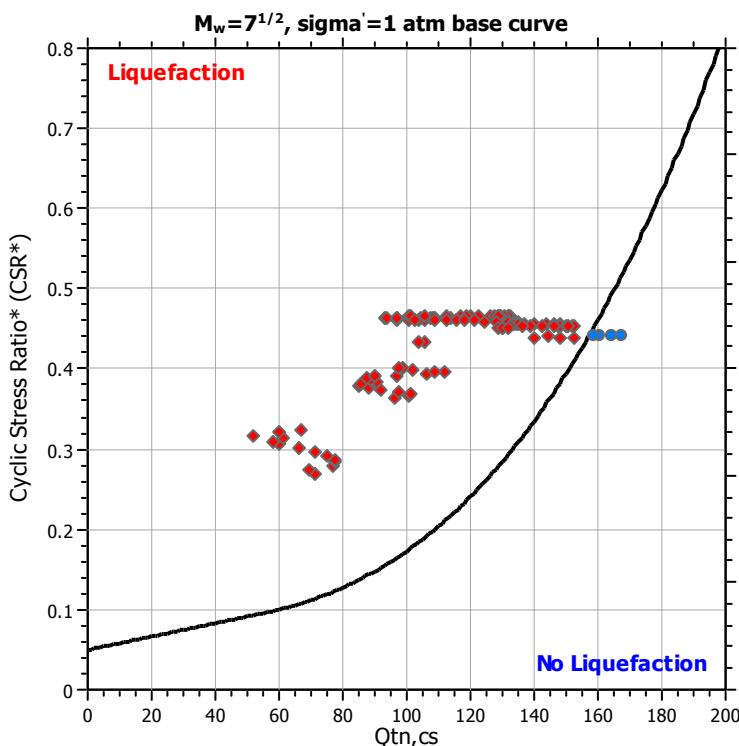
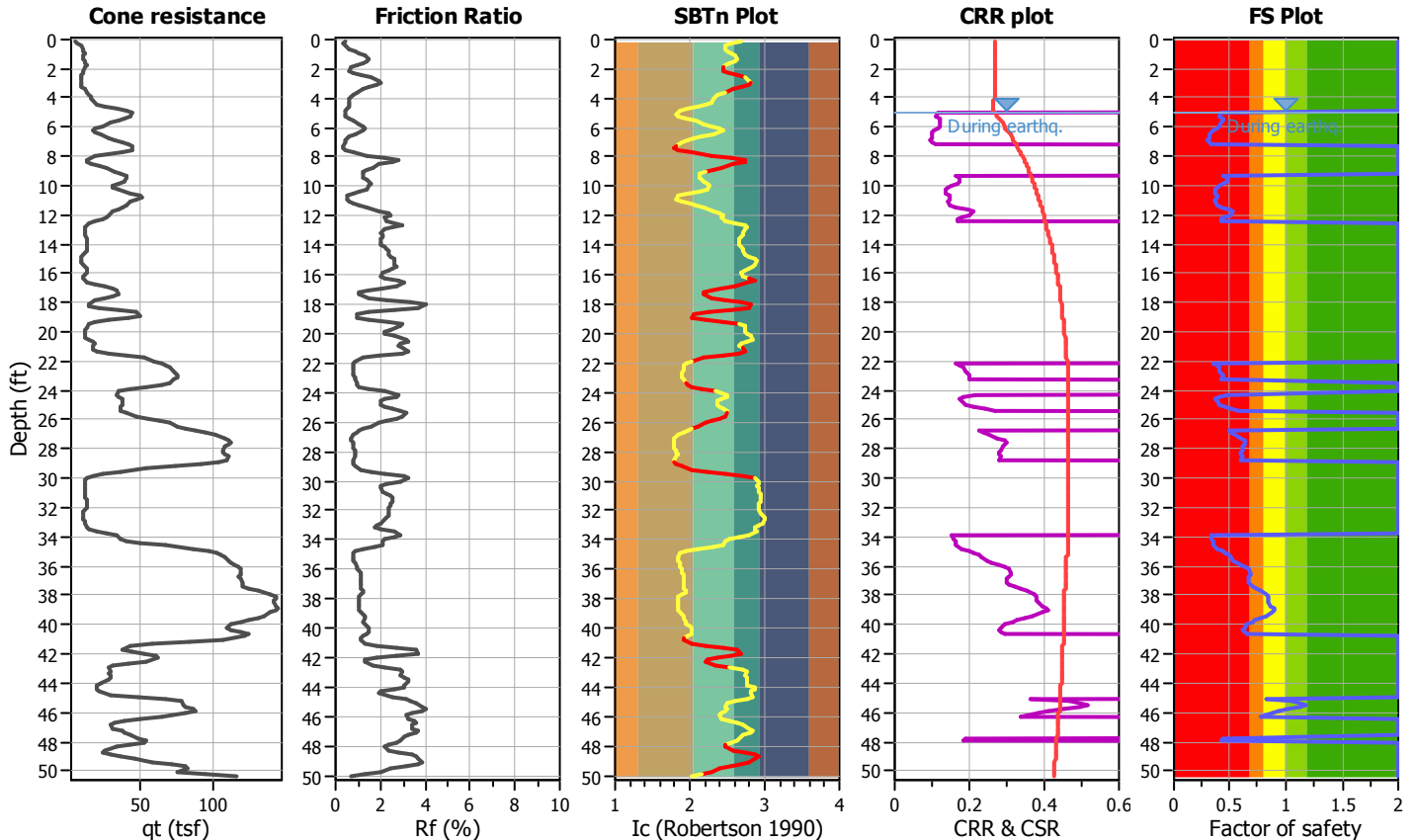
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT-11

### Input parameters and analysis data

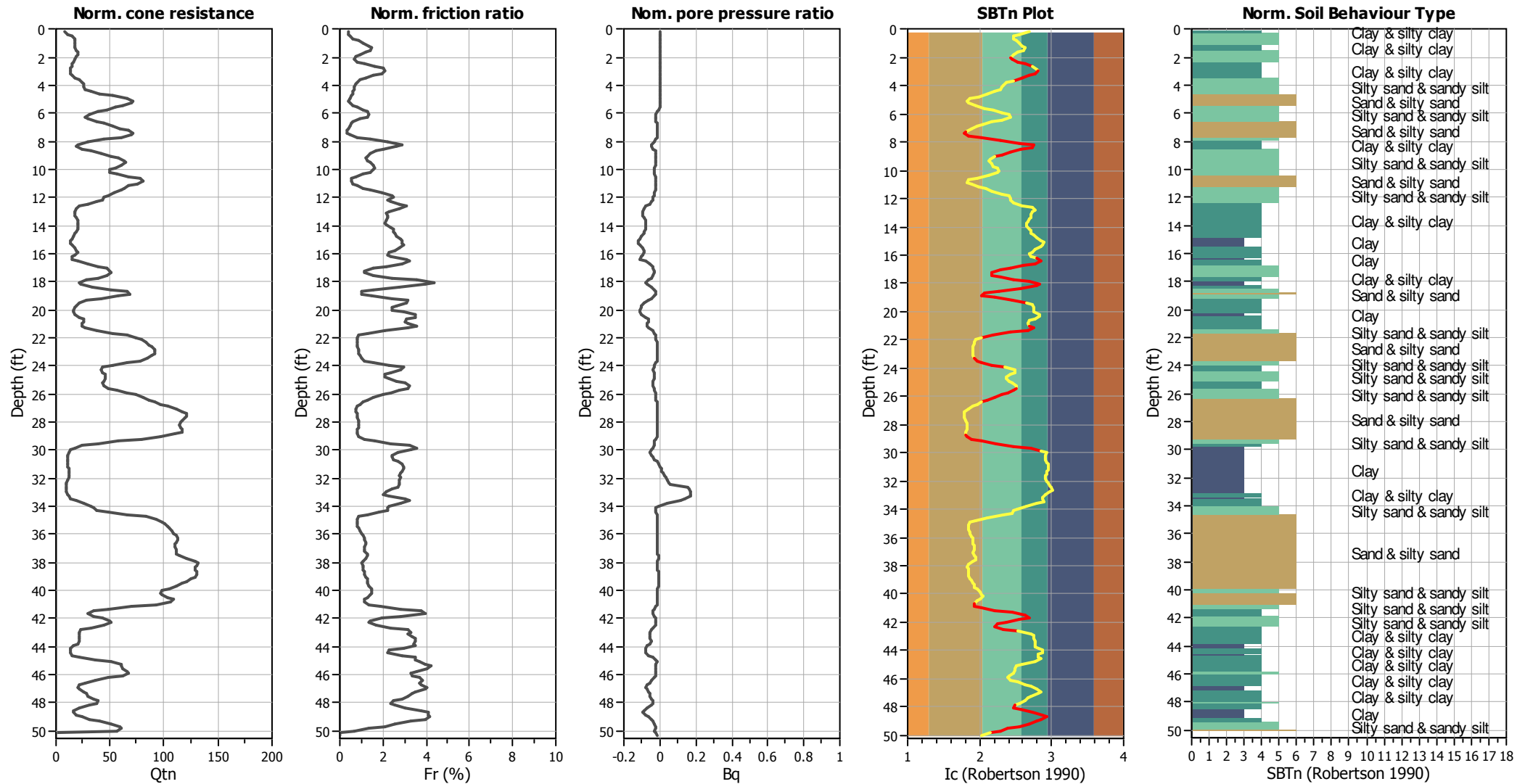
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

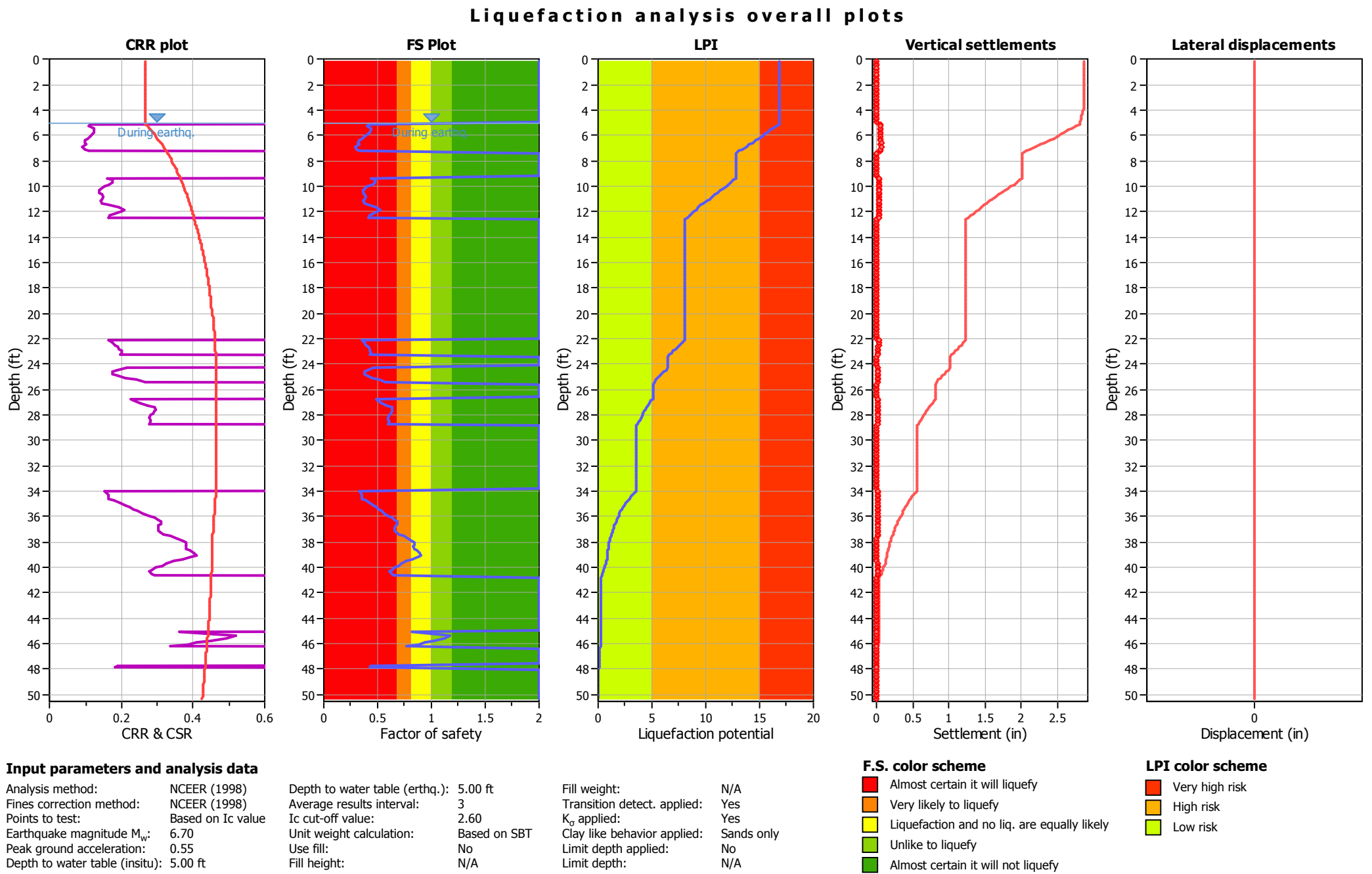


## CPT basic interpretation plots (normalized)

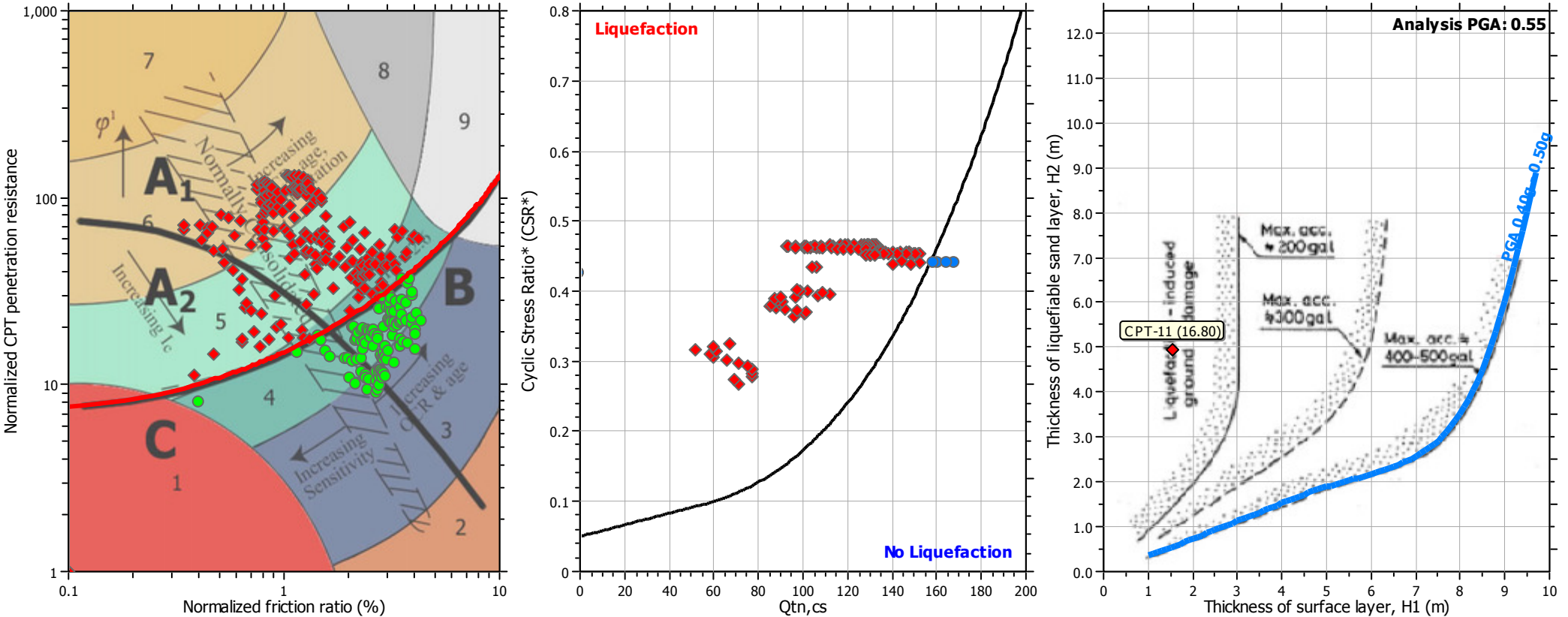


## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



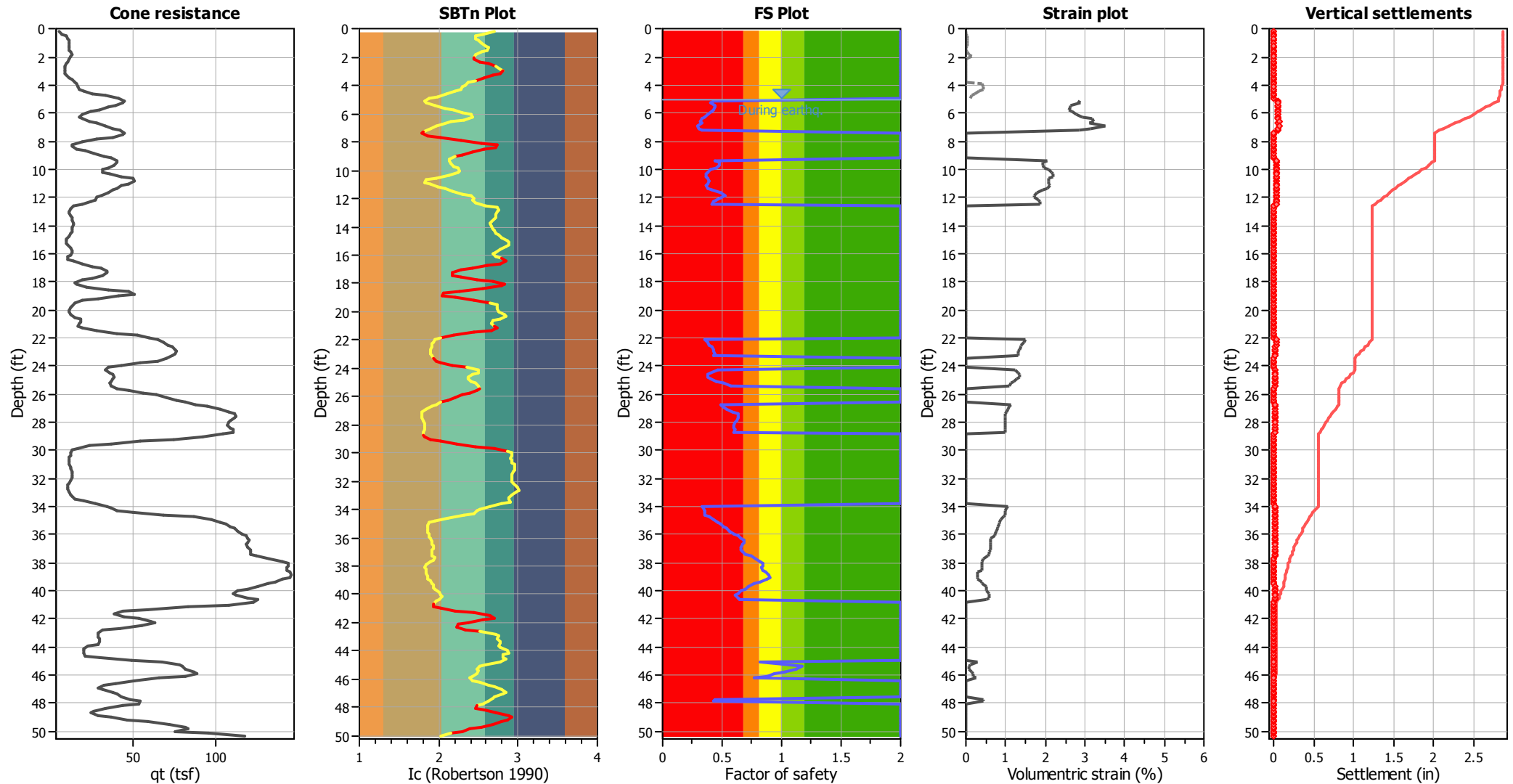
Liquefaction analysis summary plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_\sigma$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Estimation of post-earthquake settlements



### Abbreviations

$q_c$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain



NMG

NMG Geotechnical, Inc.

17991 Fitch

Irvine, CA 92614

## LIQUEFACTION ANALYSIS REPORT

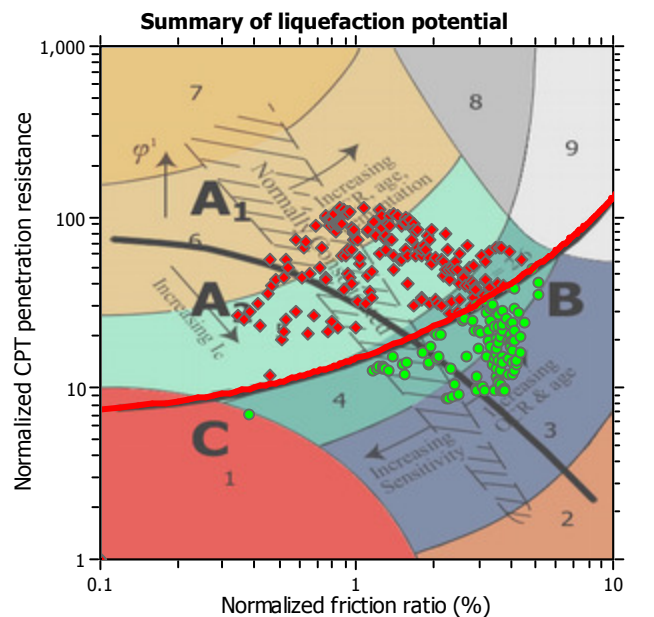
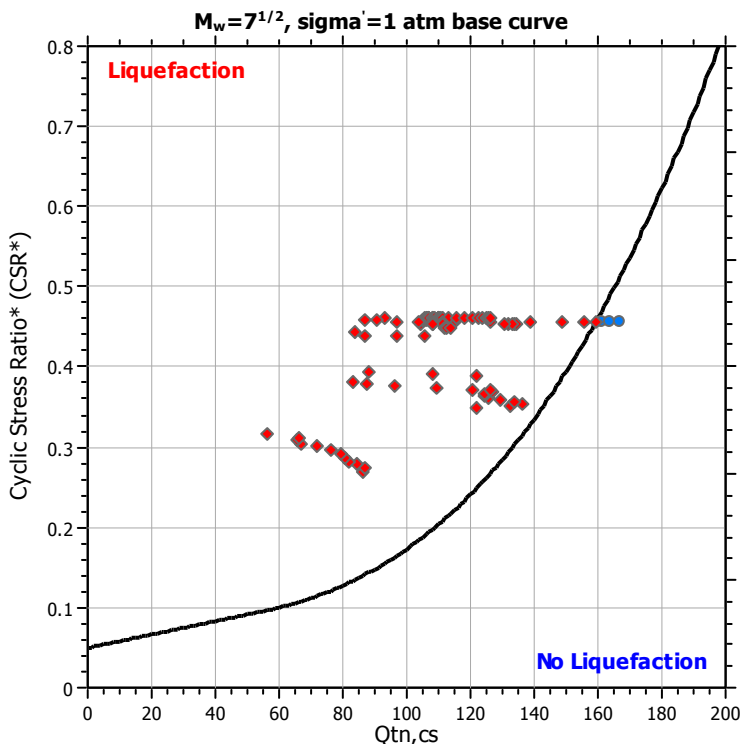
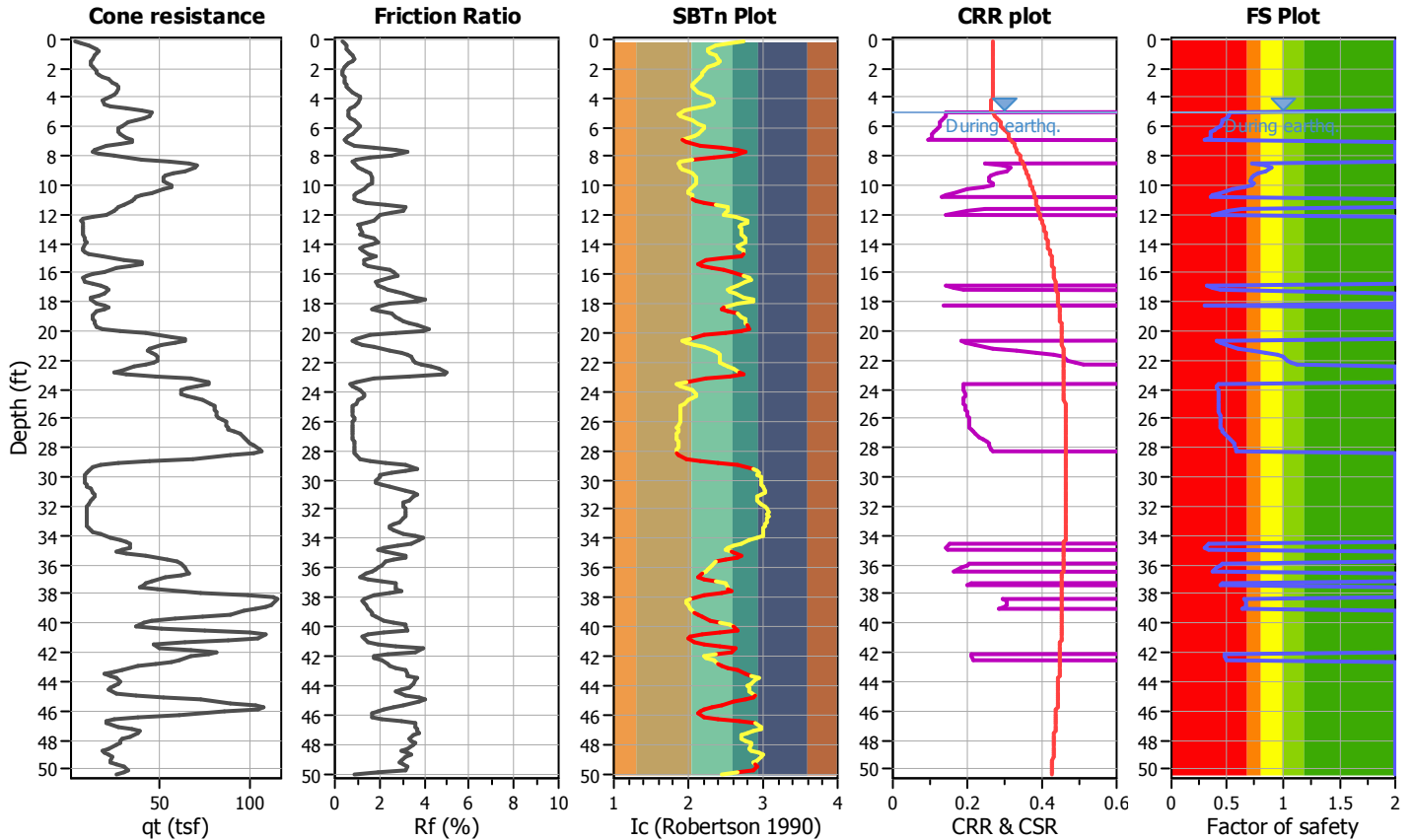
Project title : Shea Properties/Cypress

Location : Cypress, California

CPT file : CPT-12

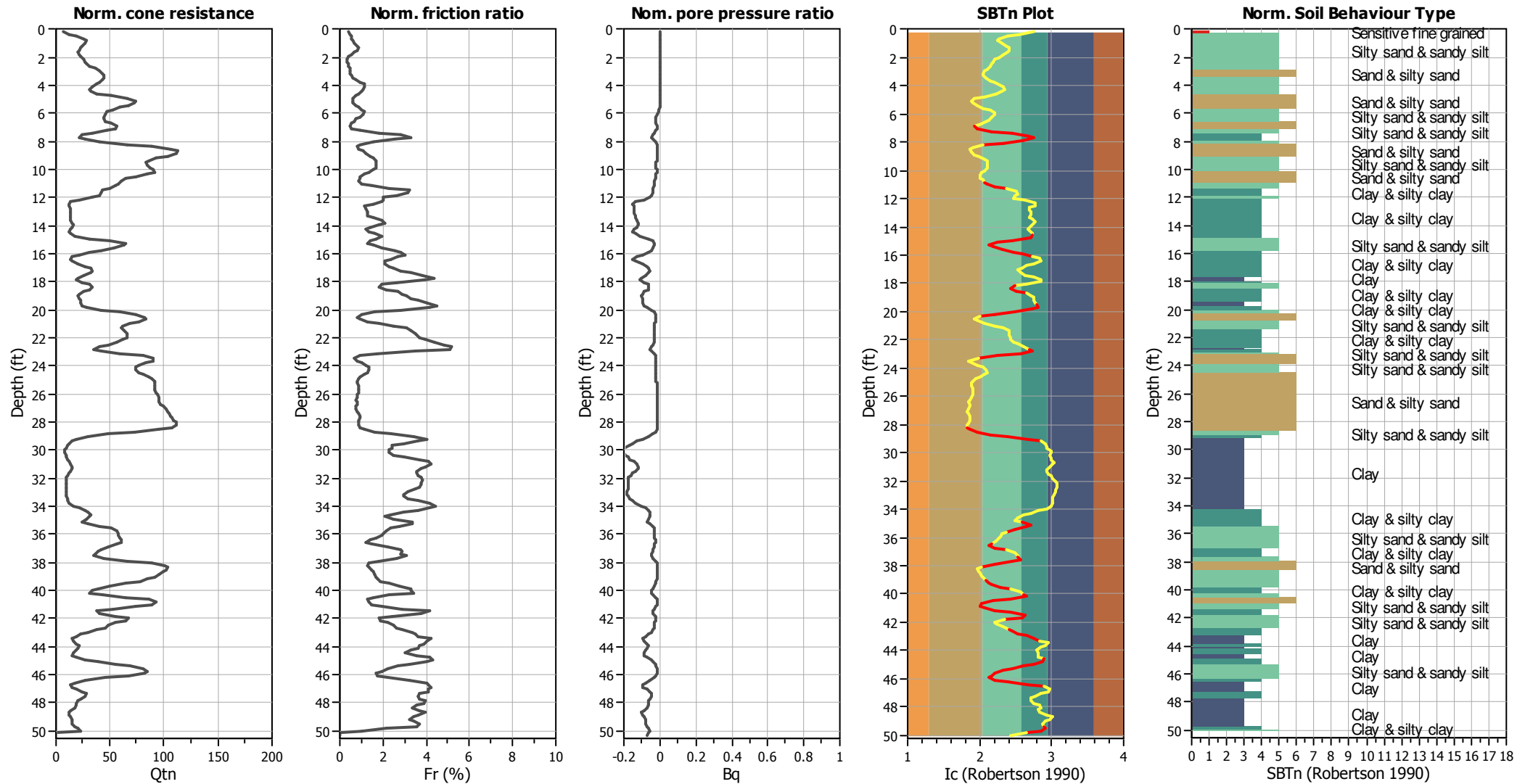
### Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior	
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	applied:	Sands only
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	No
Earthquake magnitude $M_w$ :	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	N/A
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	$K_0$ applied:	Yes	MSF method:	Method based



Zone A<sub>1</sub>: Cyclic liquefaction likely depending on size and duration of cyclic loading  
Zone A<sub>2</sub>: Cyclic liquefaction and strength loss likely depending on loading and ground geometry  
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening  
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

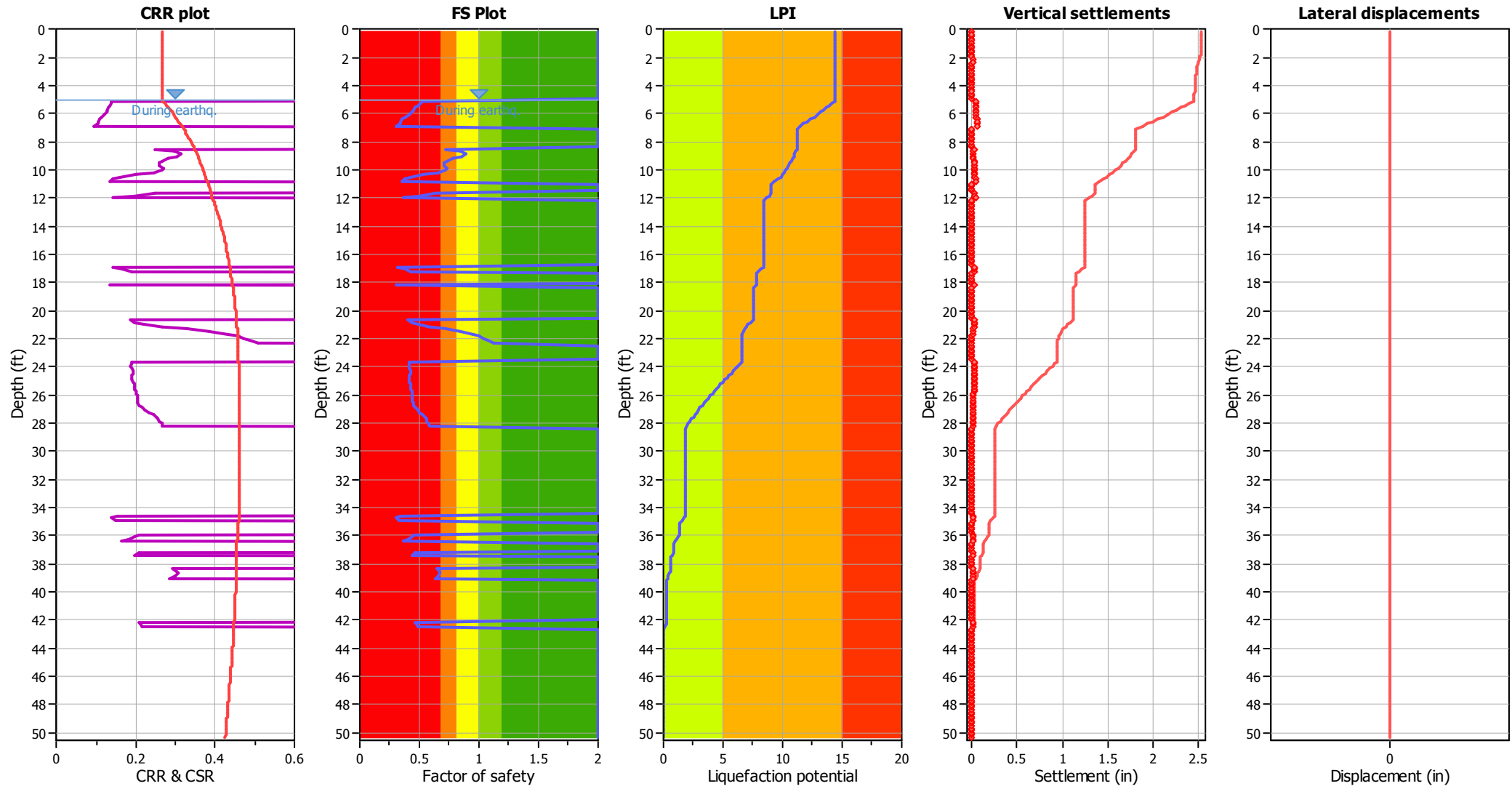
## CPT basic interpretation plots (normalized)



## Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K <sub>o</sub> applied:	Yes
Earthquake magnitude M <sub>w</sub> :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

## Liquefaction analysis overall plots



### Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (earthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	$K_{\sigma}$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A

### F.S. color scheme

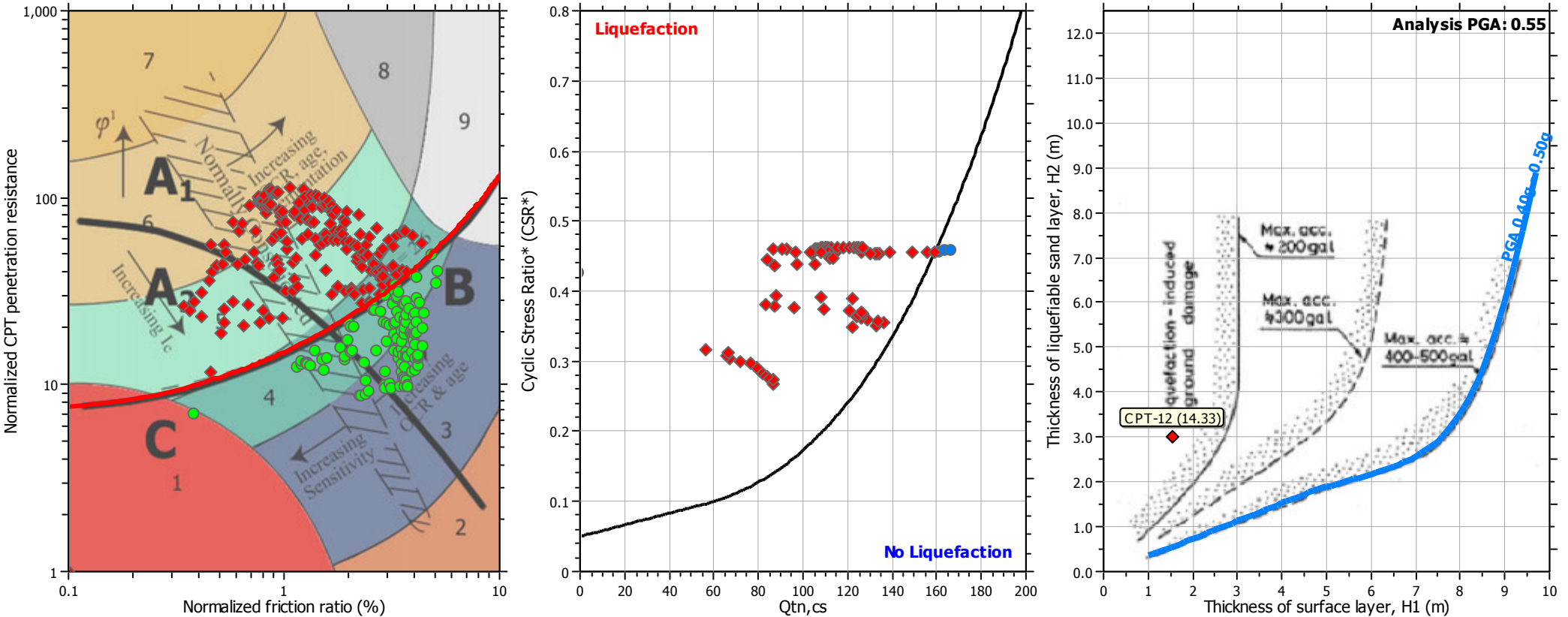
<span style="color: red;">■</span>	Almost certain it will liquefy
<span style="color: orange;">■</span>	Very likely to liquefy
<span style="color: yellow;">■</span>	Liquefaction and no liq. are equally likely
<span style="color: lightgreen;">■</span>	Unlike to liquefy
<span style="color: green;">■</span>	Almost certain it will not liquefy

### LPI color scheme

<span style="color: red;">■</span>	Very high risk
<span style="color: orange;">■</span>	High risk
<span style="color: yellow;">■</span>	Low risk



Liquefaction analysis summary plots

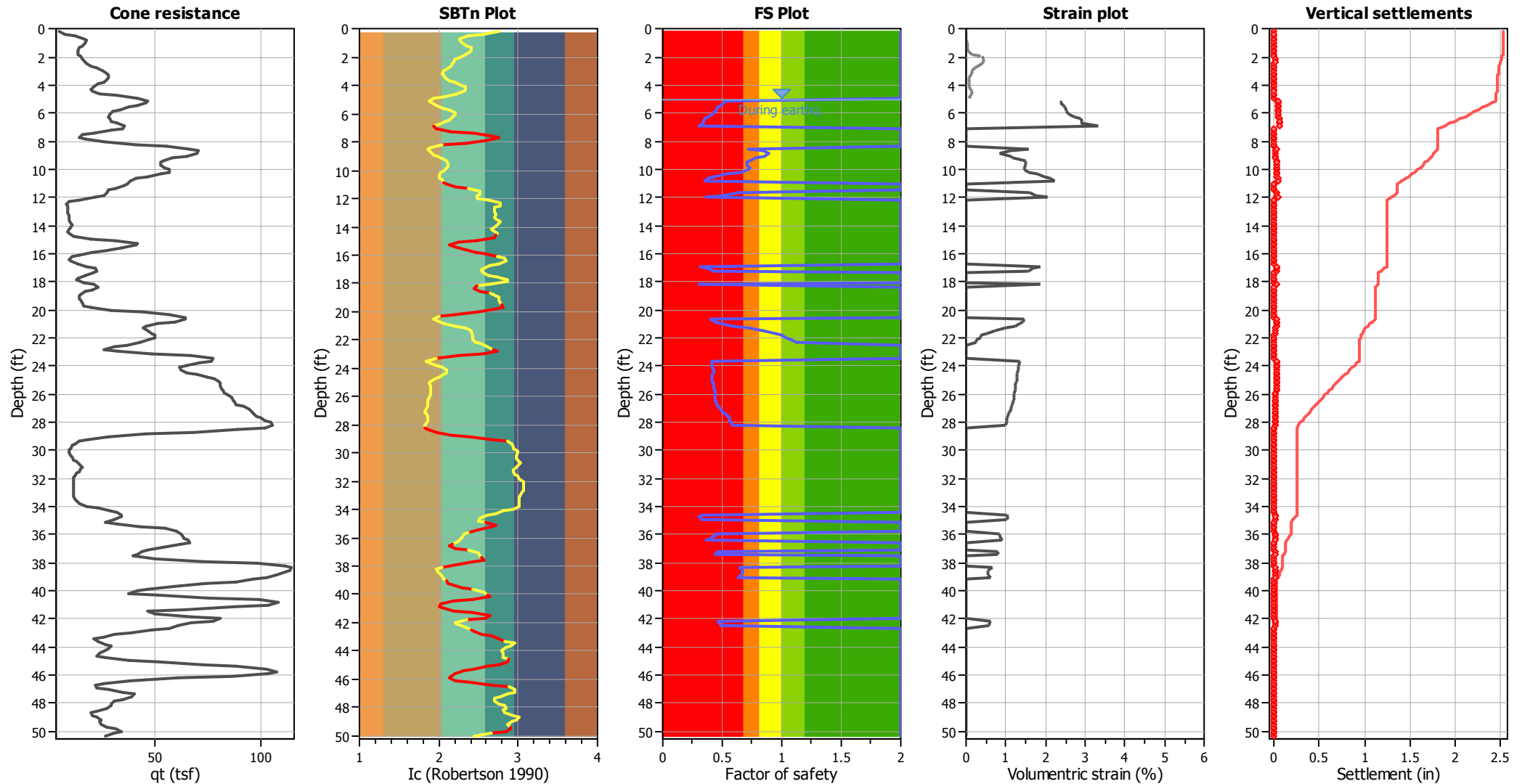


Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on $I_c$ value	$I_c$ cut-off value:	2.60	$K_g$ applied:	Yes
Earthquake magnitude $M_w$ :	6.70	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	5.00 ft	Fill height:	N/A	Limit depth:	N/A



## Estimation of post-earthquake settlements

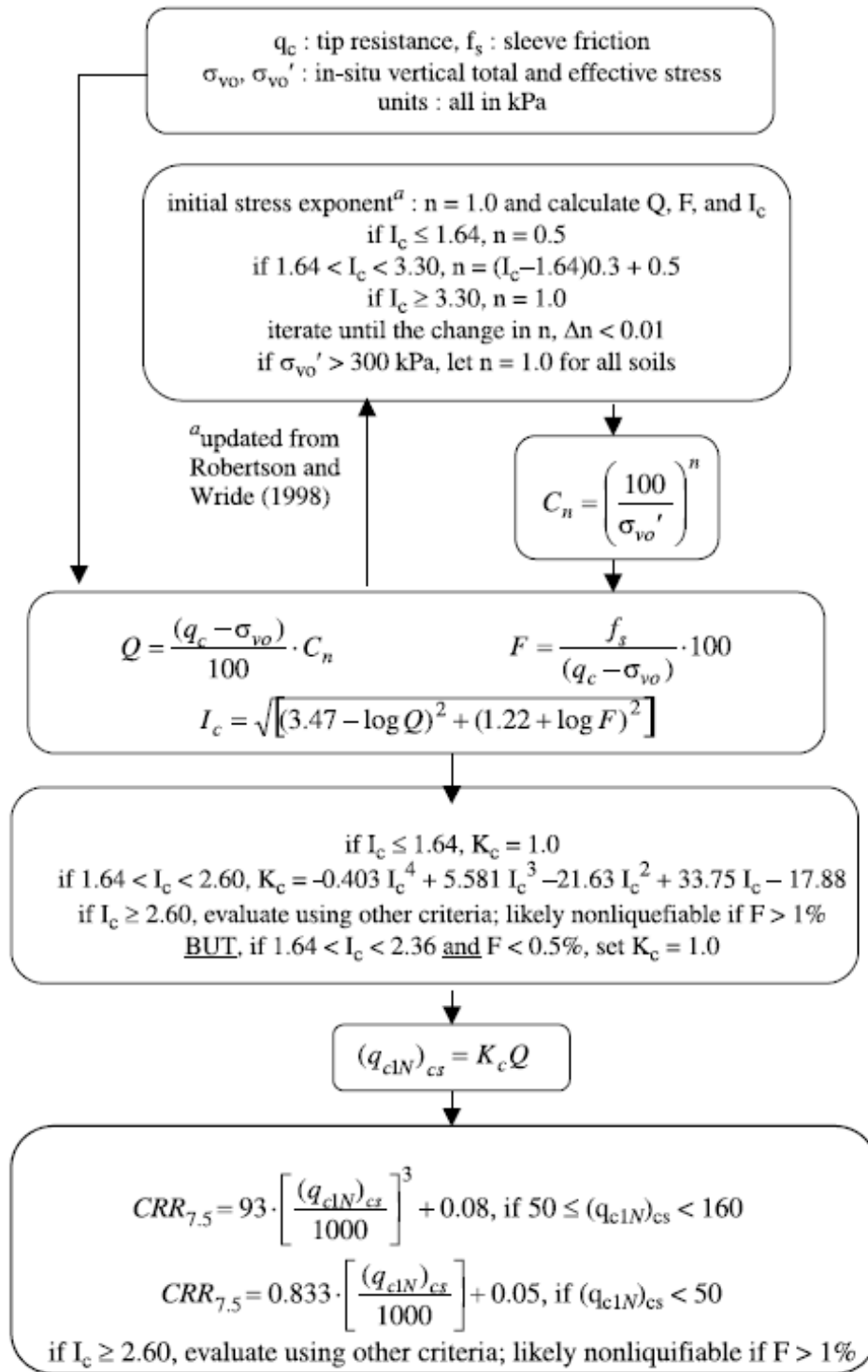


### Abbreviations

$q_t$ : Total cone resistance (cone resistance  $q_c$  corrected for pore water effects)  
 $I_c$ : Soil Behaviour Type Index  
 FS: Calculated Factor of Safety against liquefaction  
 Volumetric strain: Post-liquefaction volumetric strain

## Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

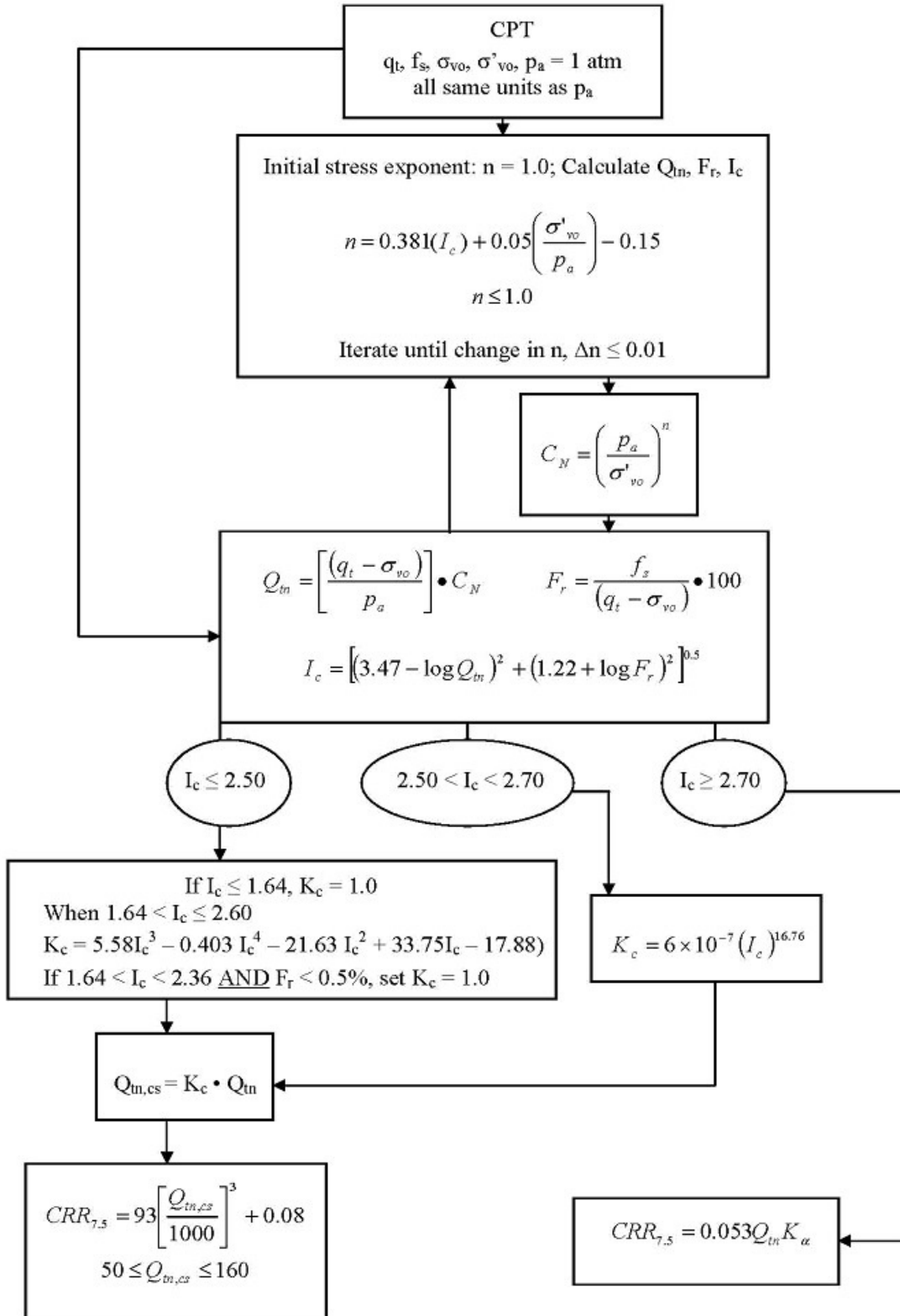
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart<sup>1</sup>:



<sup>1</sup> "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

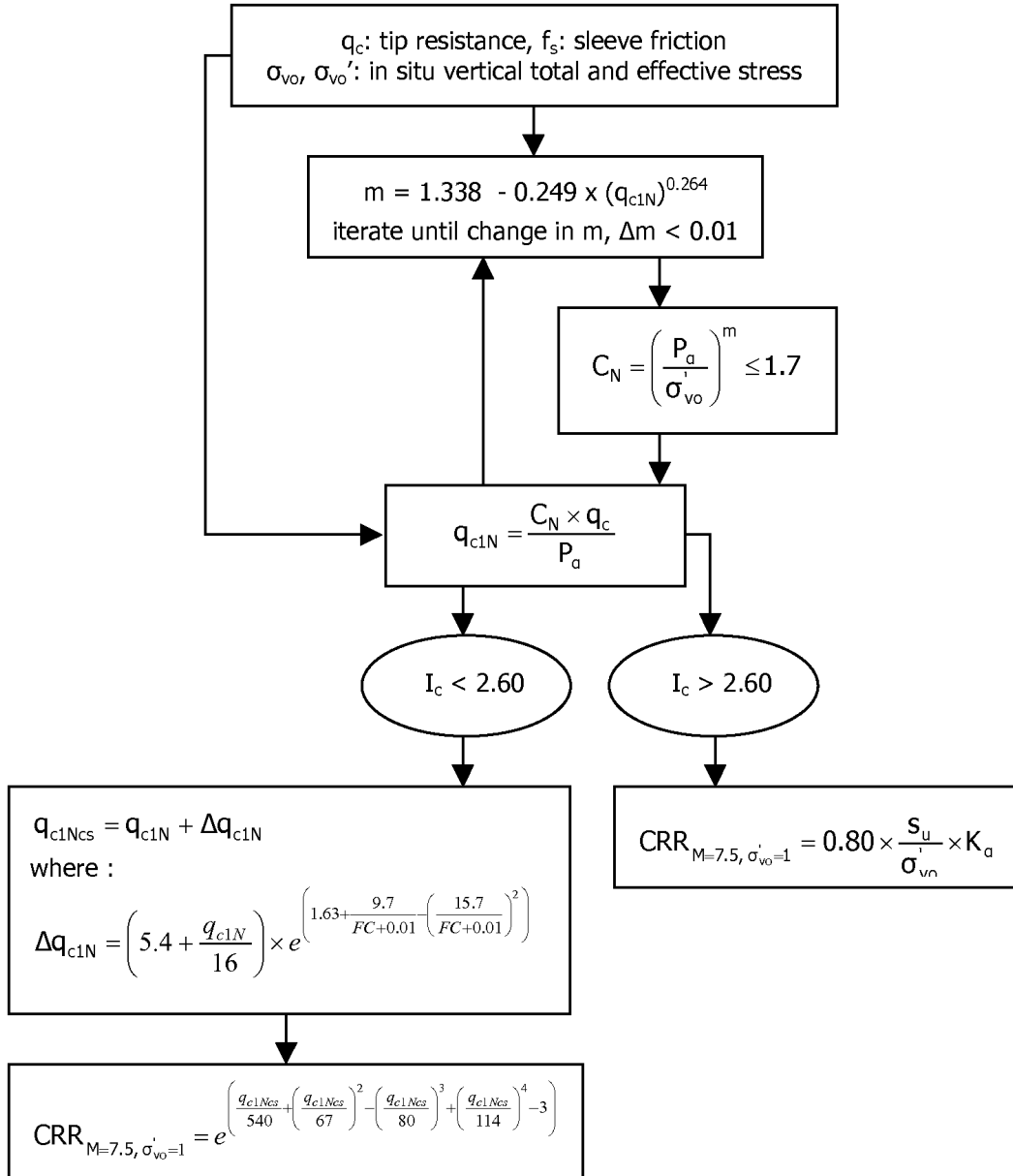
## Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart<sup>1</sup>:

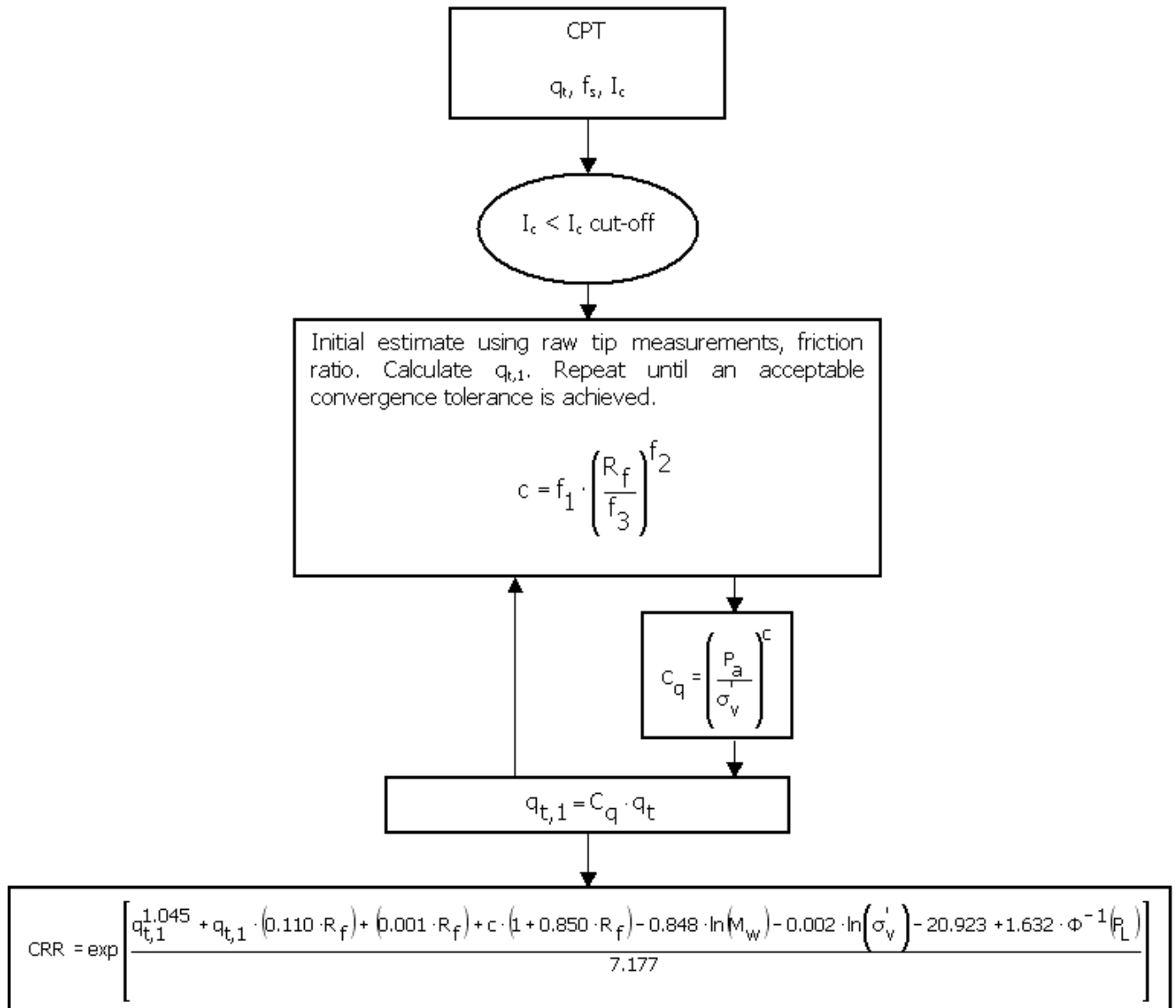


<sup>1</sup> P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

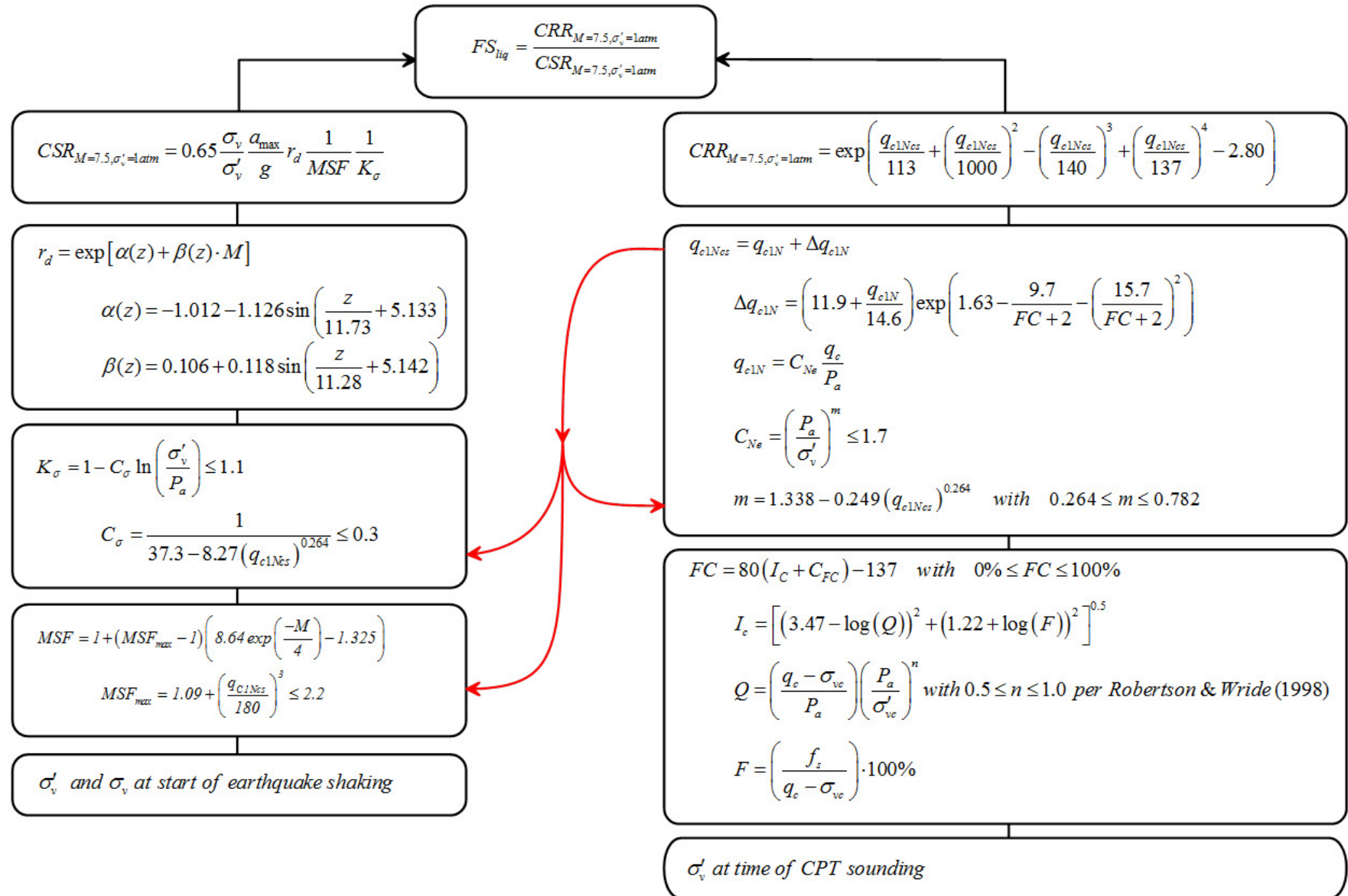
**Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)**



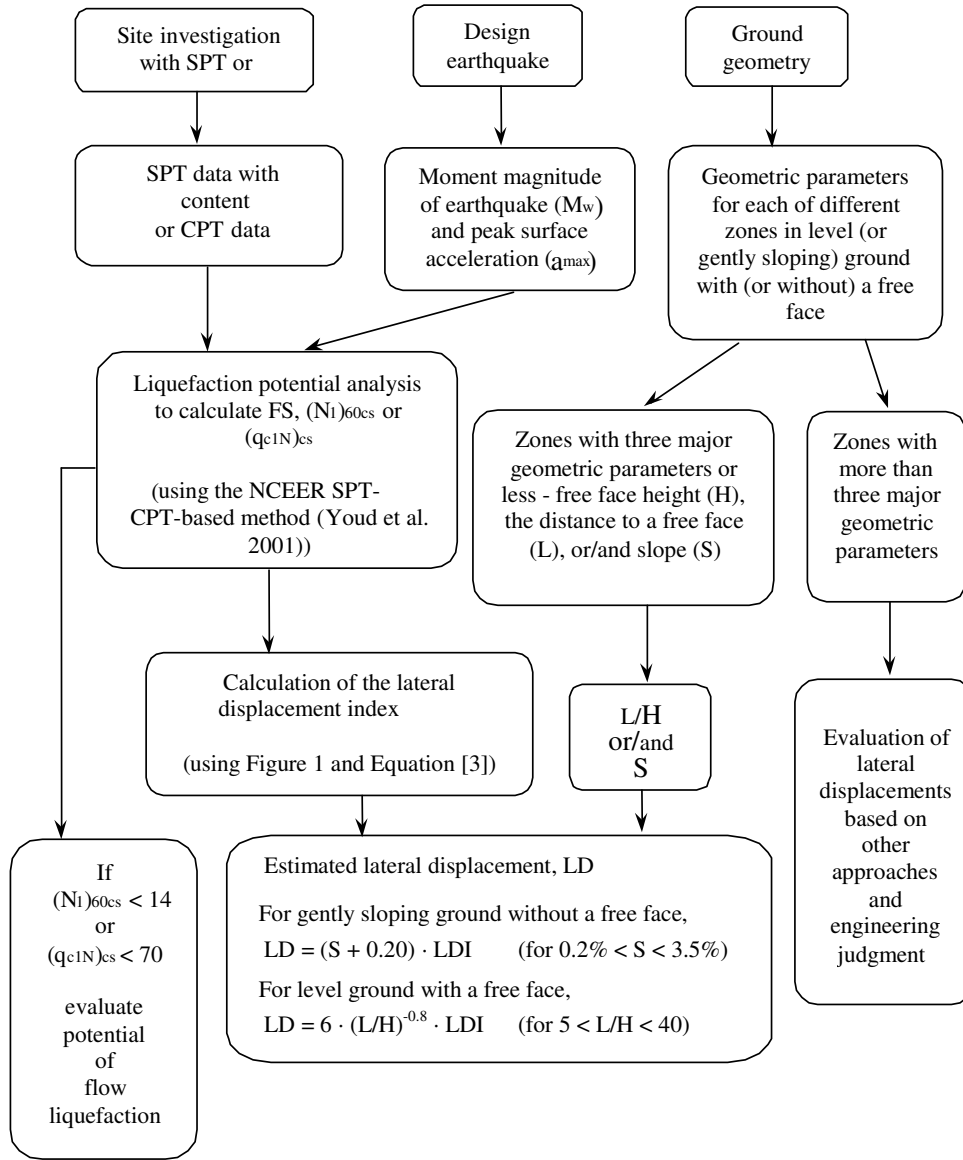
**Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)**



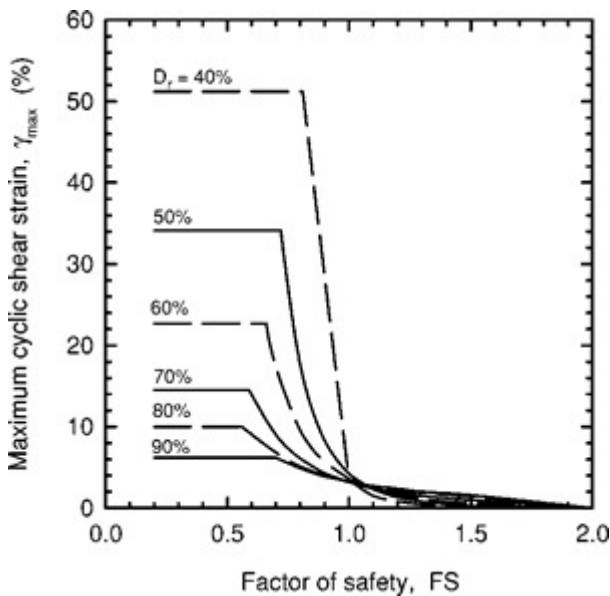
**Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)**



## Procedure for the evaluation of liquefaction-induced lateral spreading displacements



<sup>1</sup> Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



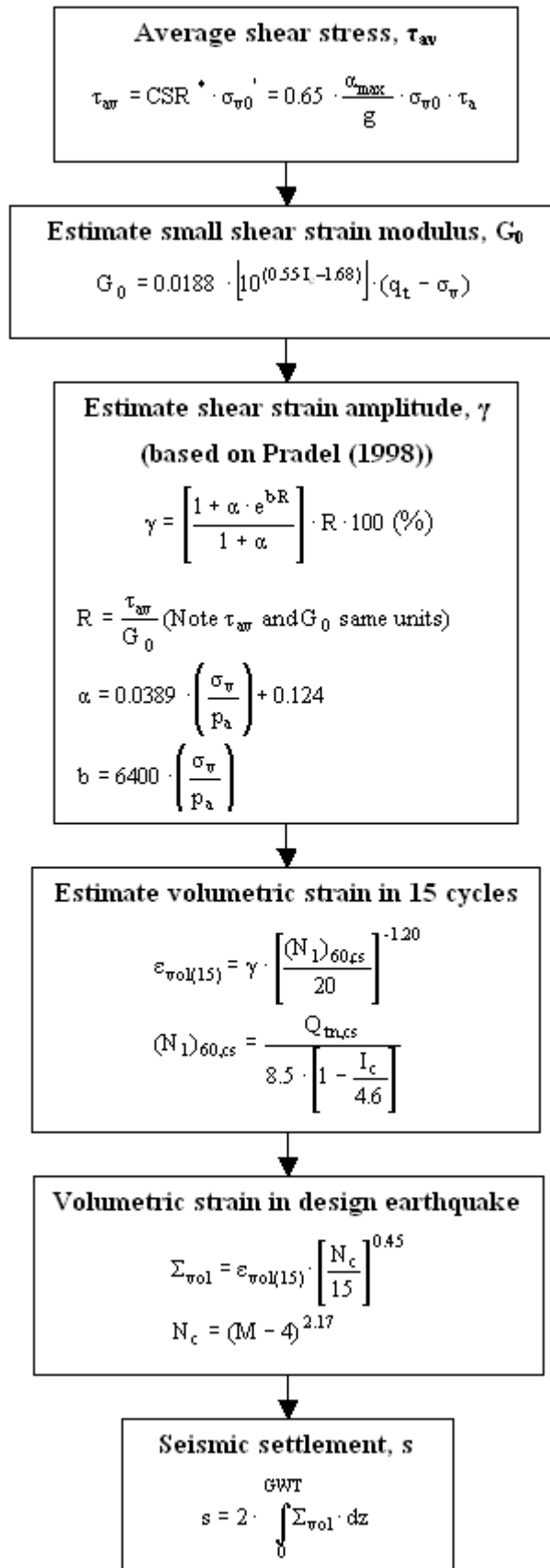
<sup>1</sup> Figure 1

$$LDI = \int_0^{Z_{max}} \gamma_{max} dz$$

<sup>1</sup> Equation [3]

<sup>1</sup> "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

## Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA



## Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methodology developed by Iwasaki (1982) and is adopted by AFPS.

To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$LPI = \int_0^{20} (10 - 0.5z) \times F_L \times dz$$

where:

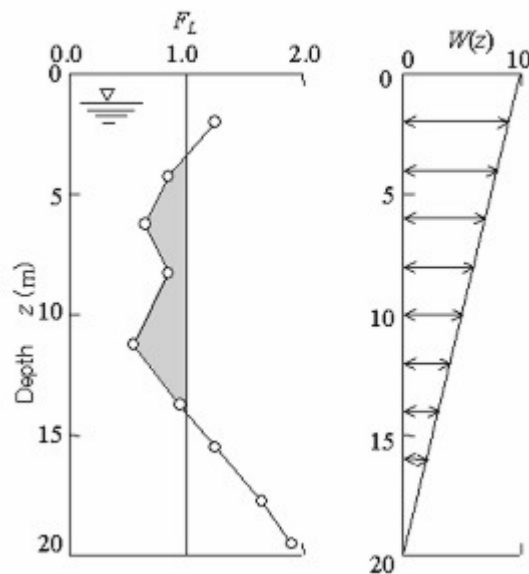
$F_L = 1 - F.S.$  when F.S. less than 1

$F_L = 0$  when F.S. greater than 1

$z$  depth of measurement in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- $LPI = 0$  : Liquefaction risk is very low
- $0 < LPI \leq 5$  : Liquefaction risk is low
- $5 < LPI \leq 15$  : Liquefaction risk is high
- $LPI > 15$  : Liquefaction risk is very high



**Graphical presentation of the LPI calculation procedure**

## Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$\begin{aligned} \ln(D_s) = & c_1 + c_2 * LBS + 0.58 * \ln\left(\tanh\left(\frac{HL}{6}\right)\right) + \\ & 4.59 * \ln(Q) - 0.42 * \ln(Q)^2 - 0.02 * B + \\ & 0.84 * \ln(CAV_{dp}) + 0.41 * \ln(Sa_1) + \varepsilon \end{aligned}$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε<sub>shear</sub>) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

## References

- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.
- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652
- Boulanger, R.W. and Idriss, I. M., 2014. CPT AND SPT BASED LIQUEFACTION TRIGGERING PROCEDURES. DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING COLLEGE OF ENGINEERING UNIVERSITY OF CALIFORNIA AT DAVIS
- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at <http://www.geologismiki.gr/>
- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.
- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.
- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833
- Zhang, G., Robertson, P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180
- Zhang, G., Robertson, P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871
- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368
- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70
- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104
- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355
- P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering - from case history to practice, IS-Tokyo, June 2009
- Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss*, SAN diego, CA
- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006
- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

# ATTACHMENT D

GROUNDWATER FEASIBILITY

A layer of medium dense, fine silty sand was found in all exploration locations below the fills, down to a depth ranging from 7 to 9 feet. Based on grain size analyses, the silt (fines) content of the majority of this layer is in the range of 13 to 47 percent. Cleaner sands with lower silt content and sandy silts with higher silt content were found within thinner interbeds within this layer. The moisture content of these materials was found to be in the range of 14 to 26 percent, well above optimum.

A thin layer of compressible silty clay was found in most subsurface explorations, below the silty sand layer. The thickness of this compressible clay layer was limited to 1 to 2 feet.

A layer of sandy silt was found at all exploration locations down to depths ranging from 11 feet to 13 feet. This material can be characterized as medium dense and stiff to very stiff.

The soil profile below a depth of 11 to 13 feet and extending down to a depth of 32 to 35 feet consists mostly of relatively compressible, firm to stiff clays, interbedded with silty sands and sandy silts of variable thickness. The sandy soils are medium dense.

A layer of medium dense to very dense silty sand was found at all exploration locations below depths of 32 to 35 feet. The thickness of this layer was on the order of 7 feet.

Very stiff to hard clays and silts, and dense sands underlie the dense sand layer.

### **3.4 GROUNDWATER LEVELS**

At the time of our field investigation (July 2008), groundwater levels were detected in the borings at approximate depths of 5 to 6 feet below the ground surface. In two groundwater monitoring wells, installed during a previous geotechnical investigation, the depth to groundwater ranged from 4.6 feet in the northern parts of the site (MW-1 in Figure 2) to 6.0 feet in the southeastern parts of the site (MW-2). These depths correspond to a water surface elevation of +27 to +27.5 feet. The observed water levels are generally consistent with the "historically Highest Groundwater" levels published by the State of California for the site area (Reference 1).

**Worksheet I: Summary of Groundwater-related Feasibility Criteria**

1	Is project large or small? (as defined by <a href="#">Table VIII.2</a> ) circle one	<div>Large</div>	Small	
2	What is the tributary area to the BMP?	A	13.33	acres
3	What type of BMP is proposed?			
4	What is the infiltrating surface area of the proposed BMP?	A <sub>BMP</sub>		sq-ft
5	What land use activities are present in the tributary area (list all)			
6	What land use-based risk category is applicable?	L	M	H
7	If M or H, what pretreatment and source isolation BMPs have been considered and are proposed (describe all):			
8	What minimum separation to mounded seasonally high groundwater applies to the proposed BMP? See Section <a href="#">VIII.2</a> (circle one)	5 ft		10 ft
9	Provide rationale for selection of applicable minimum separation to seasonally high mounded groundwater:			
10	What is separation from the infiltrating surface to seasonally high groundwater?	SHGWT		ft
11	What is separation from the infiltrating surface to mounded seasonally high groundwater?	Mounded SHGWT		ft
12	Describe assumptions and methods used for mounding analysis:			
13	Is the site within a plume protection boundary (See <a href="#">Figure</a>	Y	N	N/A

**Worksheet I: Summary of Groundwater-related Feasibility Criteria**

	<b>VIII.2)?</b>	
14	Is the site within a selenium source area or other natural plume area (See <b>Figure VIII.2</b> )?	Y      N      N/A
15	Is the site within 250 feet of a contaminated site?	Y      N      N/A
16	If site-specific study has been prepared, provide citation and briefly summarize relevant findings:	
17	Is the site within 100 feet of a water supply well, spring, septic system?	Y      N      N/A
18	Is infiltration feasible on the site relative to groundwater-related criteria?	Y      N
Provide rationale for feasibility determination:  The historic high groundwater is less than 5 feet below ground surface. The depth to seasonal high groundwater table beneath the project falls within the normal high range and precludes infiltration.		

Note: if a single criterion or group of criteria would render infiltration infeasible, it is not necessary to evaluate every question in this worksheet.

# ATTACHMENT E

## CALCULATIONS



## Worksheet B: Simple Design Capture Volume Sizing Method

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, $d$ (inches)	$d=$	0.85	inches
2	Enter the effect of provided HSCs, $d_{HSC}$ (inches) (Worksheet A)	$d_{HSC}=$	0.0	inches
3	Calculate the remainder of the design capture storm depth, $d_{remainder}$ (inches) (Line 1 – Line 2)	$d_{remainder}=$	0.85	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), $A$ (acres)	$A=$	13.33	acres
2	Enter Project Imperviousness, $imp$ (unitless)	$imp=$	0.90	
3	Calculate runoff coefficient, $C= (0.75 \times imp) + 0.15$	$C=$	0.825	
4	Calculate runoff volume, $V_{design}= (C \times d_{remainder} \times A \times 43560 \times (1/12))$	$V_{design}=$	17,000	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
				Note: 50% credit see section IV.4.1
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{observed}^1$ (in/hr) (Appendix VII)	$K_{observed}=$	N/A	In/hr
2	Enter combined safety factor from Worksheet H, $S_{total}$ (unitless)	$S_{total}=$	N/A	
3	Calculate design infiltration rate, $K_{design} = K_{observed} / S_{total}$	$K_{design}=$	N/A	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, $T$ (max 48 hours)	$T=$	N/A	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time (feet), $D_{max} = K_{design} \times T \times (1/12)$	$D_{max}=$	N/A	feet
6	Calculate minimum area required for BMP (sq-ft), $A_{min} = V_{design} / d_{max}$	$A_{min}=$	N/A	sq-ft

<sup>1</sup> $K_{observed}$  is the vertical infiltration measured in the field, before applying a factor of safety. If field testing measures a rate that is different than the vertical infiltration rate (for example, three-dimensional borehole percolation rate), then this rate must be adjusted by an acceptable method (for example, Porchet method) to yield the field estimate of vertical infiltration rate,  $K_{observed}$ . See Appendix VII.

Note: Proposed modular wetland is designed to draw down the DCV over a 48 hour period. See Modular Wetland treatment capacity chart in Appendix E

Table X.8: Minimum Irrigated Area for Potential Partial Capture Feasibility

General Landscape Type	Conservation Design: $K_L = 0.35$			Active Turf Areas: $K_L = 0.7$		
<i>Closest ET Station</i>	<i>Irvine</i>	<i>Santa Ana</i>	<i>Laguna</i>	<i>Irvine</i>	<i>Santa Ana</i>	<i>Laguna</i>
Design Capture Storm Depth, inches	Minimum Required Irrigated Area per Tributary Impervious Acre for Potential Partial Capture, ac/ac					
0.60	0.66	0.68	0.72	0.33	0.34	0.36
0.65	0.72	0.73	0.78	0.36	0.37	0.39
0.70	0.77	0.79	0.84	0.39	0.39	0.42
0.75	0.83	0.84	0.90	0.41	0.42	0.45
0.80	0.88	0.90	0.96	0.44	0.45	0.48
0.85	0.93	0.95	1.02	0.47	0.48	0.51
0.90	0.99	1.01	1.08	0.49	0.51	0.54
0.95	1.04	1.07	1.14	0.52	0.53	0.57
1.00	1.10	1.12	1.20	0.55	0.56	0.60

Worksheet J: Summary of Harvested Water Demand and Feasibility

1	What demands for harvested water exist in the tributary area (check all that apply):			
2	Toilet and urinal flushing	<input checked="" type="checkbox"/>		
3	Landscape irrigation	<input checked="" type="checkbox"/>		
4	Other: _____	<input type="checkbox"/>		
5	What is the design capture storm depth? (Figure III.1)	d	0.85	inches
6	What is the project size?	A	13.33	ac
7	What is the acreage of impervious area?	IA	12.00	ac
For projects with multiple types of demand (toilet flushing, indoor demand, and/or other demand)				
8	What is the minimum use required for partial capture? (Table X.6)			gpd
9	What is the project estimated wet season total daily use?			gpd
10	Is partial capture potentially feasible? (Line 9 > Line 8?)			
For projects with only toilet flushing demand				
11	What is the minimum TUTIA for partial capture? (Table X.7)		121/AC (average across site)	
12	What is the project estimated TUTIA?		50/AC	

**Worksheet J: Summary of Harvested Water Demand and Feasibility**

13	Is partial capture potentially feasible? (Line 12 > Line 11?)	No	
For projects with only irrigation demand			
14	What is the minimum irrigation area required based on conservation landscape design? ( <a href="#">Table X.8</a> )	11.4	ac
15	What is the proposed project irrigated area? (multiply conservation landscaping by 1; multiply active turf by 2)	1.3	ac
16	Is partial capture potentially feasible? (Line 15 > Line 14?)	No	
<p>Provide supporting assumptions and citations for controlling demand calculation:</p> <p>Site does not have enough toilets or landscape area to support harvested water BMPs</p>			

## Cypress Mixed Use

### WQMP Flow Rate and Volume Calculations

DMA ID	% Impervious	A (acres)	C	I (in/hr)	Adj Volume (cubic feet)	Selected Modular Wetland	Modular Wetland Treatment Volume
DMA 1	90%	13.33	0.83	0.26	17,000	MWS-L-8-16	20,145

Note: The Cypress Mixed use development is eligible for a water quality Credit of 50%, per the Model WQMP pg. 7.II 3-5-3-5. This development meets the higher density development, mixed use development, and in-fill development requirements.

# SPECIFICATIONS

## VOLUME-BASED

Many states require treatment of a water quality volume and do not offer the option of flow-based design. The MWS Linear and its unique horizontal flow makes it the only biofilter that can be used in volume-based design installed downstream of ponds, detention basins, and underground storage systems.

MODEL #	TREATMENT CAPACITY (cu. ft.) @ 24-HOUR DRAINDOWN	TREATMENT CAPACITY (cu. ft.) @ 48-HOUR DRAINDOWN
MWS-L-4-4	1140	2280
MWS-L-4-6	1600	3200
MWS-L-4-8	2518	5036
MWS-L-4-13	3131	6261
MWS-L-4-15	3811	7623
MWS-L-4-17	4492	8984
MWS-L-4-19	5172	10345
MWS-L-4-21	5853	11706
MWS-L-6-8	3191	6382
MWS-L-8-8	5036	10072
MWS-L-8-12	7554	15109
MWS-L-8-16	10073	20145
MWS-L-8-20	12560	25120
MWS-L-8-24	15108	30216

# ATTACHMENT F

EDUCATION MATERIALS

# **LIST OF EDUCATION MATERIALS PROVIDED**

1. THE OCEAN BEGINS AT YOUR FRONT DOOR
2. PROPER MAINTENANCE PRACTICES FOR YOUR BUSINESS
3. TIPS FOR LANDSCAPE & GARDENING
4. TIPS FOR PEST CONTROL
5. LANDSCAPE MAINTENANCE
6. SC-10: NON-STORMWATER DISCHARGE
7. SC-30: OUTDOOR LOADING/UNLOADING
8. SC-34: WASTE HANDLING & DISPOSAL
9. SC-41: BUILDING & GROUNDS MAINTENANCE
10. SC-43: PARKING/STORAGE AREA MAINTENANCE
11. SC-44: DRAINAGE SYSTEM MAINTENANCE
12. SC-70: ROAD AND STREET MAINTENANCE
13. SD-10: SITE DESIGN & LANDSCAPE PLANNING
14. SD-12: EFFICIENT IRRIGATION
15. SD-13: STORM DRAIN SIGNAGE
16. SD-32: TRASH STORAGE AREAS
17. SD-34: OUTDOOR MATERIAL STORAGE AREAS
18. FILTERRA PRODUCT INFORMATION

# The Ocean Begins at Your Front Door



PROJECT  
**Pollution**  
PREVENTION



Follow these simple steps to help reduce water pollution:

### *Household Activities*

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in the trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste Collection Center (HHWCC).
- For a HHWCC near you call (714) 834-6752 or visit [www.oclandfills.com](http://www.oclandfills.com).
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of it in the trash.

### *Automotive*

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate-free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing to drain into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor your vehicles for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit [www.1800cleanup.org](http://www.1800cleanup.org).

### *Pool Maintenance*

- Pool and spa water must be dechlorinated and free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- When it is not raining, drain dechlorinated pool and spa water directly into the sanitary sewer.
- Some cities may have ordinances that do not allow pool water to be disposed of in the storm drain. Check with your city.

### *Landscape and Gardening*

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Take unwanted pesticides to a HHWCC to be recycled. For locations and hours of HHWCC, call (714) 834-6752 or visit [www.oclandfills.com](http://www.oclandfills.com).

### *Trash*

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle.

### *Pet Care*

- Always pick up after your pet. Flush waste down the toilet or dispose of it in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a HHWCC.

### *Common Pollutants*

#### *Home Maintenance*

- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

#### *Lawn and Garden*

- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

#### *Automobile*

- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust



# The Ocean Begins at Your Front Door



*Never allow pollutants to enter the street, gutter or storm drain!*



## Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution is sometimes called “non-point source” pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff results from rainfall. When rainstorms cause large volumes of water to rinse the urban landscape, picking up pollutants along the way.
- Urban runoff can happen any time of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

## Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets), water in storm drains is not treated before entering our waterways.

## Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.



## The Effect on the Ocean



Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life

as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed throughout Orange County to educate and encourage the public to protect water quality, monitor runoff in the storm drain system, investigate illegal dumping and maintain storm drains.

Support from Orange County residents and businesses is needed to improve water quality and reduce urban runoff pollution. Proper use and disposal of materials will help stop pollution before it reaches the storm drain and the ocean.



# For More Information

## Orange County Stormwater Program

### California Environmental Protection Agency

[www.calepa.ca.gov](http://www.calepa.ca.gov)

- **Air Resources Board**  
[www.arb.ca.gov](http://www.arb.ca.gov)
- **Department of Pesticide Regulation**  
[www.cdpr.ca.gov](http://www.cdpr.ca.gov)
- **Department of Toxic Substances Control**  
[www.dtsc.ca.gov](http://www.dtsc.ca.gov)
- **Integrated Waste Management Board**  
[www.ciwmb.ca.gov](http://www.ciwmb.ca.gov)
- **Office of Environmental Health Hazard Assessment**  
[www.oehha.ca.gov](http://www.oehha.ca.gov)
- **State Water Resources Control Board**  
[www.waterboards.ca.gov](http://www.waterboards.ca.gov)

**Earth 911** - Community-Specific Environmental Information 1-800-cleanup or visit [www.1800cleanup.org](http://www.1800cleanup.org)

**Health Care Agency's Ocean and Bay Water Closure and Posting Hotline**  
(714) 433-6400 or visit [www.ocbeachinfo.com](http://www.ocbeachinfo.com)

**Integrated Waste Management Dept. of Orange County** (714) 834-6752 or visit [www.oclandfills.com](http://www.oclandfills.com) for information on household hazardous waste collection centers, recycling centers and solid waste collection

**O.C. Agriculture Commissioner**  
(714) 447-7100 or visit [www.ocagcomm.com](http://www.ocagcomm.com)

**Stormwater Best Management Practice Handbook**  
Visit [www.cabmphandbooks.com](http://www.cabmphandbooks.com)

**UC Master Gardener Hotline**  
(714) 708-1646 or visit [www.uccemg.com](http://www.uccemg.com)

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to [ocstormwaterinfo-join@list.ocwatersheds.com](mailto:ocstormwaterinfo-join@list.ocwatersheds.com)

Aliso Viejo . . . . .	(949)	425-2535
Anaheim Public Works Operations . . . . .	(714)	765-6860
Brea Engineering. . . . .	(714)	990-7666
Buena Park Public Works . . . . .	(714)	562-3655
Costa Mesa Public Services. . . . .	(714)	754-5323
Cypress Public Works. . . . .	(714)	229-6740
Dana Point Public Works. . . . .	(949)	248-3584
Fountain Valley Public Works . . . . .	(714)	593-4441
Fullerton Engineering Dept.. . . . .	(714)	738-6853
Garden Grove Public Works . . . . .	(714)	741-5956
Huntington Beach Public Works . . . . .	(714)	536-5431
Irvine Public Works. . . . .	(949)	724-6315
La Habra Public Services. . . . .	(562)	905-9792
La Palma Public Works . . . . .	(714)	690-3310
Laguna Beach Water Quality. . . . .	(949)	497-0378
Laguna Hills Public Services . . . . .	(949)	707-2650
Laguna Niguel Public Works . . . . .	(949)	362-4337
Laguna Woods Public Works. . . . .	(949)	639-0500
Lake Forest Public Works . . . . .	(949)	461-3480
Los Alamitos Community Dev.. . . . .	(562)	431-3538
Mission Viejo Public Works . . . . .	(949)	470-3056
Newport Beach, Code & Water		
Quality Enforcement . . . . .	(949)	644-3215
Orange Public Works. . . . .	(714)	532-6480
Placentia Public Works . . . . .	(714)	993-8245
Rancho Santa Margarita . . . . .	(949)	635-1800
San Clemente Environmental Programs . . . . .	(949)	361-6143
San Juan Capistrano Engineering . . . . .	(949)	234-4413
Santa Ana Public Works . . . . .	(714)	647-3380
Seal Beach Engineering . . . . .	(562)	431-2527 x317
Stanton Public Works. . . . .	(714)	379-9222 x204
Tustin Public Works/Engineering . . . . .	(714)	573-3150
Villa Park Engineering . . . . .	(714)	998-1500
Westminster Public Works/Engineering . . . . .	(714)	898-3311 x446
Yorba Linda Engineering . . . . .	(714)	961-7138
Orange County Stormwater Program . . . . .	(877)	897-7455
Orange County 24-Hour		
Water Pollution Problem Reporting Hotline		
1-877-89-SPILL (1-877-897-7455)		

On-line Water Pollution Problem Reporting Form

[www.ocwatersheds.com](http://www.ocwatersheds.com)





***Preventing water  
pollution at your  
commercial/industrial site***

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many landscape and building maintenance activities can lead to water pollution if you're not careful. Paint, chemicals, plant clippings and other materials can be blown or washed into storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour soap or fertilizers into the ocean, so why would you let them enter the storm drains? Follow these easy tips to help prevent water pollution.

Some types of industrial facilities are required to obtain coverage under the State General Industrial Permit. For more information visit: [www.swrcb.ca.gov/stormwater/industrial.html](http://www.swrcb.ca.gov/stormwater/industrial.html)



For more information,  
please call the  
**Orange County Stormwater Program**  
at **1-877-89-SPILL** (1-877-897-7455)  
or visit  
**[www.ocwatersheds.com](http://www.ocwatersheds.com)**

To report a spill,  
call the  
**Orange County 24-Hour  
Water Pollution Problem  
Reporting Hotline**  
at **1-877-89-SPILL** (1-877-897-7455).

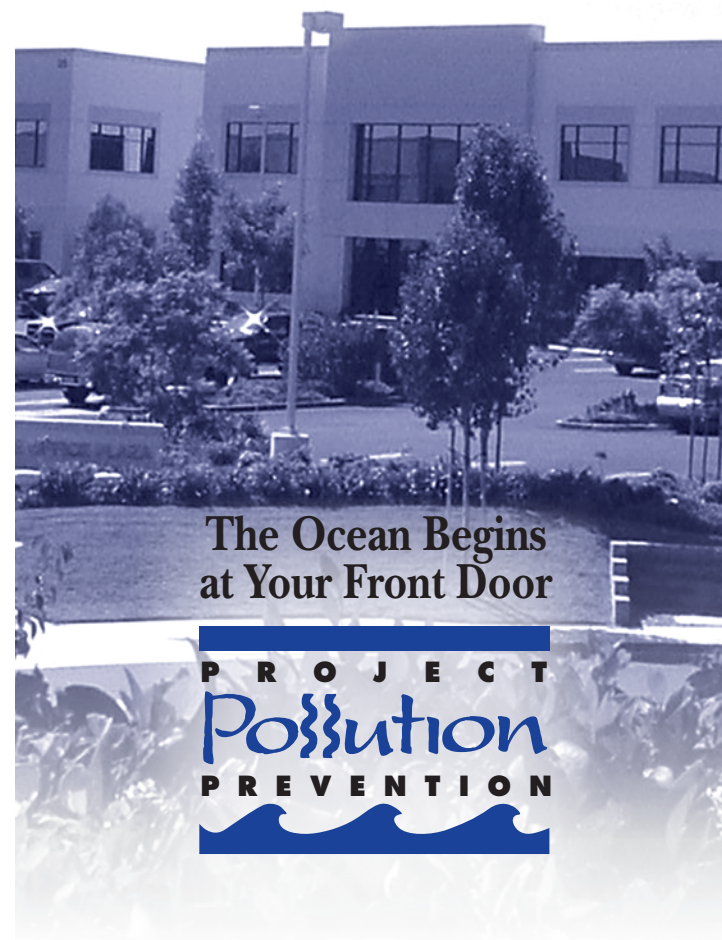
**For emergencies, dial 911.**



Printed on Recycled Paper

Help Prevent Ocean Pollution:

**Proper Maintenance  
Practices for  
Your Business**



**The Ocean Begins  
at Your Front Door**



# Proper Maintenance Practices for your Business

## *Landscape Maintenance*

- Compost grass clippings, leaves, sticks and other vegetation, or dispose of it at a permitted landfill or in green waste containers. Do not dispose of these materials in the street, gutter or storm drain.
- Irrigate slowly and inspect the system for leaks, overspraying and runoff. Adjust automatic timers to avoid overwatering.
- Follow label directions for the use and disposal of fertilizers and pesticides.
- Do not apply pesticides or fertilizers if rain is expected within 48 hours or if wind speeds are above 5 mph.
- Do not spray pesticides within 100 feet of waterways.
- Fertilizers should be worked into the soil rather than dumped onto the surface.
- If fertilizer is spilled on the pavement or sidewalk, sweep it up immediately and place it back in the container.

## *Building Maintenance*

- Never allow washwater, sweepings or sediment to enter the storm drain.
- Sweep up dry spills and use cat litter, towels or similar materials to absorb wet spills. Dispose of it in the trash.
- If you wash your building, sidewalk or parking lot, you **must** contain the water. Use a shop vac to collect the water and contact your city or sanitation agency for proper disposal information. Do not let water enter the street, gutter or storm drain.
- Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of materials in the trash.
- Use a ground cloth or oversized tub for mixing paint and cleaning tools.
- Use a damp mop or broom to clean floors.
- Cover dumpsters to keep insects, animals, rainwater and sand from entering. Keep the area around the dumpster clear of trash and debris. Do not overfill the dumpster.

- Call your trash hauler to replace leaking dumpsters.
- Do not dump any toxic substance or liquid waste on the pavement, the ground, or near a storm drain. Even materials that seem harmless such as latex paint or biodegradable cleaners can damage the environment.
- Recycle paints, solvents and other materials. For more information about recycling and collection centers, visit [www.oclandfills.com](http://www.oclandfills.com).
- Store materials indoors or under cover and away from storm drains.
- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry, carpet, plastic, pipes, drywall, rocks, dirt, and green waste. For a listing of construction and demolition recycling locations in your area, visit [www.ciwmb.ca.gov/recycle](http://www.ciwmb.ca.gov/recycle).
- Properly label materials. Familiarize employees with Material Safety Data Sheets.

NEVER DISPOSE  
OF ANYTHING  
IN THE STORM  
DRAIN.





**C**lean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,  
please call the  
**Orange County Stormwater Program**  
at **1-877-89-SPILL** (1-877-897-7455)  
or visit  
**[www.ocwatersheds.com](http://www.ocwatersheds.com)**

**UCCE Master Gardener Hotline:**  
**(714) 708-1646**

To report a spill,  
call the  
**Orange County 24-Hour  
Water Pollution Problem  
Reporting Hotline**  
**1-877-89-SPILL** (1-877-897-7455).

**For emergencies, dial 911.**

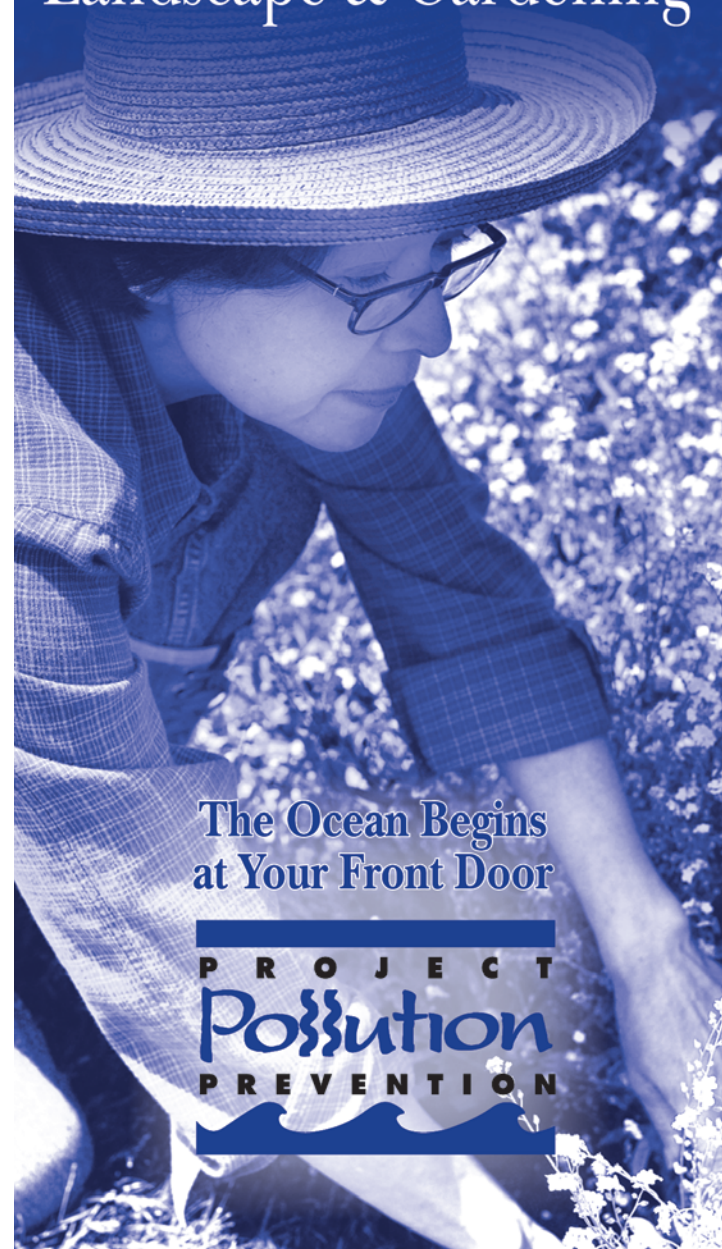
The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



Printed on Recycled Paper

Help Prevent Ocean Pollution:

## Tips for Landscape & Gardening



The Ocean Begins  
at Your Front Door



# Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

## *General Landscaping Tips*

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.



## *Garden & Lawn Maintenance*

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.



- Rinse empty pesticide containers and re-use rinse water as you would use the

product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.

- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu).
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

## Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit [www.oclandfills.com](http://www.oclandfills.com)





**C**lean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as pest control can lead to water pollution if you're not careful. Pesticide treatments must be planned and applied properly to ensure that pesticides do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump pesticides into the ocean, so don't let it enter the storm drains. Pesticides can cause significant damage to our environment if used improperly. If you are thinking of using a pesticide to control a pest, there are some important things to consider.

For more information,  
please call  
University of California Cooperative  
Extension Master Gardeners at  
(714) 708-1646  
or visit these Web sites:  
[www.uccemg.org](http://www.uccemg.org)  
[www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

For instructions on collecting a specimen  
sample visit the Orange County  
Agriculture Commissioner's website at:  
[http://www.ocagcomm.com/ser\\_lab.asp](http://www.ocagcomm.com/ser_lab.asp)

To report a spill, call the  
**Orange County 24-Hour  
Water Pollution Problem  
Reporting Hotline**  
at 1-877-89-SPILL (1-877-897-7455).

**For emergencies, dial 911.**

Information From:  
Cheryl Wilen, Area IPM Advisor; Darren Haver,  
Watershed Management Advisor; Mary  
Louise Flint, IPM Education and Publication  
Director; Pamela M. Geisel, Environmental  
Horticulture Advisor; Carolyn L. Unruh,  
University of California Cooperative  
Extension staff writer. Photos courtesy of  
the UC Statewide IPM Program and  
Darren Haver.

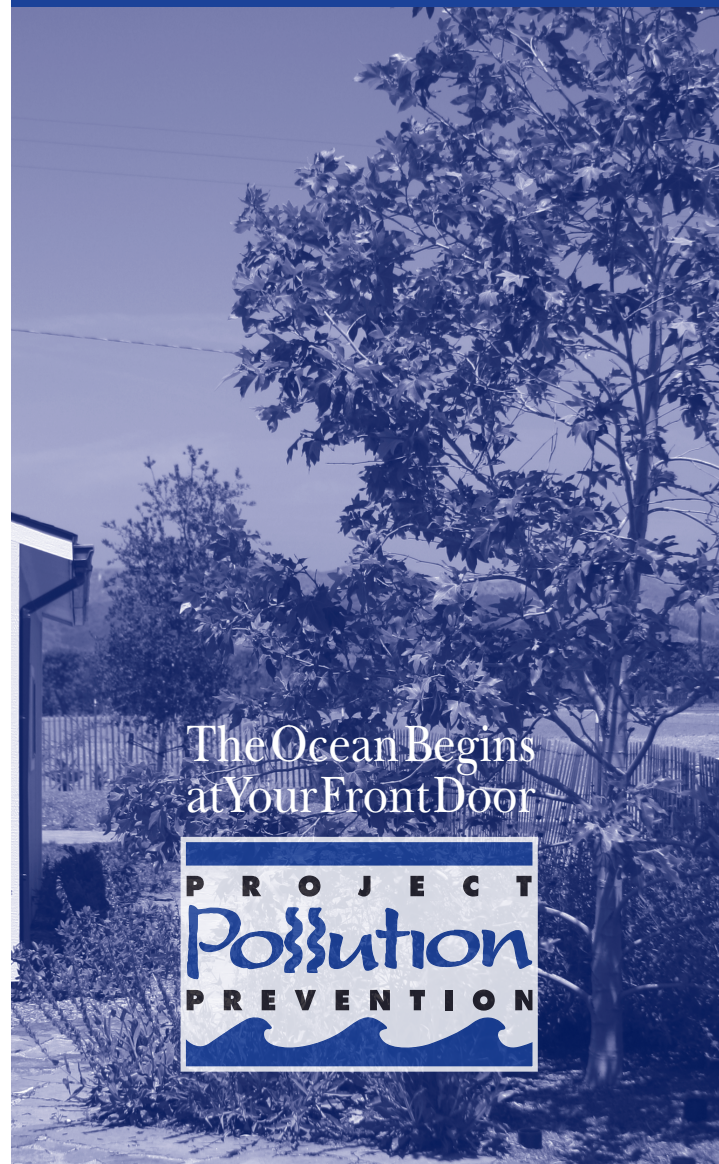
Funding for this brochure has been provided in full  
or in part through an agreement with the State Water  
Resources Control Board (SWRCB) pursuant to the  
Costa-Machado Water Act of 2000 (Prop. 13).



Printed on Recycled Paper

Help Prevent Ocean Pollution:

## Responsible Pest Control



The Ocean Begins  
at Your Front Door



# Tips for Pest Control

## Key Steps to Follow:

**Step 1:** Correctly identify the pest (insect, weed, rodent, or disease) and verify that it is actually causing the problem.



Three life stages of the common lady beetle, a beneficial insect.

This is important because beneficial insects are often mistaken for pests and sprayed with pesticides needlessly.

Consult with a Certified Nursery

Professional at a local nursery or garden center or send a sample of the pest to the Orange County Agricultural Commissioner's Office.

Determine if the pest is still present – even though you see damage, the pest may have left.

**Step 2:** Determine how many pests are present and causing damage.



Small pest populations may be controlled more safely using non-pesticide techniques. These include removing food sources, washing off leaves with a strong stream of water, blocking entry into the home using caulking and replacing problem plants with ones less susceptible to pests.

Integrated Pest Management (IPM) usually combines several least toxic pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment.



**Step 3:** If a pesticide must be used, choose the least toxic chemical.

Obtain information on the least toxic pesticides that are effective at controlling the target pest from the UC Statewide Integrated Pest Management (IPM) Program's Web site at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu).

Seek out the assistance of a Certified Nursery Professional at a local nursery or garden center when selecting a pesticide. Purchase the smallest amount of pesticide available.

Apply the pesticide to the pest during its most vulnerable life stage. This information can be found on the pesticide label.

**Step 4:** Wear appropriate protective clothing.

Follow pesticide labels regarding specific types of protective equipment you should wear. Protective clothing should always be washed separately from other clothing.

**Step 5:** Continuously monitor external conditions when applying pesticides such as weather, irrigation, and the presence of children and animals.

Never apply pesticides when rain is predicted within the next 48 hours. Also, do not water after applying pesticides unless the directions say it is necessary.

Apply pesticides when the air is still; breezy conditions may cause the spray or dust to drift away from your targeted area.

In case of an emergency call 911 and/or the regional poison control number at (714) 634-5988 or (800) 544-4404 (CA only).

For general questions you may also visit [www.calpoison.org](http://www.calpoison.org).

**Step 6:** In the event of accidental spills, sweep up or use an absorbent agent to remove any excess pesticides. Avoid the use of water.

Be prepared. Have a broom, dust pan, or dry absorbent material, such as cat litter, newspapers or paper towels, ready to assist in cleaning up spills.

Contain and clean up the spill right away. Place contaminated materials in a doubled plastic bag. All materials used to clean up the spill should be properly disposed of according to your local Household Hazardous Waste Disposal site.

**Step 7:** Properly store and dispose of unused pesticides.

Purchase Ready-To-Use (RTU) products to avoid storing large concentrated quantities of pesticides.



Store unused chemicals in a locked cabinet.

Unused pesticide chemicals may be disposed of at a Household Hazardous Waste Collection Center.

Empty pesticide containers should be triple rinsed prior to disposing of them in the trash.

Household Hazardous Waste  
Collection Center  
(714) 834-6752  
[www.oilandfills.com](http://www.oilandfills.com)



## IC7. LANDSCAPE MAINTENANCE

### Best Management Practices (BMPs)

A BMP is a technique, measure or structural control that is used for a given set of conditions to improve the quality of the stormwater runoff in a cost effective manner<sup>1</sup>. The minimum required BMPs for this activity are outlined in the box to the right. Implementation of pollution prevention/good housekeeping measures may reduce or eliminate the need to implement other more costly or complicated procedures. Proper employee training is key to the success of BMP implementation.

The BMPs outlined in this fact sheet target the following pollutants:

Targeted Constituents	
Sediment	x
Nutrients	x
Floatable Materials	x
Metals	
Bacteria	x
Oil & Grease	
Organics & Toxicants	
Pesticides	x
Oxygen Demanding	x

#### MINIMUM BEST MANAGEMENT PRACTICES Pollution Prevention/Good Housekeeping

- Properly store and dispose of gardening wastes.
- Use mulch or other erosion control measures on exposed soils.
- Properly manage irrigation and runoff.
- Properly store and dispose of chemicals.
- Properly manage pesticide and herbicide use.
- Properly manage fertilizer use.

#### Stencil storm drains

#### Training

- Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.
- Provide on-going employee training in pollution prevention.

Provided below are specific procedures associated with each of the minimum BMPs along with procedures for additional BMPs that should be considered if this activity takes place at a facility located near a sensitive waterbody. In order to meet the requirements for medium and high priority facilities, the owners/operators must select, install and maintain appropriate BMPs on site. Since the selection of the appropriate BMPs is a site-specific process, the types and numbers of additional BMPs will vary for each facility.

#### 1. Take steps to reduce landscape maintenance requirements.

- Where feasible, retain and/or plant native vegetation with features that are determined to be beneficial. Native vegetation usually requires less maintenance than planting new vegetation.
- When planting or replanting consider using low water use flowers, trees, shrubs, and groundcovers.
- Consider alternative landscaping techniques such as naturescaping and xeriscaping.

#### 2. Properly store and dispose of gardening wastes.

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage at a permitted landfill or by composting.
- Do not dispose of gardening wastes in streets, waterways, or storm drainage systems.
- Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm and/or cover.

#### 3. Use mulch or other erosion control measures on exposed soils.

<sup>1</sup> EPA " Preliminary Data Summary of Urban Stormwater Best Management Practices"

**4. Properly manage irrigation and runoff.**

- Irrigate slowly or pulse irrigate so the infiltration rate of the soil is not exceeded.
- Inspect irrigation system regularly for leaks and to ensure that excessive runoff is not occurring.
- If re-claimed water is used for irrigation, ensure that there is no runoff from the landscaped area(s).
- If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.
- Use automatic timers to minimize runoff.
- Use popup sprinkler heads in areas with a lot of activity or where pipes may be broken. Consider the use of mechanisms that reduce water flow to broken sprinkler heads.

**5. Properly store and dispose of chemicals.**

- Implement storage requirements for pesticide products with guidance from the local fire department and/or County Agricultural Commissioner.
- Provide secondary containment for chemical storage.
- Dispose of empty containers according to the instructions on the container label.
- Triple rinse containers and use rinse water as product.

**6. Properly manage pesticide and herbicide use.**

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of pesticides and herbicides and training of applicators and pest control advisors.
- Follow manufacturers' recommendations and label directions.
- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule). When applicable use less toxic pesticides that will do the job. Avoid use of copper-based pesticides if possible. Use the minimum amount of chemicals needed for the job.
- Do not apply pesticides if rain is expected or if wind speeds are above 5 mph.
- Do not mix or prepare pesticides for application near storm drains. Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the targeted pest.
- Whenever possible, use mechanical methods of vegetation removal rather than applying herbicides. Use hand weeding where practical.
- Do not apply any chemicals directly to surface waters, unless the application is approved and permitted by the state. Do not spray pesticides within 100 feet of open waters.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- When conducting mechanical or manual weed control, avoid loosening the soil, which could lead to erosion.
- Purchase only the amount of pesticide that you can reasonably use in a given time period.
- Careful soil mixing and layering techniques using a topsoil mix or composted organic material can be used as an effective measure to reduce herbicide use and watering.

**7. Properly manage fertilizer use.**

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers.
- Follow manufacturers' recommendations and label directions.
- Employ techniques to minimize off-target application (e.g. spray drift) of fertilizer, including consideration of alternative application techniques. Calibrate fertilizer distributors to avoid excessive application.
- Periodically test soils for determining proper fertilizer use.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Use slow release fertilizers whenever possible to minimize leaching



**8. Incorporate the following integrated pest management techniques where appropriate:**

- Mulching can be used to prevent weeds where turf is absent.
- Remove insects by hand and place in soapy water or vegetable oil. Alternatively, remove insects with water or vacuum them off the plants.
- Use species-specific traps (e.g. pheromone-based traps or colored sticky cards).
- Sprinkle the ground surface with abrasive diatomaceous earth to prevent infestations by soft-bodied insects and slugs. Slugs also can be trapped in small cups filled with beer that are set in the ground so the slugs can get in easily.
- In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of (pruning equipment should be disinfected with bleach to prevent spreading the disease organism).
- Small mammals and birds can be excluded using fences, netting, and tree trunk guards.
- Promote beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seedhead weevils, and spiders that prey on detrimental pest species.

**Training**

1. **Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.**
2. **Educate and train employees on the use of pesticides and pesticide application techniques. Only employees properly trained to use pesticides can apply them.**
3. **Train and encourage employees to use integrated pest management techniques.**
4. **Train employees on proper spill containment and cleanup.**
  - Establish training that provides employees with the proper tools and knowledge to immediately begin cleaning up a spill.
  - Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
  - Fact sheet IC17 discusses Spill Prevention and Control in detail.
5. **Establish a regular training schedule, train all new employees, and conduct annual refresher training.**
6. **Use a training log or similar method to document training.**

**Stencil storm drains**

Storm drain system signs act as highly visible source controls that are typically stenciled directly adjacent to storm drain inlets. Stencils should read "No Dumping Drains to Ocean".

**References**

California Storm Water Best Management Practice Handbook. Industrial and Commercial. 2003. [www.cabmphandbooks.com](http://www.cabmphandbooks.com)

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. King County Surface Water Management. July 1995. On-line: <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Stormwater Management Manual for Western Washington. Volume IV Source Control BMPs. Prepared by Washington State Department of Ecology Water Quality Program. Publication No. 99-14. August 2001.

Water Quality Handbook for Nurseries. Oklahoma Cooperative Extension Service. Division of Agricultural Sciences and Natural Resources. Oklahoma State University. E-951. September 1999.

**For additional information contact:**

**County of Orange/ OC Watersheds**

Main: (714) 955-0600

24 hr Water Pollution Hotline: 1-877-89-SPILL

or visit our website at [www.ocwatersheds.com](http://www.ocwatersheds.com)



## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

## Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

## Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓



***Pollution Prevention***

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

***Suggested Protocols******Recommended Complaint Investigation Equipment***

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

***General***

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.



- See SC44 Stormwater Drainage System Maintenance for additional information.

## *Illicit Connections*

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of “as-built” piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

## *Visual Inspection and Inventory*

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

## *Review Infield Piping*

- A review of the “as-built” piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

## *Smoke Testing*

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

## *Dye Testing*

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

## *TV Inspection of Drainage System*

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

## *Illegal Dumping*

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post “No Dumping” signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

#### *Inspection*

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

#### *Reporting*

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

#### *Training*

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

## ***Spill Response and Prevention***

- See SC11 Spill Prevention Control and Cleanup.

## ***Other Considerations***

- Many facilities do not have accurate, up-to-date schematic drawings.

## **Requirements**

### ***Costs (including capital and operation & maintenance)***

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

### ***Maintenance (including administrative and staffing)***

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

## **Supplemental Information**

### ***Further Detail of the BMP***

#### ***Illegal Dumping***

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a “non-stormwater” discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

#### *Permit Requirements*

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State’s General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility’s SWPPP.

#### *Performance Evaluation*

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

### **References and Resources**

California’s Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>



## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

## Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

## Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

## Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



***Suggested Protocols******Loading and Unloading – General Guidelines***

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

***Inspection***

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

***Training***

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

## ***Spill Response and Prevention***

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

## ***Other Considerations (Limitations and Regulations)***

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

## **Requirements**

### ***Costs***

Costs should be low except when covering a large loading/unloading area.

### ***Maintenance***

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

## **Supplemental Information**

### ***Further Detail of the BMP***

#### ***Special Circumstances for Indoor Loading/Unloading of Materials***

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.
- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:
  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.
  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

**References and Resources**

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>





## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

## Approach

### *Pollution Prevention*

- Accomplish reduction in the amount of waste generated using the following source controls:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

## Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓



***Suggested Protocols******General***

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

***Controlling Litter***

- Post “No Littering” signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

***Waste Collection***

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

## *Good Housekeeping*

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

## *Chemical/Hazardous Wastes*

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

## *Run-on/Runoff Prevention*

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

## *Inspection*

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

***Training***

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

***Spill Response and Prevention***

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste

***Other Considerations (Limitations and Regulations)***

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

**Requirements*****Costs***

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

***Maintenance***

- None except for maintaining equipment for material tracking program.

**Supplemental Information*****Further Detail of the BMP******Land Treatment System***

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

### ***Examples***

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

### **References and Resources**

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>



## Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

## Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

## Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	



# SC-41 Building & Grounds Maintenance

---

- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

## ***Suggested Protocols***

### *Pressure Washing of Buildings, Rooftops, and Other Large Objects*

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

### *Landscaping Activities*

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

### *Building Repair, Remodeling, and Construction*

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

## *Mowing, Trimming, and Planting*

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

## *Fertilizer and Pesticide Management*

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.



# SC-41 Building & Grounds Maintenance

---

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

## *Inspection*

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

## *Training*

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

## *Spill Response and Prevention*

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

## *Other Considerations*

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

## **Requirements**

### *Costs*

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

### *Maintenance*

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

## Supplemental Information

### *Further Detail of the BMP*

#### *Fire Sprinkler Line Flushing*

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, polyphosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

## References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org/>

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org/>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>



# Parking/Storage Area Maintenance SC-43



## Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

## Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

## Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



# **SC-43 Parking/Storage Area Maintenance**

---

## ***Suggested Protocols***

### *General*

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

### *Controlling Litter*

- Post “No Littering” signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

### *Surface Cleaning*

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

# **Parking/Storage Area Maintenance SC-43**

---

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

## ***Surface Repair***

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

## ***Inspection***

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

## ***Training***

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

## ***Spill Response and Prevention***

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

## ***Other Considerations***

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

# SC-43 Parking/Storage Area Maintenance

---

## Requirements

### ***Costs***

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

### ***Maintenance***

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

## Supplemental Information

### ***Further Detail of the BMP***

#### ***Surface Repair***

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

## References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org/>

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>



## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

## Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

## Approach

### *Pollution Prevention*

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

### *Suggested Protocols*

#### *Catch Basins/Inlet Structures*

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

## Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	





# SC-44      Drainage System Maintenance

---

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

## *Storm Drain Conveyance System*

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

## *Pump Stations*

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

## *Open Channel*

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Stream or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

## *Illicit Connections and Discharges*

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

## *Illegal Dumping*

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post “No Dumping” signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

## *Training*

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

# SC-44      Drainage System Maintenance

---

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

## ***Spill Response and Prevention***

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using “dry” methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

## ***Other Considerations (Limitations and Regulations)***

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

## **Requirements**

### ***Costs***

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:
  - Purchase and installation of signs.
  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

## ***Maintenance***

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

## **Supplemental Information**

### ***Further Detail of the BMP***

#### ***Storm Drain Flushing***

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents “plug flow” discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

# SC-44      Drainage System Maintenance

---

## References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual  
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net>

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:  
[http://www.epa.gov/npdes/menuofbmps/poll\\_16.htm](http://www.epa.gov/npdes/menuofbmps/poll_16.htm)



## Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

## Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>
Oxygen Demanding	<input checked="" type="checkbox"/>

## Description

Streets, roads, and highways are significant sources of pollutants in stormwater discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. Stormwater pollution from roadway and bridge maintenance should be addressed on a site-specific basis. Use of the procedures outlined below, that address street sweeping and repair, bridge and structure maintenance, and unpaved roads will reduce pollutants in stormwater.

## Approach

### Pollution Prevention

- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal)
- Recycle paint and other materials whenever possible.
- Enlist the help of citizens to keep yard waste, used oil, and other wastes out of the gutter.

### Suggested Protocols

#### Street Sweeping and Cleaning

- Maintain a consistent sweeping schedule. Provide minimum monthly sweeping of curbed streets.
- Perform street cleaning during dry weather if possible.



- Avoid wet cleaning or flushing of street, and utilize dry methods where possible.
- Consider increasing sweeping frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc. For example:
  - Increase the sweeping frequency for streets with high pollutant loadings, especially in high traffic and industrial areas.
  - Increase the sweeping frequency just before the wet season to remove sediments accumulated during the summer.
  - Increase the sweeping frequency for streets in special problem areas such as special events, high litter or erosion zones.
- Maintain cleaning equipment in good working condition and purchase replacement equipment as needed. Old sweepers should be replaced with new technologically advanced sweepers (preferably regenerative air sweepers) that maximize pollutant removal.
- Operate sweepers at manufacturer requested optimal speed levels to increase effectiveness.
- To increase sweeping effectiveness consider the following:
  - Institute a parking policy to restrict parking in problematic areas during periods of street sweeping.
  - Post permanent street sweeping signs in problematic areas; use temporary signs if installation of permanent signs is not possible.
  - Develop and distribute flyers notifying residents of street sweeping schedules.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- If available use vacuum or regenerative air sweepers in the high sediment and trash areas (typically industrial/commercial).
- Keep accurate logs of the number of curb-miles swept and the amount of waste collected.
- Dispose of street sweeping debris and dirt at a landfill.
- Do not store swept material along the side of the street or near a storm drain inlet.
- Keep debris storage to a minimum during the wet season or make sure debris piles are contained (e.g. by berming the area) or covered (e.g. with tarps or permanent covers).

#### *Street Repair and Maintenance*

##### *Pavement marking*

- Schedule pavement marking activities for dry weather.

- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- Provide drop cloths and drip pans in paint mixing areas.
- Properly maintain application equipment.
- Street sweep thermoplastic grindings. Yellow thermoplastic grindings may require special handling as they may contain lead.
- Paints containing lead or tributyltin are considered a hazardous waste and must be disposed of properly.
- Use water based paints whenever possible. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer.
- Properly store leftover paints if they are to be kept for the next job, or dispose of properly.

## *Concrete installation and repair*

- Schedule asphalt and concrete activities for dry weather.
- Take measures to protect any nearby storm drain inlets and adjacent watercourses, prior to breaking up asphalt or concrete (e.g. place sandbags around inlets or work areas).
- Limit the amount of fresh concrete or cement mortar mixed, mix only what is needed for the job.
- Store concrete materials under cover, away from drainage areas. Secure bags of cement after they are open. Be sure to keep wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff.
- Return leftover materials to the transit mixer. Dispose of small amounts of hardened excess concrete, grout, and mortar in the trash.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile, or dispose in the trash.
- When making saw cuts in pavement, use as little water as possible and perform during dry weather. Cover each storm drain inlet completely with filter fabric or plastic during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site. Alternatively, a small onsite vacuum may be used to pick up the slurry as this will prohibit slurry from reaching storm drain inlets.
- Wash concrete trucks off site or in designated areas on site designed to preclude discharge of wash water to drainage system.



*Patching, resurfacing, and surface sealing*

- Schedule patching, resurfacing and surface sealing for dry weather.
- Stockpile materials away from streets, gutter areas, storm drain inlets or watercourses. During wet weather, cover stockpiles with plastic tarps or berm around them if necessary to prevent transport of materials in runoff.
- Pre-heat, transfer or load hot bituminous material away from drainage systems or watercourses.
- Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and maintenance holes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from covered maintenance holes and storm drain inlets when the job is complete.
- Prevent excess material from exposed aggregate concrete or similar treatments from entering streets or storm drain inlets. Designate an area for clean up and proper disposal of excess materials.
- Use only as much water as necessary for dust control, to avoid runoff.
- Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquid in storm drains.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

*Equipment cleaning maintenance and storage*

- Inspect equipment daily and repair any leaks. Place drip pans or absorbent materials under heavy equipment when not in use.
- Perform major equipment repairs at the corporation yard, when practical.
- If refueling or repairing vehicles and equipment must be done onsite, use a location away from storm drain inlets and watercourses.
- Clean equipment including sprayers, sprayer paint supply lines, patch and paving equipment, and mud jacking equipment at the end of each day. Clean in a sink or other area (e.g. vehicle wash area) that is connected to the sanitary sewer.

*Bridge and Structure Maintenance**Paint and Paint Removal*

- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Do not transfer or load paint near storm drain inlets or watercourses.

- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.
- Plug nearby storm drain inlets prior to starting painting where there is significant risk of a spill reaching storm drains. Remove plugs when job is completed.
- If sand blasting is used to remove paint, cover nearby storm drain inlets prior to starting work.
- Perform work on a maintenance traveler or platform, or use suspended netting or tarps to capture paint, rust, paint removing agents, or other materials, to prevent discharge of materials to surface waters if the bridge crosses a watercourse. If sanding, use a sander with a vacuum filter bag.
- Capture all clean-up water, and dispose of properly.
- Recycle paint when possible (e.g. paint may be used for graffiti removal activities). Dispose of unused paint at an appropriate household hazardous waste facility.

## *Graffiti Removal*

- Schedule graffiti removal activities for dry weather.
- Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.
- When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal above.
- Direct runoff from sand blasting and high pressure washing (with no cleaning agents) into a landscaped or dirt area. If such an area is not available, filter runoff through an appropriate filtering device (e.g. filter fabric) to keep sand, particles, and debris out of storm drains.
- If a graffiti abatement method generates wash water containing a cleaning compound (such as high pressure washing with a cleaning compound), plug nearby storm drains and vacuum/pump wash water to the sanitary sewer.
- Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

## *Repair Work*

- Prevent concrete, steel, wood, metal parts, tools, or other work materials from entering storm drains or watercourses.
- Thoroughly clean up the job site when the repair work is completed.
- When cleaning guardrails or fences follow the appropriate surface cleaning methods (depending on the type of surface) outlined in SC-71 Plaza & Sidewalk Cleaning fact sheet.

- If painting is conducted, follow the painting and paint removal procedures above.
- If graffiti removal is conducted, follow the graffiti removal procedures above.
- If construction takes place, see the Construction Activity BMP Handbook.
- Recycle materials whenever possible.

#### *Unpaved Roads and Trails*

- Stabilize exposed soil areas to prevent soil from eroding during rain events. This is particularly important on steep slopes.
- For roadside areas with exposed soils, the most cost-effective choice is to vegetate the area, preferably with a mulch or binder that will hold the soils in place while the vegetation is establishing. Native vegetation should be used if possible.
- If vegetation cannot be established immediately, apply temporary erosion control mats/blankets; a comma straw, or gravel as appropriate.
- If sediment is already eroded and mobilized in roadside areas, temporary controls should be installed. These may include: sediment control fences, fabric-covered triangular dikes, gravel-filled burlap bags, biobags, or hay bales staked in place.

#### *Non-Stormwater Discharges*

Field crews should be aware of non-stormwater discharges as part of their ongoing street maintenance efforts.

- Refer to SC-10 Non-Stormwater Discharges
- Identify location, time and estimated quantity of discharges.
- Notify appropriate personnel.

#### ***Training***

- Train employees regarding proper street sweeping operation and street repair and maintenance.
- Instruct employees and subcontractors to ensure that measures to reduce the stormwater impacts of roadway/bridge maintenance are being followed.
- Require engineering staff and/or consulting A/E firms to address stormwater quality in new bridge designs or existing bridge retrofits.
- Use a training log or similar method to document training.
- Train employees on proper spill containment and clean up, and in identifying non-stormwater discharges.

## ***Spill Response and Prevention***

- Refer to SC-11, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

## ***Other Considerations***

- Densely populated areas or heavily used streets may require parking regulations to clear streets for cleaning.
- No currently available conventional sweeper is effective at removing oil and grease. Mechanical sweepers are not effective at removing finer sediments.
- Limitations may arise in the location of new bridges. The availability and cost of land and other economic and political factors may dictate where the placement of a new bridge will occur. Better design of the bridge to control runoff is required if it is being placed near sensitive waters.

## **Requirements**

### ***Costs***

- The maintenance of local roads and bridges is already a consideration of most community public works or transportation departments. Therefore, the cost of pollutant reducing management practices will involve the training and equipment required to implement these new practices.
- The largest expenditures for street sweeping programs are in staffing and equipment. The capital cost for a conventional street sweeper is between \$60,000 and \$120,000. Newer technologies might have prices approaching \$180,000. The average useful life of a conventional sweeper is about four years, and programs must budget for equipment replacement. Sweeping frequencies will determine equipment life, so programs that sweep more often should expect to have a higher cost of replacement.
- A street sweeping program may require the following.
  - Sweeper operators, maintenance, supervisory, and administrative personnel are required.
  - Traffic control officers may be required to enforce parking restrictions.
  - Skillful design of cleaning routes is required for program to be productive.
  - Arrangements must be made for disposal of collected wastes.

- If investing in newer technologies, training for operators must be included in operation and maintenance budgets. Costs for public education are small, and mostly deal with the need to obey parking restrictions and litter control. Parking tickets are an effective reminder to obey parking rules, as well as being a source of revenue.

***Maintenance***

- Not applicable

**Supplemental Information*****Further Detail of the BMP******Street sweeping***

There are advantages and disadvantages to the two common types of sweepers. The best choice depends on your specific conditions. Many communities find it useful to have a compliment of both types in their fleet.

**Mechanical Broom Sweepers** - More effective at picking up large debris and cleaning wet streets. Less costly to purchase and operate. Create more airborne dust.

**Vacuum Sweepers** - More effective at removing fine particles and associated heavy metals. Ineffective at cleaning wet streets. Noisier than mechanical broom sweepers which may restrict areas or times of operation. May require an advance vehicle to remove large debris.

**Street Flushers** - Not affected by biggest interference to cleaning, parked cars. May remove finer sediments, moving them toward the gutter and stormwater inlets. For this reason, flushing fell out of favor and is now used primarily after sweeping. Flushing may be effective for combined sewer systems. Presently street flushing is not allowed under most NPDES permits.

***Cross-Media Transfer of Pollutants***

The California Air Resources Board (ARB) has established state ambient air quality standards including a standard for respirable particulate matter (less than or equal to 10 microns in diameter, symbolized as PM<sub>10</sub>). In the effort to sweep up finer sediments to remove attached heavy metals, municipalities should be aware that fine dust, that cannot be captured by the sweeping equipment and becomes airborne, could lead to issues of worker and public safety.

***Bridges***

Bridges that carry vehicular traffic generate some of the more direct discharges of runoff to surface waters. Bridge scupper drains cause a direct discharge of stormwater into receiving waters and have been shown to carry relatively high concentrations of pollutants. Bridge maintenance also generates wastes that may be either directly deposited to the water below or carried to the receiving water by stormwater. The following steps will help reduce the stormwater impacts of bridge maintenance:

- Site new bridges so that significant adverse impacts to wetlands, sensitive areas, critical habitat, and riparian vegetation are minimized.

- Design new bridges to avoid the use of scupper drains and route runoff to land for treatment control. Existing scupper drains should be cleaned on a regular basis to avoid sediment/debris accumulation.
- Reduce the discharge of pollutants to surface waters during maintenance by using suspended traps, vacuums, or booms in the water to capture paint, rust, and paint removing agents. Many of these wastes may be hazardous. Properly dispose of this waste by referring to CA21 (Hazardous Waste Management) in the Construction Handbook.
- Train employees and subcontractors to reduce the discharge of wastes during bridge maintenance.

## *De-icing*

- Do not over-apply deicing salt and sand, and routinely calibrate spreaders.
- Near reservoirs, restrict the application of deicing salt and redirect any runoff away from reservoirs.
- Consider using alternative deicing agents (less toxic, biodegradable, etc.).

## **References and Resources**

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Stormwater Program

[http://www.ocwatersheds.com/stormwater/swp\\_introduction.asp](http://www.ocwatersheds.com/stormwater/swp_introduction.asp)

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Fresh Concrete and Mortar Application Best Management Practices for the Construction Industry. June.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Roadwork and Paving Best Management Practices for the Construction Industry. June.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Roadway and Bridge Maintenance. On-line [http://www.epa.gov/npdes/menuofbmeps/poll\\_13.htm](http://www.epa.gov/npdes/menuofbmeps/poll_13.htm)



# Site Design & Landscape Planning SD-10



## Design Objectives

- ☒ Maximize Infiltration
- ☒ Provide Retention
- ☒ Slow Runoff
- ☒ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

## Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

## Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.



# SD-10 Site Design & Landscape Planning

---

## ***Designing New Installations***

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

## ***Conserve Natural Areas during Landscape Planning***

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

## ***Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit***

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and



# Site Design & Landscape Planning SD-10

---

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

## *Protection of Slopes and Channels during Landscape Design*

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

## ***Redeveloping Existing Installations***

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of “redevelopment” must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under “designing new installations” above should be followed.

# **SD-10 Site Design & Landscape Planning**

---

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

## **Other Resources**

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.



## Design Objectives

- ☒ Maximize Infiltration
- ☒ Provide Retention
- ☒ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

## Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

## Design Considerations

### *Designing New Installations*

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.



- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

***Redeveloping Existing Installations***

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of “redevelopment” must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under “designing new installations” above should be followed.

**Other Resources**

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.



## Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☒ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

## Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

## Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

## Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

## Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING



– DRAINS TO OCEAN” and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

### ***Redeveloping Existing Installations***

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of “redevelopment”, then the requirements stated under “designing new installations” above should be included in all project design plans.

### **Additional Information**

#### ***Maintenance Considerations***

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner’s association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

#### ***Placement***

- Signage on top of curbs tends to weather and fade.
- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

### **Supplemental Information**

#### ***Examples***

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

### **Other Resources**

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

## Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

## Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

## Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☒ Contain Pollutants
- Collect and Convey

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

## Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

## Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.



- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

***Redeveloping Existing Installations***

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of “redevelopment” must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under “designing new installations” above should be followed.

**Additional Information*****Maintenance Considerations***

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

**Other Resources**

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.





## Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ✓ Contain Pollutant
- Collect and Convey

## Description

Proper design of outdoor storage areas for materials reduces opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the stormwater conveyance system. Materials may be in the form of raw products, by-products, finished products, and waste products. The type of pollutants associated with the materials will vary depending on the type of commercial or industrial activity.

## Approach

Outdoor storage areas require a drainage approach different from the typical infiltration/detention strategy. In outdoor storage areas, infiltration is discouraged. Containment is encouraged. Preventative measures include enclosures, secondary containment structures and impervious surfaces.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

## Design Considerations

Some materials are more of a concern than others. Toxic and hazardous materials must be prevented from coming in contact with stormwater. Non-toxic or non-hazardous materials do not have to be prevented from stormwater contact. However, these materials may have toxic effects on receiving waters if allowed to be discharged with stormwater in significant quantities. Accumulated material on an impervious surface could result in significant impact on the rivers or streams that receive the runoff.

Material may be stored in a variety of ways, including bulk piles, containers, shelving, stacking, and tanks. Stormwater contamination may be prevented by eliminating the possibility of stormwater contact with the material storage areas either through diversion, cover, or capture of the stormwater. Control measures may also include minimizing the storage area. Design requirements



# **SD-34      Outdoor Material Storage Areas**

---

for material storage areas are governed by Building and Fire Codes, and by current City or County ordinances and zoning requirements. Control measures are site specific, and must meet local agency requirements.

## ***Designing New Installations***

Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the stormwater conveyance system, the following structural or treatment BMPs should be considered:

- Materials with the potential to contaminate stormwater should be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system, or (2) protected by secondary containment structures such as berms, dikes, or curbs.
- The storage area should be paved and sufficiently impervious to contain leaks and spills.
- The storage area should slope towards a dead-end sump to contain spills and direct runoff from downspouts/roofs should be directed away from storage areas.
- The storage area should have a roof or awning that extends beyond the storage area to minimize collection of stormwater within the secondary containment area. A manufactured storage shed may be used for small containers.

Note that the location(s) of installations of where these preventative measures will be employed must be included on the map or plans identifying BMPs.

## ***Redeveloping Existing Installations***

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of “redevelopment” must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under “designing new installations” above should be followed.

## **Additional Information**

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permits.

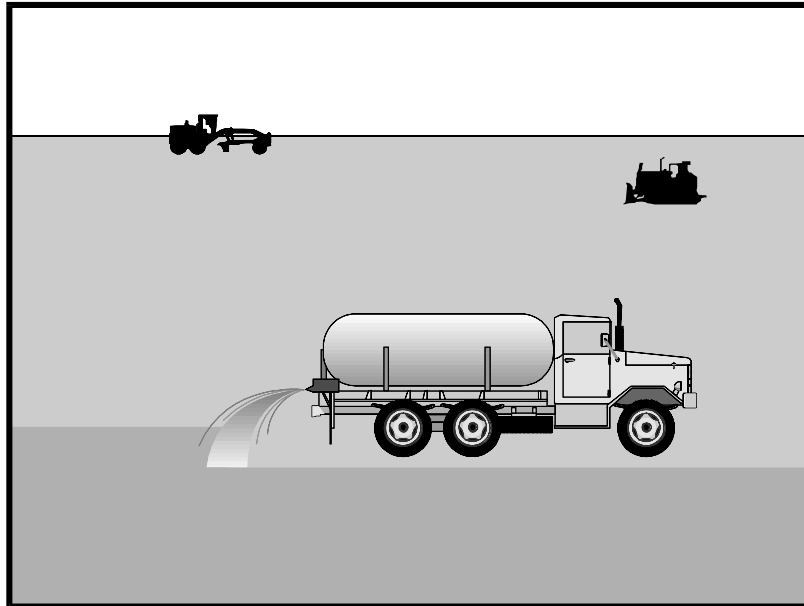
## **Other Resources**

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.



## Description and Purpose

Soil binding consists of application and maintenance of a soil stabilizer to exposed soil surfaces. Soil binders are materials applied to the soil surface to temporarily prevent water and wind induced erosion of exposed soils on construction sites.

## Suitable Applications

Soil binders are typically applied to disturbed areas requiring temporary protection. Because soil binders, when used as a stand-alone practice, can often be incorporated into the soil, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are commonly used in the following areas:

- Rough graded soils that will be inactive for a short period of time
- Soil stockpiles
- Temporary haul roads prior to placement of crushed rock
- Compacted soil road base
- Construction staging, materials storage, and layout areas

## Limitations

- Soil binders are temporary in nature and may need reapplication.
- Soil binders require a minimum curing time until fully effective, as prescribed by the manufacturer. Curing time

## Categories

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	<input checked="" type="checkbox"/>
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

## Legend:

- ☒ **Primary Category**
- ☒ **Secondary Category**

## Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

## Potential Alternatives

- EC-3 Hydraulic Mulch
- EC-4 Hydroseeding
- EC-6 Straw Mulch
- EC-7 Geotextiles and Mats
- EC-8 Wood Mulching

If User/Subscriber modifies this fact sheet in any way, the CASQA name/logo and footer below must be removed from each page and not appear on the modified version.



may be 24 hours or longer. Soil binders may need reapplication after a storm event.

- Soil binders will generally experience spot failures during heavy rainfall events. If runoff penetrates the soil at the top of a slope treated with a soil binder, it is likely that the runoff will undercut the stabilized soil layer and discharge at a point further down slope.
- Plant-material-based soil binders do not generally hold up to pedestrian or vehicular traffic across treated areas as well as polymeric emulsion blends or cementitious-based binders.
- Soil binders may not sufficiently penetrate compacted soils.
- Some soil binders are soil texture specific in terms of their effectiveness. For example, polyacrylamides (PAMs) work very well on silt and clayey soils but their performance decreases dramatically in sandy soils.
- Some soil binders may not perform well with low relative humidity. Under rainy conditions, some agents may become slippery or leach out of the soil.
- Soil binders may not cure if low temperatures occur within 24 hours of application.
- The water quality impacts of some chemical soil binders are relatively unknown and some may have water quality impacts due to their chemical makeup. Additionally, these chemical may require non-visible pollutant monitoring. Products should be evaluated for project-specific implementation by the SWPPP Preparer. Refer to the product Material Safety Data Sheet for chemical properties.

## Implementation

### *General Considerations*

- Soil binders should conform to local municipality specifications and requirements.
- Site soil types will dictate appropriate soil binders to be used.
- A soil binder must be environmentally benign (non-toxic to plant and animal life), easy to apply, easy to maintain, economical, and should not stain paved or painted surfaces. Soil binders should not pollute stormwater when cured. Obtain a Material Safety Data Sheet (MSDS) from the manufacturer to ensure non-toxicity.
- Stormwater runoff from PAM treated soils should pass through one of the following sediment control BMP prior to discharging to surface waters.
  - When the total drainage area is greater than or equal to 5 acres, PAM treated areas should drain to a sediment basin.
  - Areas less than 5 acres should drain to sediment control BMPs, such as a sediment trap, or a series of check dams. The total number of check dams used should be maximized to achieve the greatest amount of settlement of sediment prior to discharging from the site. Each check dam should be spaced evenly in the drainage channel through which stormwater flows are discharged off site.

- Performance of soil binders depends on temperature, humidity, and traffic across treated areas.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

## ***Selecting a Soil Binder***

Properties of common soil binders used for erosion control are provided on Table 1 at the end of this Fact Sheet. Use Table 1 to select an appropriate soil binder. Refer to WE-1, Wind Erosion Control, for dust control soil binders.

Factors to consider when selecting a soil binder include the following:

- Suitability to situation - Consider where the soil binder will be applied, if it needs a high resistance to leaching or abrasion, and whether it needs to be compatible with any existing vegetation. Determine the length of time soil stabilization will be needed, and if the soil binder will be placed in an area where it will degrade rapidly. In general, slope steepness is not a discriminating factor for the listed soil binders.
- Soil types and surface materials - Fines and moisture content are key properties of surface materials. Consider a soil binder's ability to penetrate, likelihood of leaching, and ability to form a surface crust on the surface materials.
- Frequency of application - The frequency of application is related to the functional longevity of the binder, which can be affected by subgrade conditions, surface type, climate, and maintenance schedule.
- Frequent applications could lead to high costs. Application frequency may be minimized if the soil binder has good penetration, low evaporation, and good longevity. Consider also that frequent application will require frequent equipment clean up.

## ***Plant-Material-Based (Short Lived, <6 months) Binders***

Guar: Guar is a non-toxic, biodegradable, natural galactomannan-based hydrocolloid treated with dispersant agents for easy field mixing. It should be mixed with water at the rate of 11 to 15 lb per 1,000 gallons. Recommended minimum application rates are as follows:

**Application Rates for Guar Soil Stabilizer**

Slope (H:V):	Flat	4:1	3:1	2:1	1:1
lb/acre:	40	45	50	60	70

Psyllium: Psyllium is composed of the finely ground muciloid coating of plantago seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. It dries to form a firm but rewettable membrane that binds soil particles together, but permits germination and growth of seed. Psyllium requires 12 to 18 hours drying time. Application rates should be from 80 to 200 lb/acre, with enough water in solution to allow for a uniform slurry flow.

**Starch:** Starch is non-ionic, cold water soluble (pre-gelatinized) granular cornstarch. The material is mixed with water and applied at the rate of 150 lb/acre. Approximate drying time is 9 to 12 hours.

## ***Plant-Material-Based (Long Lived, 6-12 months) Binders***

**Pitch and Rosin Emulsion:** Generally, a non-ionic pitch and rosin emulsion has a minimum solids content of 48%. The rosin should be a minimum of 26% of the total solids content. The soil stabilizer should be non-corrosive, water dilutable emulsion that upon application cures to a water insoluble binding and cementing agent. For soil erosion control applications, the emulsion is diluted and should be applied as follows:

- For clayey soil: 5 parts water to 1 part emulsion
- For sandy soil: 10 parts water to 1 part emulsion

Application can be by water truck or hydraulic seeder with the emulsion and product mixture applied at the rate specified by the manufacturer.

## ***Polymeric Emulsion Blend Binders***

**Acrylic Copolymers and Polymers:** Polymeric soil stabilizers should consist of a liquid or solid polymer or copolymer with an acrylic base that contains a minimum of 55% solids. The polymeric compound should be handled and mixed in a manner that will not cause foaming or should contain an anti-foaming agent. The polymeric emulsion should not exceed its shelf life or expiration date; manufacturers should provide the expiration date. Polymeric soil stabilizer should be readily miscible in water, non-injurious to seed or animal life, non-flammable, should provide surface soil stabilization for various soil types without totally inhibiting water infiltration, and should not re-emulsify when cured. The applied compound typically requires 12 to 24 hours drying time. Liquid copolymer should be diluted at a rate of 10 parts water to 1 part polymer and the mixture applied to soil at a rate of 1,175 gallons/acre.

**Liquid Polymers of Methacrylates and Acrylates:** This material consists of a tackifier/sealer that is a liquid polymer of methacrylates and acrylates. It is an aqueous 100% acrylic emulsion blend of 40% solids by volume that is free from styrene, acetate, vinyl, ethoxylated surfactants or silicates. For soil stabilization applications, it is diluted with water in accordance with the manufacturer's recommendations, and applied with a hydraulic seeder at the rate of 20 gallons/acre. Drying time is 12 to 18 hours after application.

**Copolymers of Sodium Acrylates and Acrylamides:** These materials are non-toxic, dry powders that are copolymers of sodium acrylate and acrylamide. They are mixed with water and applied to the soil surface for erosion control at rates that are determined by slope gradient:

Slope Gradient (H:V)	lb/acre
Flat to 5:1	3.0 – 5.0
5:1 to 3:1	5.0 – 10.0
2:1 to 1:1	10.0 – 20.0

Poly-Acrylamide (PAM) and Copolymer of Acrylamide: Linear copolymer polyacrylamide for use as a soil binder is packaged as a dry flowable solid, as a liquid. Refer to the manufacturer's recommendation for dilution and application rates as they vary based on liquid or dry form, site conditions and climate.

- Limitations specific to PAM are as follows:
  - Do not use PAM on a slope that flows into a water body without passing through a sediment trap or sediment basin.
  - The specific PAM copolymer formulation must be anionic. Cationic PAM should not be used in any application because of known aquatic toxicity problems. Only the highest drinking water grade PAM, certified for compliance with ANSI/NSF Standard 60 for drinking water treatment, should be used for soil applications.
  - PAM designated for erosion and sediment control should be "water soluble" or "linear" or "non-cross linked".
  - PAM should not be used as a stand-alone BMP to protect against water-based erosion. When combined with mulch, its effectiveness increases dramatically.

Hydro-Colloid Polymers: Hydro-Colloid Polymers are various combinations of dry flowable poly-acrylamides, copolymers and hydro-colloid polymers that are mixed with water and applied to the soil surface at rates of 55 to 60 lb/acre. Drying times are 0 to 4 hours.

## ***Cementitious-Based Binders***

Gypsum: This is a formulated gypsum based product that readily mixes with water and mulch to form a thin protective crust on the soil surface. It is composed of high purity gypsum that is ground, calcined and processed into calcium sulfate hemihydrate with a minimum purity of 86%. It is mixed in a hydraulic seeder and applied at rates 4,000 to 12,000 lb/acre. Drying time is 4 to 8 hours.

## ***Applying Soil Binders***

After selecting an appropriate soil binder, the untreated soil surface must be prepared before applying the soil binder. The untreated soil surface must contain sufficient moisture to assist the agent in achieving uniform distribution. In general, the following steps should be followed:

- Follow manufacturer's written recommendations for application rates, pre-wetting of application area, and cleaning of equipment after use.
- Prior to application, roughen embankment and fill areas.
- Consider the drying time for the selected soil binder and apply with sufficient time before anticipated rainfall. Soil binders should not be applied during or immediately before rainfall.
- Avoid over spray onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.



- Soil binders should not be applied to frozen soil, areas with standing water, under freezing or rainy conditions, or when the temperature is below 40°F during the curing period.
- More than one treatment is often necessary, although the second treatment may be diluted or have a lower application rate.
- Generally, soil binders require a minimum curing time of 24 hours before they are fully effective. Refer to manufacturer's instructions for specific cure time.
- For liquid agents:
  - Crown or slope ground to avoid ponding.
  - Uniformly pre-wet ground at 0.03 to 0.3 gal/yd<sup>2</sup> or according to manufacturer's recommendations.
  - Apply solution under pressure. Overlap solution 6 to 12 in.
  - Allow treated area to cure for the time recommended by the manufacturer; typically at least 24 hours.
  - Apply second treatment before first treatment becomes ineffective, using 50% application rate.
  - In low humidities, reactivate chemicals by re-wetting with water at 0.1 to 0.2 gal/yd<sup>2</sup>.

## Costs

Costs vary according to the soil stabilizer selected for implementation. The following are approximate installed costs:

Soil Binder	Cost per Acre (2004) <sup>1</sup>	Estimated Cost per Acre (2009) <sup>2</sup>
Plant-Material-Based (Short Lived) Binders	\$700-\$900	\$770-\$990
Plant-Material-Based (Long Lived) Binders	\$1,200-\$1,500	\$1,320-\$1,650
Polymeric Emulsion Blend Binders	\$700-\$1,500	\$770-\$1,650
Cementitious-Based Binders	\$800-\$1,200	\$880-\$1,350

1. Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004).

2. 2009 costs reflect a 10% escalation over year 2004 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

## Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Reapply the selected soil binder as needed to maintain effectiveness.

<b>Table 1 Properties of Soil Binders for Erosion Control</b>				
<b>Evaluation Criteria</b>	<b>Binder Type</b>			
	<b>Plant Material Based (Short Lived)</b>	<b>Plant Material Based (Long Lived)</b>	<b>Polymeric Emulsion Blends</b>	<b>Cementitious-Based Binders</b>
Relative Cost	Low	Moderate to High	Low to High	Low to Moderate
Resistance to Leaching	High	High	Low to Moderate	Moderate
Resistance to Abrasion	Moderate	Low	Moderate to High	Moderate to High
Longevity	Short to Medium	Medium	Medium to Long	Medium
Minimum Curing Time before Rain	9 to 18 hours	19 to 24 hours	0 to 24 hours	4 to 8 hours
Compatibility with Existing Vegetation	Good	Poor	Poor	Poor
Mode of Degradation	Biodegradable	Biodegradable	Photodegradable/ Chemically Degradable	Photodegradable/ Chemically Degradable
Labor Intensive	No	No	No	No
Specialized Application Equipment	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher
Liquid/Powder	Powder	Liquid	Liquid/Powder	Powder
Surface Crusting	Yes, but dissolves on rewetting	Yes	Yes, but dissolves on rewetting	Yes
Clean Up	Water	Water	Water	Water
Erosion Control Application Rate	Varies <sup>(1)</sup>	Varies <sup>(1)</sup>	Varies <sup>(1)</sup>	4,000 to 12,000 lbs/acre

(1) See Implementation for specific rates.

## References

Erosion Control Pilot Study Report, State of California Department of Transportation (Caltrans), June 2000.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Sedimentation and Erosion Control, An Inventory of Current Practices Draft, US EPA, April 1990.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

## BIO-7: Proprietary Biotreatment

Proprietary biotreatment devices are devices that are manufactured to mimic natural systems such as bioretention areas by incorporating plants, soil, and microbes engineered to provide treatment at higher flow rates or volumes and with smaller footprints than their natural counterparts. Incoming flows are typically filtered through a planting media (mulch, compost, soil, plants, microbes, etc.) and either infiltrated or collected by an underdrain and delivered to the storm water conveyance system. Tree box filters are an increasingly common type of proprietary biotreatment device that are installed at curb level and filled with a bioretention type soil. For low to moderate flows they operate similarly to bioretention systems and are bypassed during high flows. Tree box filters are highly adaptable solutions that can be used in all types of development and in all types of soils but are especially applicable to dense urban parking lots, street, and roadways.

### Also known as:

- Catch basin planter box
- Bioretention vault
- Tree box filter



### Proprietary biotreatment

Source:

<http://www.americastusa.com/index.php/filterra/>

## Feasibility Screening Considerations

- Proprietary biotreatment devices that are unlined may cause incidental infiltration. Therefore, an evaluation of site conditions should be conducted to evaluate whether the BMP should include an impermeable liner to avoid infiltration into the subsurface.

## Opportunity Criteria

- Drainage areas of 0.25 to 1.0 acres.
- Land use may include commercial, residential, mixed use, institutional, and subdivisions. Proprietary biotreatment facilities may also be applied in parking lot islands, traffic circles, road shoulders, and road medians.
- Must not adversely affect the level of flood protection provided by the drainage system.

## OC-Specific Design Criteria and Considerations

- ☐ Frequent maintenance and the use of screens and grates to keep trash out may decrease the likelihood of clogging and prevent obstruction and bypass of incoming flows.
- ☐ Consult proprietors for specific criteria concerning the design and performance.
- ☐ Proprietary biotreatment may include specific media to address pollutants of concern. However, for proprietary device to be considered a biotreatment device the media must be capable of supporting rigorous growth of vegetation.
- ☐ Proprietary systems must be acceptable to the reviewing agency. Reviewing agencies shall have the discretion to request performance information. Reviewing agencies shall have the discretion to deny the use of a proprietary BMP on the grounds of performance, maintenance considerations, or other relevant factors.

- ☐ In right of way areas, plant selection should not impair traffic lines of site. Local jurisdictions may also limit plant selection in keeping with landscaping themes.

### ***Computing Sizing Criteria for Proprietary Biotreatment Device***

- Proprietary biotreatment devices can be volume based or flow-based BMPs.
- Volume-based proprietary devices should be sized using the Simple Design Capture Volume Sizing Method described in [Appendix III.3.1](#) or the Capture Efficiency Method for Volume-Based, Constant Drawdown BMPs described in [Appendix III.3.2](#).
- The required design flowrate for flow-based proprietary devices should be computed using the Capture Efficiency Method for Flow-based BMPs described in [Appendix III.3.3](#).

In South Orange County, the provided ponding plus pore volume must be checked to demonstrate that it is greater than 0.75 of the remaining DCV that this BMP is designed to address. Many proprietary biotreatment BMPs will not be able to meet the definition of “biofiltration” that applies in South Orange County. See Section III.7 and Worksheet SOC-1.

### ***Additional References for Design Guidance***

- Los Angeles Unified School District (LAUSD) Stormwater Technical Manual, Chapter 4:  
[http://www.laschools.org/employee/design/fs-studies-and-reports/download/white\\_paper\\_report\\_material/Storm\\_Water\\_Technical\\_Manual\\_2009-opt-red.pdf?version\\_id=76975850](http://www.laschools.org/employee/design/fs-studies-and-reports/download/white_paper_report_material/Storm_Water_Technical_Manual_2009-opt-red.pdf?version_id=76975850)
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 9:  
[http://dpw.lacounty.gov/DES/design\\_manuals/StormwaterBMPDesignandMaintenance.pdf](http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf)
- Santa Barbara BMP Guidance Manual, Chapter 6:  
[http://www.santabarbaraca.gov/NR/rdonlyres/91D1FA75-C185-491E-A882-49EE17789DF8/0/Manual\\_071008\\_Final.pdf](http://www.santabarbaraca.gov/NR/rdonlyres/91D1FA75-C185-491E-A882-49EE17789DF8/0/Manual_071008_Final.pdf)

## XIV.7. Pretreatment/Gross Solids Removal BMP Fact Sheets (PRE)

### PRE-1: Hydrodynamic Separation Device

Hydrodynamic separation devices are inline pretreatment units designed to remove trash, debris, and coarse sediment using screening, gravity settling, and centrifugal forces generated by forcing the influent into a circular motion. Several companies manufacture units with a variety of design components including separate chambers, baffles, sorbent media, screens, and flow control orifices. Therefore, additional constituents may be targeted depending on the design; however, the short residence time and potential for captured materials to be released during high flows limits the acceptable use of this BMP type as a standalone treatment control BMP.

#### Also known as:

- Vortex Separators
- Swirl Concentrators
- Gross solids removal devices (GSRDs)



Hydrodynamic Separation Device  
Source: Contech Stormwater Solution, Inc.

#### Opportunity Criteria

- Hydrodynamic separation devices are effective for the removal of coarse sediment, trash, and debris, and are useful as pretreatment in combination with other BMP types that target smaller particle sizes. They are most effective in urban areas where coarse sediment, trash, and debris are pollutants of concern.
- Hydrodynamic devices represent a wide range of device types that have different unit processes and design elements (e.g., storage versus flow-through designs, inclusion of media filtration, etc.) that vary significantly within the category. These design features likely have significant effects on BMP performance; therefore, generalized performance data for hydrodynamic devices is not practical.

#### OC-Specific Design Criteria and Considerations

- ☐ Proprietary hydrodynamic device BMP vendors are constantly updating and expanding their product lines so refer to the latest design guidance from each of the vendors. General guidelines on the performance, operations and maintenance of proprietary devices are provided by the vendors.
- ☐ Operations and maintenance requirements include: clearing trash, debris, and sediment around insert grate and inside chamber, and repairing screens and media if damaged or severely clogged.

#### Computing Sizing Criteria for Hydrodynamic Devices

- Hydrodynamic separation devices should be adequately sized to pretreat the entire design volume or design flow rate of the downstream BMP.
- The required design flowrate should be calculated based on the Capture Efficiency Method for Flow-based BMPs (See **Appendix III**) to achieve 80 percent capture of the average annual stormwater runoff volume.

**Proprietary Hydrodynamic Device Manufacturer Websites**

- **Table XIV.1** is a list of manufacturers that provide hydrodynamic separation devices. The inclusion of these manufacturers does not represent an endorse of their products. Other devices and manufacturers may be acceptable for pretreatment.

**Table XIV.1: Proprietary Hydrodynamic Device Manufacturer Websites**

Device	Manufacturer	Website
Rinker In-Line Stormceptor®	Rinker Materials™	<a href="http://www.rinkerstormceptor.com">www.rinkerstormceptor.com</a>
FloGard® Dual-Vortex Hydrodynamic Separator	KriStar Enterprises Inc.	<a href="http://www.kristar.com">www.kristar.com</a>
Contech® CDS <sup>a</sup> ™	Contech® Construction Products Inc.	<a href="http://www.contech-cpi.com">www.contech-cpi.com</a>
Contech® Vortechs™	Contech® Construction Products Inc.	<a href="http://www.contech-cpi.com">www.contech-cpi.com</a>
Contech® Vorsentry™	Contech® Construction Products Inc.	<a href="http://www.contech-cpi.com">www.contech-cpi.com</a>
Contech® Vorsentry™ HS	Contech® Construction Products Inc.	<a href="http://www.contech-cpi.com">www.contech-cpi.com</a>
BaySaver BaySeparator	Baysaver Technologies Inc.	<a href="http://www.baysaver.com">www.baysaver.com</a>

**Additional References for Design Guidance**

- CASQA BMP Handbook for New and Redevelopment:  
<http://www.cabmphandbooks.com/Documents/Development/MP-51.pdf>
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 9:  
[http://dpw.lacounty.gov/DES/design\\_manuals/StormwaterBMPDesignandMaintenance.pdf](http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf)

# ATTACHMENT G

OPERATIONS AND MAINTENANCE (O&M) PLAN

EXHIBIT B – INSPECTION AND MAINTENANCE FORM



# **Operations and Maintenance (O&M) Plan**

## **Water Quality Management Plan for**

**Cypress City Center**

**Cypress, CA**

**Exhibit A, Operations and Maintenance Plan**

<b>BMP Applicable? Yes/No</b>	<b>BMP Name and BMP Implementation, Maintenance, and Inspection Procedures</b>	<b>Implementation, Maintenance, and Inspection Frequency and Schedule</b>	<b>Inspection / Maintenance Activities Required</b>	<b>Person or Entity with Operation &amp; Maintenance Responsibility</b>
	<b>Non-Structural Source Control BMPs</b>			
Y	<b>N1. Education for Property Owners, Tenants and Occupants</b>	UPON NEW LEASE	N/A	Property Owner Association
N	<b>N2. Activity Restriction</b>		The owner shall develop activity restrictions to minimize the threat of hazardous waste or contamination into the storm drainage system. Car washing is not allowed on-site at any time.	
Y	<b>N3. Common Area Landscape Management</b>	WEEKLY WITH ROUTINE LANDSCAPING ACTIVITY	YES, STANDARD LANDSCAPE MANAGEMENT	Property Owner Association
Y	<b>N4. BMP Maintenance</b>	SEE BELOW		Property Owner Association
N	<b>N5. Title 22 CCR Compliance</b>			
Y	<b>N7. Spill Contingency Plan</b>	AS NEEDED	OWNER TO KEEP SPILL KIT ON-SITE	Property Owner Association
N	<b>N8. Underground Storage Tank Compliance</b>			
N	<b>N9. Hazardous Materials Disclosure Compliance</b>			
N	<b>N10. Uniform Fire Code Implementation</b>			
Y	<b>N11. Common Area Litter Control</b>	WEEKLY WITH STANDARD MAINTENANCE	KEEP RECEPTICLES IN WORKING ORDER, PICK-UP LOOSE TRASH	Property Owner Association
Y	<b>N12. Employee Training</b>	NEW MAINTENANCE HIRES TO RECEIVE THIS DOCUMENT	N/A	Property Owner Association
Y	<b>N13. Housekeeping of Loading Docks</b>	Weekly with standard maintenance.	Pick up loose trash, maintain spill control kit in loading area.	Property Owner Association
Y	<b>N14. Common Area Catch Basin Inspection</b>	QUATERLY AND AFTER STORMS IN EXCESS OF 1"	REMOVE DEBRIS AND TRASH	Property Owner Association
Y	<b>N15. Street Sweeping Private Streets and Parking Lots</b>	MONTHLY	N/A	Property Owner Association
N	<b>N17. Retail Gasoline Outlets</b>			
	<b>Structural Source Control BMPs</b>			
Y	<b>Provide Storm Drain System Stenciling and Signage</b>	ANNUAL	REPAINT AS NECESSARY	Property Owner Association
Y	<b>Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction</b>	N/A	DONE AT DESIGN	Property Owner Association

Exhibit A, Operations and Maintenance Plan

BMP Applicable? Yes/No	BMP Name and BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Inspection / Maintenance Activities Required	Person or Entity with Operation & Maintenance Responsibility
Y	Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	N/A	DONE AT DESIGN	Property Owner Association
Y	Use Efficient Irrigation Systems & Landscape Design	Weekly	Landscape maintenance company to inspect irrigation system for leaks and repair as necessary.	Property Owner Association
N	Protect Slopes and Channels and Provide Energy Dissipation			
Y	Loading Docks			Property Owner Association
N	Maintenance Bays			
N	Vehicle Wash Areas			
N	Outdoor Processing Areas			
N	Equipment Wash Areas			
N	Fueling Areas			
Y	Hillside Landscaping	Quarterly.	Inspect planting and replace plants as necessary.	Property Owner Association
N	Wash Water Controls for Food Preparation Areas			
N	Community Car Wash Racks			
	Low Impact Development (LID) and Treatment Control BMPs			
	LID and Treatment Control BMP # 1 Modular Wetlands	Twice Annually (October and April). Also see information in Attachment C.	Remove debris, replace soil and plant materials as necessary per manufacturer's standards. Also see information in Attachment C.	Property Owner Association
	LID and Treatment Control BMP # 1 Contech CDS Unit	Twice Annually (October and April). Also see information in Attachment C.	Remove debris from chamber. Replace media filter.	Property Owner Association

## Exhibit A, Operations and Maintenance Plan

**Today's Date:**

**Name of Person Performing Activity  
(Printed):**

**Signature:**

[illegible]

## Exhibit B

## Inspection and Maintenance Form

[illegible]

# Trained Contractor and Personnel Log

## Stormwater Management Training Log and Documentation

Project Name: \_

WDID #: \_\_\_\_\_

Stormwater Management Topic: (check as appropriate)

☐ Erosion Control

☐ Sediment Control

☐ Wind Erosion Control

☐ Tracking Control

☐ Non-Stormwater Management

☐ Waste Management and Materials Pollution Control

☐ Stormwater Sampling

☐ Other (explain)

Specific Training Objective: \_\_\_\_\_

Location: \_\_\_\_\_ Date: \_\_\_\_

Instructor: \_\_\_\_\_ Telephone: \_\_\_\_

Course Length (hours):

### Attendee Roster (Attach additional forms if necessary)

Name	Company	Phone

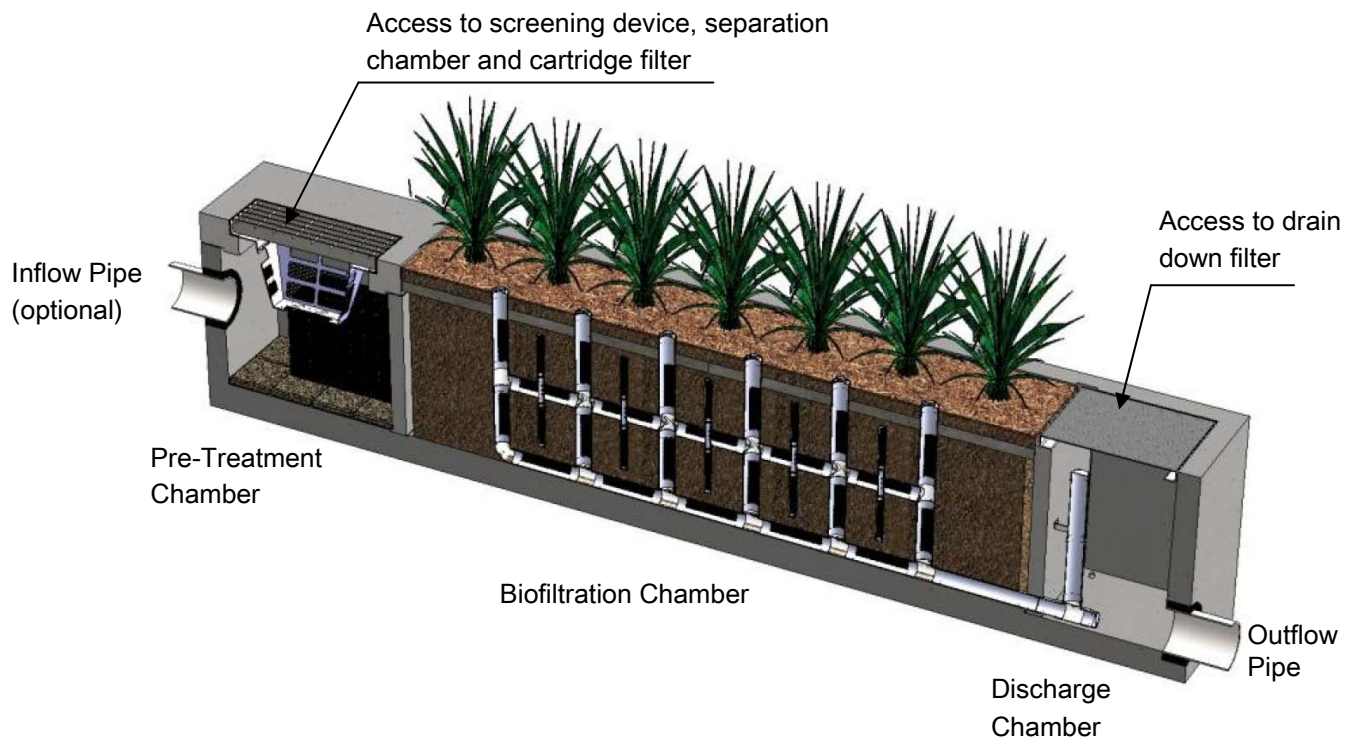
As needed, add proof of external training (e.g., course completion certificates, credentials for QSP, QSD).

# Maintenance Guidelines for Modular Wetland System - Linear

## Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
  - *(5 minute average service time).*
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
  - *(10 minute average service time).*
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
  - *(10-15 minute per cartridge average service time).*
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
  - *(5 minute average service time).*
- Trim Vegetation – average maintenance interval is 6 to 12 months.
  - *(Service time varies).*

## System Diagram



## **Maintenance Procedures**

### **Screening Device**

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

### **Separation Chamber**

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

### **Cartridge Filters**

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

### **Drain Down Filter**

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.





## Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the Biofiltration Chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

## Maintenance Procedure Illustration

### Screening Device

The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.



### Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.



### **Cartridge Filters**

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



### **Drain Down Filter**

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.





## Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.





## Inspection Form



Modular Wetland System, Inc.

P. 760.433-7640

F. 760-433-3176

E. [Info@modularwetlands.com](mailto:Info@modularwetlands.com)

[www.modularwetlands.com](http://www.modularwetlands.com)



# Inspection Report Modular Wetlands System



Project Name \_\_\_\_\_

Project Address \_\_\_\_\_ (city) (Zip Code)

Owner / Management Company \_\_\_\_\_

Contact \_\_\_\_\_

Phone ( ) -

Inspector Name \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time \_\_\_\_ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition \_\_\_\_\_

Additional Notes \_\_\_\_\_

For Office Use Only

(Reviewed By)

(Date)  
Office personnel to complete section to the left.

## Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): \_\_\_\_\_ Size (22', 14' or etc.): \_\_\_\_\_

Structural Integrity:	Yes	No	Comments
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
<b>Working Condition:</b>			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
<b>Other Inspection Items:</b>			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	Yes	No
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: \_\_\_\_\_



## Maintenance Report



Modular Wetland System, Inc.

P. 760.433-7640

F. 760-433-3176

E. [Info@modularwetlands.com](mailto:Info@modularwetlands.com)

[www.modularwetlands.com](http://www.modularwetlands.com)



## Cleaning and Maintenance Report Modular Wetlands System



Project Name \_\_\_\_\_

Project Address \_\_\_\_\_  
(city) (Zip Code)

Owner / Management Company \_\_\_\_\_

Contact \_\_\_\_\_

Phone ( ) -

Inspector Name \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time \_\_\_\_ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint

☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition \_\_\_\_\_

Additional Notes \_\_\_\_\_

For Office Use Only

(Reviewed By)

(Date)  
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat:	MWS Catch Basins						
	Long:							
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:





**April 2014**

## **GENERAL USE LEVEL DESIGNATION FOR BASIC, ENHANCED, AND PHOSPHORUS TREATMENT**

**For the**

**MWS-Linear Modular Wetland**

### **Ecology's Decision:**

Based on Modular Wetland Systems, Inc. application submissions, including the Technical Evaluation Report, dated April 1, 2014, Ecology hereby issues the following use level designation:

1. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Basic treatment
  - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.
2. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Phosphorus treatment
  - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.
3. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Enhanced treatment
  - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.

4. Ecology approves the MWS - Linear Modular Wetland Stormwater Treatment System units for Basic, Phosphorus, and Enhanced treatment at the hydraulic loading rate listed above. Designers shall calculate the water quality design flow rates using the following procedures:

- Western Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using the latest version of the Western Washington Hydrology Model or other Ecology-approved continuous runoff model.
- Eastern Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using one of the three methods described in Chapter 2.2.5 of the Stormwater Management Manual for Eastern Washington (SWMM EW) or local manual.
- Entire State: For treatment installed downstream of detention, the water quality design flow rate is the full 2-year release rate of the detention facility.

5. These use level designations have no expiration date but may be revoked or amended by Ecology, and are subject to the conditions specified below.

**Ecology's Conditions of Use:**

Applicants shall comply with the following conditions:

1. Design, assemble, install, operate, and maintain the MWS – Linear Modular Wetland Stormwater Treatment System units, in accordance with Modular Wetland Systems, Inc. applicable manuals and documents and the Ecology Decision.
2. Each site plan must undergo Modular Wetland Systems, Inc. review and approval before site installation. This ensures that site grading and slope are appropriate for use of a MWS – Linear Modular Wetland Stormwater Treatment System unit.
3. MWS – Linear Modular Wetland Stormwater Treatment System media shall conform to the specifications submitted to, and approved by, Ecology.
4. Maintenance: The required maintenance interval for stormwater treatment devices is often dependent upon the degree of pollutant loading from a particular drainage basin. Therefore, Ecology does not endorse or recommend a “one size fits all” maintenance cycle for a particular model/size of manufactured filter treatment device.

- Typically, Modular Wetland Systems, Inc. designs MWS - Linear Modular Wetland systems for a target prefilter media life of 6 to 12 months.
- Indications of the need for maintenance include effluent flow decreasing to below the design flow rate or decrease in treatment below required levels.
- Owners/operators must inspect MWS - Linear Modular Wetland systems for a minimum of twelve months from the start of post-construction operation to determine site-specific maintenance schedules and requirements. You must conduct inspections monthly during the wet season, and every other month during the dry season. (According to the SWMM WW, the wet season in western Washington is October 1 to April 30. According to SWMM EW, the wet season in eastern Washington is October 1 to June 30). After the

first year of operation, owners/operators must conduct inspections based on the findings during the first year of inspections.

- Conduct inspections by qualified personnel, follow manufacturer's guidelines, and use methods capable of determining either a decrease in treated effluent flowrate and/or a decrease in pollutant removal ability.
- When inspections are performed, the following findings typically serve as maintenance triggers:
  - Standing water remains in the vault between rain events, or
  - Bypass occurs during storms smaller than the design storm.
  - If excessive floatables (trash and debris) are present (but no standing water or excessive sedimentation), perform a minor maintenance consisting of gross solids removal, not prefilter media replacement.
  - Additional data collection will be used to create a correlation between pretreatment chamber sediment depth and pre-filter clogging (see *Issues to be Addressed by the Company* section below)

6. Discharges from the MWS - Linear Modular Wetland Stormwater Treatment System units shall not cause or contribute to water quality standards violations in receiving waters.

Applicant: Modular Wetland Systems, Inc.  
Applicant's Address: P.O. Box 869  
Oceanside, CA 92054

**Application Documents:**

- *Original Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., January 2011
- *Quality Assurance Project Plan*: Modular Wetland system – Linear Treatment System performance Monitoring Project, draft, January 2011.
- *Revised Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., May 2011
- *Memorandum: Modular Wetland System-Linear GULD Application Supplementary Data*, April 2014
- *Technical Evaluation Report: Modular Wetland System Stormwater Treatment System Performance Monitoring*, April 2014.

**Applicant's Use Level Request:**

General use level designation as a Basic, Enhanced, and Phosphorus treatment device in accordance with Ecology's Guidance for Evaluating Emerging Stormwater Treatment Technologies Technology Assessment Protocol – Ecology (TAPE) January 2011 Revision.

**Applicant's Performance Claims:**

- The MWS – Linear Modular wetland is capable of removing a minimum of 80-percent of TSS from stormwater with influent concentrations between 100 and 200 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 50-percent of Total Phosphorus from stormwater with influent concentrations between 0.1 and 0.5 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 30-percent of dissolved Copper from stormwater with influent concentrations between 0.005 and 0.020 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 60-percent of dissolved Zinc from stormwater with influent concentrations between 0.02 and 0.30 mg/l.

**Ecology Recommendations:**

- Modular Wetland Systems, Inc. has shown Ecology, through laboratory and field-testing, that the MWS - Linear Modular Wetland Stormwater Treatment System filter system is capable of attaining Ecology's Basic, Total phosphorus, and Enhanced treatment goals.

**Findings of Fact:**Laboratory Testing

The MWS-Linear Modular wetland has the:

- Capability to remove 99 percent of total suspended solids (using Sil-Co-Sil 106) in a quarter-scale model with influent concentrations of 270 mg/L.
- Capability to remove 91 percent of total suspended solids (using Sil-Co-Sil 106) in laboratory conditions with influent concentrations of 84.6 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 93 percent of dissolved Copper in a quarter-scale model with influent concentrations of 0.757 mg/L.
- Capability to remove 79 percent of dissolved Copper in laboratory conditions with influent concentrations of 0.567 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 80.5-percent of dissolved Zinc in a quarter-scale model with influent concentrations of 0.95 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 78-percent of dissolved Zinc in laboratory conditions with influent concentrations of 0.75 mg/L at a flow rate of 3.0 gpm per square foot of media.

Field Testing

- Modular Wetland Systems, Inc. conducted monitoring of an MWS-Linear (Model # MWS-L-4-13) from April 2012 through May 2013, at a transportation maintenance facility in Portland, Oregon. The manufacturer collected flow-weighted composite

samples of the system's influent and effluent during 28 separate storm events. The system treated approximately 75 percent of the runoff from 53.5 inches of rainfall during the monitoring period. The applicant sized the system at 1 gpm/sq ft. (wetland media) and 3gpm/sq ft. (prefilter).

- Influent TSS concentrations for qualifying sampled storm events ranged from 20 to 339 mg/L. Average TSS removal for influent concentrations greater than 100 mg/L (n=7) averaged 85 percent. For influent concentrations in the range of 20-100 mg/L (n=18), the upper 95 percent confidence interval about the mean effluent concentration was 12.8 mg/L.
- Total phosphorus removal for 17 events with influent TP concentrations in the range of 0.1 to 0.5 mg/L averaged 65 percent. A bootstrap estimate of the lower 95 percent confidence limit (LCL95) of the mean total phosphorus reduction was 58 percent.
- The lower 95 percent confidence limit of the mean percent removal was 60.5 percent for dissolved zinc for influent concentrations in the range of 0.02 to 0.3 mg/L (n=11). The lower 95 percent confidence limit of the mean percent removal was 32.5 percent for dissolved copper for influent concentrations in the range of 0.005 to 0.02 mg/L (n=14) at flow rates up to 28 gpm (design flow rate 41 gpm). Laboratory test data augmented the data set, showing dissolved copper removal at the design flow rate of 41 gpm (93 percent reduction in influent dissolved copper of 0.757 mg/L).

#### **Issues to be addressed by the Company:**

1. Modular Wetland Systems, Inc. should collect maintenance and inspection data for the first year on all installations in the Northwest in order to assess standard maintenance requirements for various land uses in the region. Modular Wetland Systems, Inc. should use these data to establish required maintenance cycles.
2. Modular Wetland Systems, Inc. should collect pre-treatment chamber sediment depth data for the first year of operation for all installations in the Northwest. Modular Wetland Systems, Inc. will use these data to create a correlation between sediment depth and pre-filter clogging.

#### **Technology Description:**

Download at <http://www.modularwetlands.com/>

#### **Contact Information:**

Applicant: Greg Kent  
Modular Wetland Systems, Inc.  
P.O. Box 869  
Oceanside, CA 92054  
[gkent@biocleanenvironmental.net](mailto:gkent@biocleanenvironmental.net)

Applicant website: <http://www.modularwetlands.com/>

Ecology web link: <http://www.ecy.wa.gov/programs/wg/stormwater/newtech/index.html>

Ecology: Douglas C. Howie, P.E.  
Department of Ecology  
Water Quality Program  
(360) 407-6444  
[douglas.howie@ecy.wa.gov](mailto:douglas.howie@ecy.wa.gov)

#### **Revision History**

<b>Date</b>	<b>Revision</b>
June 2011	Original use-level-designation document
September 2012	Revised dates for TER and expiration
January 2013	Modified Design Storm Description, added Revision Table, added maintenance discussion, modified format in accordance with Ecology standard
December 2013	Updated name of Applicant
April 2014	Approved GULD designation for Basic, Phosphorus, and Enhanced treatment

## CatchBasin StormFilter™

*Important: These guidelines should be used as a part of your site stormwater plan.*

### Overview

The CatchBasin StormFilter™ (CBSF) consists of a multi-chamber steel, concrete, or plastic catch basin unit that can contain up to four StormFilter cartridges. The steel CBSF is offered both as a standard and as a deep unit.

The CBSF is installed flush with the finished grade and is applicable for both constrained lot and retrofit applications. It can also be fitted with an inlet pipe for roof leaders or similar applications.

The CBSF unit treats peak water quality design flows up to 0.13 cfs, coupled with an internal weir overflow capacity of 1.0 cfs for the standard unit, and 1.8 cfs for the deep steel and concrete units. Plastic units have an internal weir overflow capacity of 0.5 cfs.

### Design Operation

The CBSF is installed as the primary receiver of runoff, similar to a standard, grated catch basin. The steel and concrete CBSF units have an H-20 rated, traffic bearing lid that allows the filter to be installed in parking lots, and for all practical purposes, takes up no land area. Plastic units can be used in landscaped areas and for other non-traffic-bearing applications.

The CBSF consists of a sumped inlet chamber and a cartridge chamber(s). Runoff enters the sumped inlet chamber either by sheet flow from a paved surface or from an inlet pipe discharging directly to the unit vault. The inlet chamber is equipped with an internal baffle, which traps debris and floating oil and grease, and an overflow weir. While in the inlet chamber, heavier solids are allowed to settle into the deep sump, while lighter solids and soluble pollutants are directed under the baffle and into the cartridge chamber through a port between the baffle and the overflow weir.

Once in the cartridge chamber, polluted water ponds and percolates horizontally through the media in the filter cartridges. Treated water collects in the cartridge's center tube from where it is directed by an under-drain manifold to the outlet pipe on the downstream side of the overflow weir and discharged.

When flows into the CBSF exceed the water quality design value, excess water spills over the overflow weir, bypassing the cartridge bay, and discharges to the outlet pipe.

### Applications

The CBSF is particularly useful where small flows are being treated or for sites that are flat and have little available hydraulic head to spare. The unit is ideal for applications in which standard catch basins are to be used. Both water quality and catchment issues can be resolved with the use of the CBSF.

### Retro-Fit

The retrofit market has many possible applications for the CBSF. The CBSF can be installed by replacing an existing catch basin without having to "chase the grade," thus reducing the high cost of re-piping the storm system.



**CatchBasin StormFilter™****Maintenance Guidelines**

Maintenance procedures for typical catch basins can be applied to the CatchBasin StormFilter (CBSF). The filter cartridges contained in the CBSF are easily removed and replaced during maintenance activities according to the following guidelines.

1. Establish a safe working area as per typical catch basin service activity.
2. Remove steel grate and diamond plate cover (weight 100 lbs. each).
3. Turn cartridge(s) counter-clockwise to disconnect from pipe manifold.
4. Remove 4" center cap from cartridge and replace with lifting cap.
5. Remove cartridge(s) from catch basin by hand or with vactor truck boom.
6. Remove accumulated sediment via vactor truck (min. clearance 13" x 24").
7. Remove accumulated sediment from cartridge bay. (min. clearance 9.25" x 11").
8. Rinse interior of both bays and vactor remaining water and sediment.
9. Install fresh cartridge(s) threading clockwise to pipe manifold.
10. Replace cover and grate.
11. Return original cartridges to Contech for cleaning.

Media may be removed from the filter cartridges using the vactor truck before the cartridges are removed from the catch basin structure. Empty cartridges can be easily removed from the catch basin structure by hand. Empty cartridges should be reassembled and returned to Contech as appropriate.

Materials required include a lifting cap, vactor truck and fresh filter cartridges. Contact Contech for specifications and availability of the lifting cap. The vactor truck must be equipped with a hose capable of reaching areas of restricted clearance. the owner may refresh spent cartridges. Refreshed cartridges are also available from Contech on an exchange basis. Contact the maintenance department of Contech at 503-258-3157 for more information.

Maintenance is estimated at 26 minutes of site time. For units with more than one cartridge, add approximately 5 minutes for each additional cartridge. Add travel time as required.

**Mosquito Abatement**

In certain areas of the United States, mosquito abatement is desirable to reduce the incidence of vectors.

In BMPs with standing water, which could provide mosquito breeding habitat, certain abatement measures can be taken.

1. Periodic observation of the standing water to determine if the facility is harboring mosquito larvae.
2. Regular catch basin maintenance.
3. Use of larvicides containing *Bacillus thuringiensis israelensis* (BTI). BTI is a bacterium toxic to mosquito and black fly larvae.

In some cases, the presence of petroleum hydrocarbons may interrupt the mosquito growth cycle.

**Using Larvicides in the CatchBasin StormFilter**

Larvicides should be used according to manufacturer's recommendations.

Two widely available products are Mosquito Dunks and Summit B.t.i. Briquets. For more information, visit [http://www.summitchemical.com/mos\\_ctrl/default.htm](http://www.summitchemical.com/mos_ctrl/default.htm).

The larvicide must be in contact with the permanent pool. The larvicide should also be fastened to the CatchBasin StormFilter by string or wire to prevent displacement by high flows. A magnet can be used with a steel catch basin.

For more information on mosquito abatement in stormwater BMPs, refer to the following: <http://www.ucmrp.ucdavis.edu/publications/managingmosquitoesstormwater8125.pdf>



# CDS Guide

## Operation, Design, Performance and Maintenance



## CDS®

Using patented continuous deflective separation technology, the CDS system screens, separates and traps debris, sediment, and oil and grease from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material without blinding. Flow and screening controls physically separate captured solids, and minimize the re-suspension and release of previously trapped pollutants. Inline units can treat up to 6 cfs, and internally bypass flows in excess of 50 cfs (1416 L/s). Available precast or cast-in-place, offline units can treat flows from 1 to 300 cfs (28.3 to 8495 L/s). The pollutant removal capacity of the CDS system has been proven in lab and field testing.

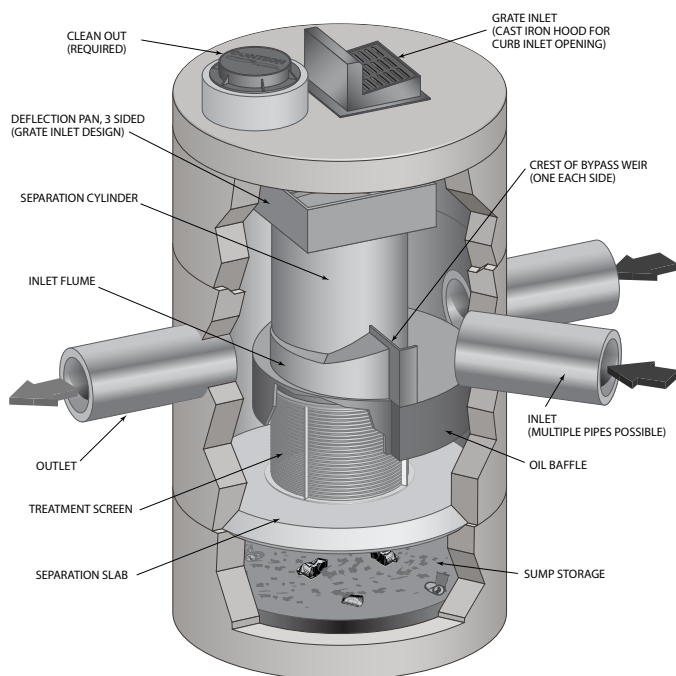
## Operation Overview

Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity enter the separation chamber and are treated.

Swirl concentration and screen deflection force floatables and solids to the center of the separation chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped.

Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection.

During the flow events exceeding the treatment design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder.



## Design Basics

There are three primary methods of sizing a CDS system. The Water Quality Flow Rate Method determines which model size provides the desired removal efficiency at a given flow rate for a defined particle size. The Rational Rainfall Method™ or the Probabilistic Method is used when a specific removal efficiency of the net annual sediment load is required.

Typically in the United States, CDS systems are designed to achieve an 80% annual solids load reduction based on lab generated performance curves for a gradation with an average particle size (d50) of 125 microns (μm). For some regulatory environments, CDS systems can also be designed to achieve an 80% annual solids load reduction based on an average particle size (d50) of 75 microns (μm) or 50 microns (μm).

### Water Quality Flow Rate Method

In some cases, regulations require that a specific treatment rate, often referred to as the water quality design flow (WQQ), be treated. This WQQ represents the peak flow rate from either an event with a specific recurrence interval, e.g. the six-month storm, or a water quality depth, e.g. 1/2-inch (13 mm) of rainfall.

The CDS is designed to treat all flows up to the WQQ. At influent rates higher than the WQQ, the diversion weir will direct most flow exceeding the WQQ around the separation chamber. This allows removal efficiency to remain relatively constant in the separation chamber and eliminates the risk of washout during bypass flows regardless of influent flow rates.

Treatment flow rates are defined as the rate at which the CDS will remove a specific gradation of sediment at a specific removal efficiency. Therefore the treatment flow rate is variable, based on the gradation and removal efficiency specified by the design engineer.

### Rational Rainfall Method™

Differences in local climate, topography and scale make every site hydraulically unique. It is important to take these factors into consideration when estimating the long-term performance of any stormwater treatment system. The Rational Rainfall Method combines site-specific information with laboratory generated performance data, and local historical precipitation records to estimate removal efficiencies as accurately as possible.

Short duration rain gauge records from across the United States and Canada were analyzed to determine the percent of the total annual rainfall that fell at a range of intensities. US stations' depths were totaled every 15 minutes, or hourly, and recorded in 0.01-inch increments. Depths were recorded hourly with 1-mm resolution at Canadian stations. One trend was consistent at all sites; the vast majority of precipitation fell at low intensities and high intensity storms contributed relatively little to the total annual depth.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Rainfall Method. Since most sites are relatively small and highly impervious, the Rational Rainfall Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS system are

determined. Performance efficiency curve determined from full scale laboratory tests on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

### Probabilistic Rational Method

The Probabilistic Rational Method is a sizing program Contech developed to estimate a net annual sediment load reduction for a particular CDS model based on site size, site runoff coefficient, regional rainfall intensity distribution, and anticipated pollutant characteristics.

The Probabilistic Method is an extension of the Rational Method used to estimate peak discharge rates generated by storm events of varying statistical return frequencies (e.g. 2-year storm event). Under the Rational Method, an adjustment factor is used to adjust the runoff coefficient estimated for the 10-year event, correlating a known hydrologic parameter with the target storm event. The rainfall intensities vary depending on the return frequency of the storm event under consideration. In general, these two frequency dependent parameters (rainfall intensity and runoff coefficient) increase as the return frequency increases while the drainage area remains constant.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Method. Since most sites are relatively small and highly impervious, the Rational Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS are determined. Performance efficiency curve on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

### Treatment Flow Rate

The inlet throat area is sized to ensure that the WQQ passes through the separation chamber at a water surface elevation equal to the crest of the diversion weir. The diversion weir bypasses excessive flows around the separation chamber, thus preventing re-suspension or re-entrainment of previously captured particles.

### Hydraulic Capacity

The hydraulic capacity of a CDS system is determined by the length and height of the diversion weir and by the maximum allowable head in the system. Typical configurations allow hydraulic capacities of up to ten times the treatment flow rate. The crest of the diversion weir may be lowered and the inlet throat may be widened to increase the capacity of the system at a given water surface elevation. The unit is designed to meet project specific hydraulic requirements.

## Performance

### Full-Scale Laboratory Test Results

A full-scale CDS system (Model CDS2020-5B) was tested at the facility of University of Florida, Gainesville, FL. This CDS unit was evaluated under controlled laboratory conditions of influent flow rate and addition of sediment.

Two different gradations of silica sand material (UF Sediment & OK-110) were used in the CDS performance evaluation. The particle size distributions (PSDs) of the test materials were analyzed using standard method "Gradation ASTM D-422 "Standard Test Method for Particle-Size Analysis of Soils" by a certified laboratory.

UF Sediment is a mixture of three different products produced by the U.S. Silica Company: "Sil-Co-Sil 106", "#1 DRY" and "20/40 Oil Frac". Particle size distribution analysis shows that the UF Sediment has a very fine gradation ( $d_{50} = 20$  to  $30 \mu\text{m}$ ) covering a wide size range (Coefficient of Uniformity,  $C_u$  averaged at 10.6). In comparison with the hypothetical TSS gradation specified in the NJDEP (New Jersey Department of Environmental Protection) and NJCAT (New Jersey Corporation for Advanced Technology) protocol for lab testing, the UF Sediment covers a similar range of particle size but with a finer  $d_{50}$  ( $d_{50}$  for NJDEP is approximately  $50 \mu\text{m}$ ) (NJDEP, 2003).

The OK-110 silica sand is a commercial product of U.S. Silica Sand. The particle size distribution analysis of this material, also included in Figure 1, shows that 99.9% of the OK-110 sand is finer than 250 microns, with a mean particle size ( $d_{50}$ ) of 106 microns. The PSDs for the test material are shown in Figure 1.

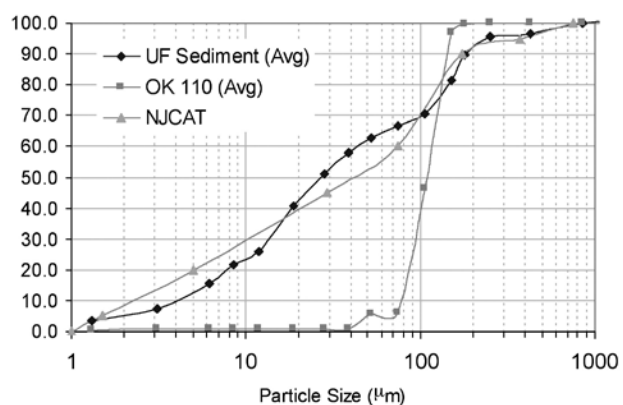


Figure 1. Particle size distributions

Tests were conducted to quantify the performance of a specific CDS unit (1.1 cfs (31.3-L/s) design capacity) at various flow rates, ranging from 1% up to 125% of the treatment design capacity of the unit, using the 2400 micron screen. All tests were conducted with controlled influent concentrations of approximately 200 mg/L. Effluent samples were taken at equal time intervals across the entire duration of each test run. These samples were then processed with a Dekaport Cone sample splitter to obtain representative sub-samples for Suspended Sediment Concentration (SSC) testing using ASTM D3977-97 "Standard Test Methods for Determining Sediment Concentration in Water Samples", and particle size distribution analysis.

## Results and Modeling

Based on the data from the University of Florida, a performance model was developed for the CDS system. A regression analysis was used to develop a fitting curve representative of the scattered data points at various design flow rates. This model, which demonstrated good agreement with the laboratory data, can then be used to predict CDS system performance with respect

to SSC removal for any particle size gradation, assuming the particles are inorganic sandy-silt. Figure 2 shows CDS predictive performance for two typical particle size gradations (NJCAT gradation and OK-110 sand) as a function of operating rate.

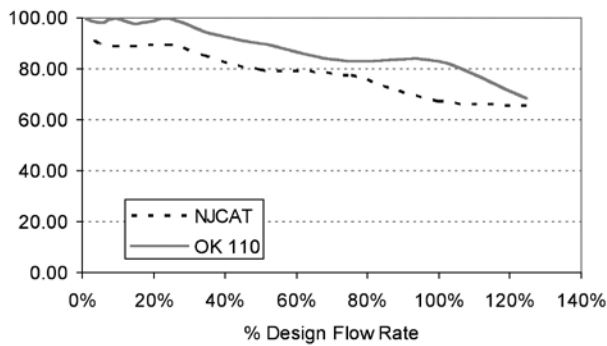


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

Many regulatory jurisdictions set a performance standard for hydrodynamic devices by stating that the devices shall be capable of achieving an 80% removal efficiency for particles having a mean particle size (d50) of 125 microns (e.g. Washington State Department of Ecology — WASDOE - 2008). The model can be used to calculate the expected performance of such a PSD (shown in Figure 3). The model indicates (Figure 4) that the CDS system with 2400 micron screen achieves approximately 80% removal at the design (100%) flow rate, for this particle size distribution (d50 = 125  $\mu$ m).

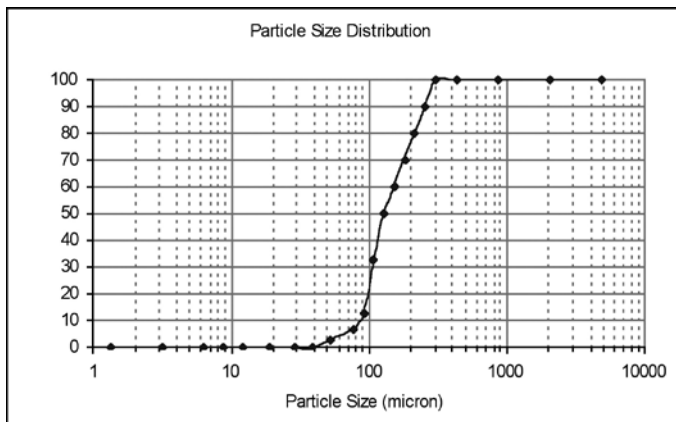


Figure 3. WASDOE PSD

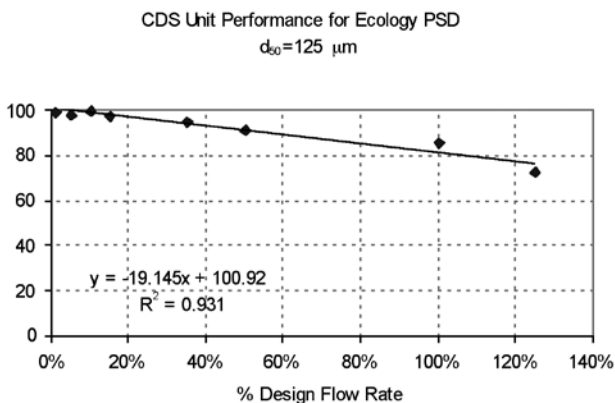


Figure 4. Modeled performance for WASDOE PSD.

## Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

## Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified





during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allow both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded; however, it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine whether the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

## Cleaning

Cleaning of a CDS system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be cleaned to ensure it is free of trash and debris.

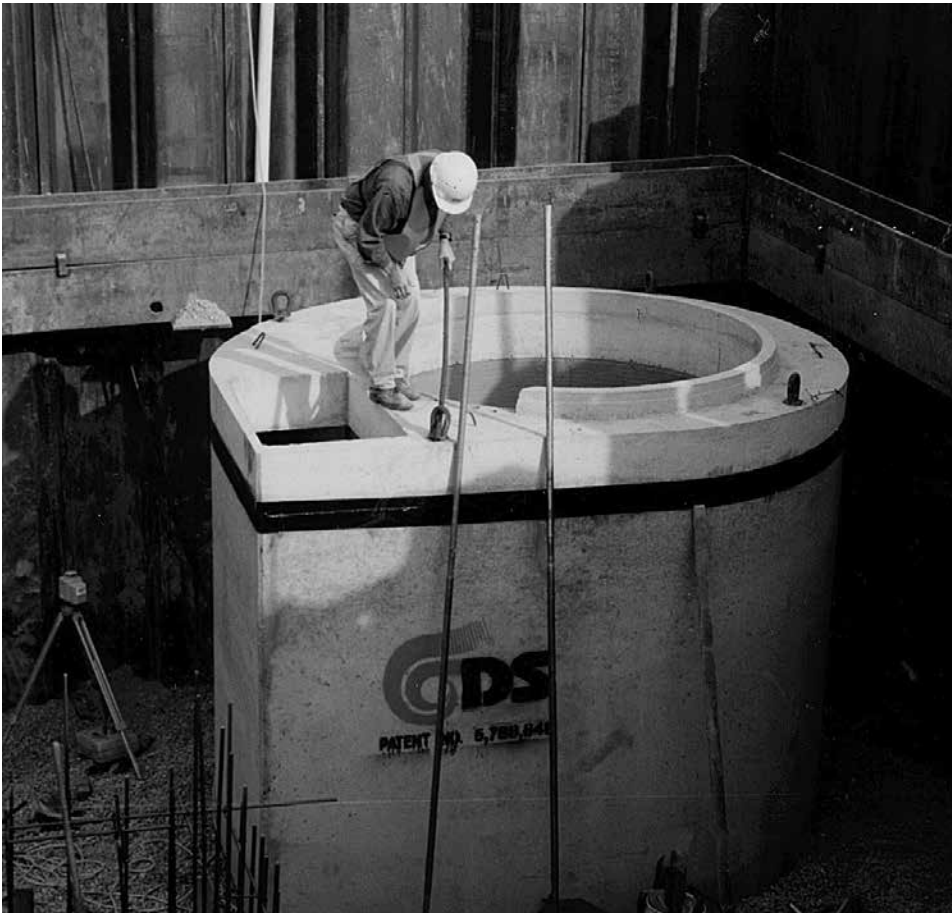
Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y <sup>3</sup>	m <sup>3</sup>
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Note: To avoid underestimating the volume of sediment in the chamber, carefully lower the measuring device to the top of the sediment pile. Finer silty particles at the top of the pile may be more difficult to feel with a measuring stick. These finer particles typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.



## CDS Inspection & Maintenance Log

CDS Model: \_\_\_\_\_ Location: \_\_\_\_\_

[illegible]

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

## SUPPORT

- Drawings and specifications are available at [www.ContechES.com](http://www.ContechES.com).
- Site-specific design support is available from our engineers.



800-338-1122  
[www.ContechES.com](http://www.ContechES.com)

©2017 Contech Engineered Solutions LLC, a QUIKRETE Company

Contech Engineered Solutions provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, earth stabilization and stormwater treatment products. For information on other Contech division offerings, visit [www.ContechES.com](http://www.ContechES.com) or call 800.338.1122

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT [WWW.CONTECHES.COM/COS](http://WWW.CONTECHES.COM/COS)) FOR MORE INFORMATION.

The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; related foreign patents or other patents pending.



CDS<sup>®</sup>  
Hydrodynamic Separator



**PRECON**

**npca**  
CERTIFIED PLANT

**CONTECH**  
ENGINEERED SOLUTIONS



# The experts you need to solve your stormwater management challenges



**Contech is the leader in stormwater management solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.**

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

## Your Contech Team



### **STORMWATER CONSULTANT**

*It's my job to recommend the best solution to meet permitting requirements.*



### **STORMWATER DESIGN ENGINEER**

*I work with consultants to design the best approved solution to meet your project's needs.*



### **REGULATORY MANAGER**

*I understand the local stormwater regulations and what solutions will be approved.*



### **SALES ENGINEER**

*I make sure our solutions meet the needs of the contractor during construction.*

**Contech is your partner in stormwater management solutions**



## Unique screening technology for stormwater runoff – CDS®



The CDS hydrodynamic separator uses swirl concentration and continuous deflective separation to screen, separate and trap trash, debris, sediment, and hydrocarbons from stormwater runoff.

At the heart of the CDS system is a unique screening technology used to capture and retain trash and debris. The screen face is louvered so that it is smooth in the downstream direction. The effect created is called “Continuous Deflective Separation.” The power of the incoming flow is harnessed to continually shear debris off the screen and to direct trash and sediment toward the center of the separation cylinder. This results in a screen that is self-cleaning and provides 100% removal of floatables and neutrally buoyant material debris 4.7 mm or larger, without blinding.

CDS is used to meet trash Total Maximum Daily Load (TMDL) requirements, for stormwater quality control, inlet and outlet pollution control, and as pretreatment for filtration, detention/infiltration, bioretention, rainwater harvesting systems, and a variety of green infrastructure practices.

# CDS® Features and Benefits

FEATURE	BENEFIT
Captures and retains 100% of floatables and neutrally buoyant debris 4.7mm or larger	Superior pollutant removal
Self-cleaning screen	Ease of maintenance
Isolated storage sump eliminates scour potential	Excellent pollutant retention
Internal bypass	Eliminates the need for additional structures
Multiple pipe inlets and 90-180° angles	Design flexibility
Clear access to sump and stored pollutants	Fast, easy maintenance



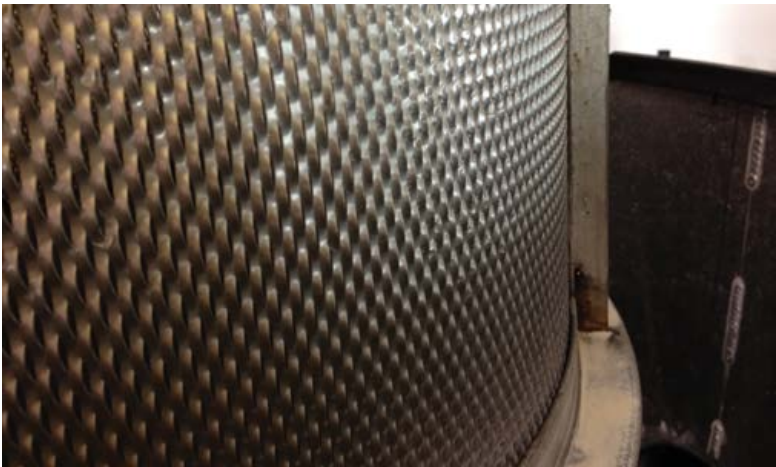
## APPLICATION TIPS

- Because of its internal peak bypass weirs, CDS systems can provide cost savings by eliminating the need for additional structures.
- Pretreating detention, infiltration, and green infrastructure practices with CDS can protect downstream structures and provide for easy maintenance.
- The CDS an ideal solution for retrofit applications due to its compact footprint and configuration flexibility.

## The CDS® Screen

### A fundamentally different approach to trash control ...

Traditional approaches to trash control typically involve “direct screening” that can easily become clogged, as trash is pinned to the screen as water passes through. Clogged screens can lead to flooding as water backs up. The design of the CDS screen is fundamentally different. Flow is introduced to the screen face which is louvered so that it is smooth in the downstream direction. The effect created is called “Continuous Deflective Separation.” The power of the incoming flow is harnessed to continually shear debris off the screen and to direct trash and sediment toward the center of the separation cylinder.

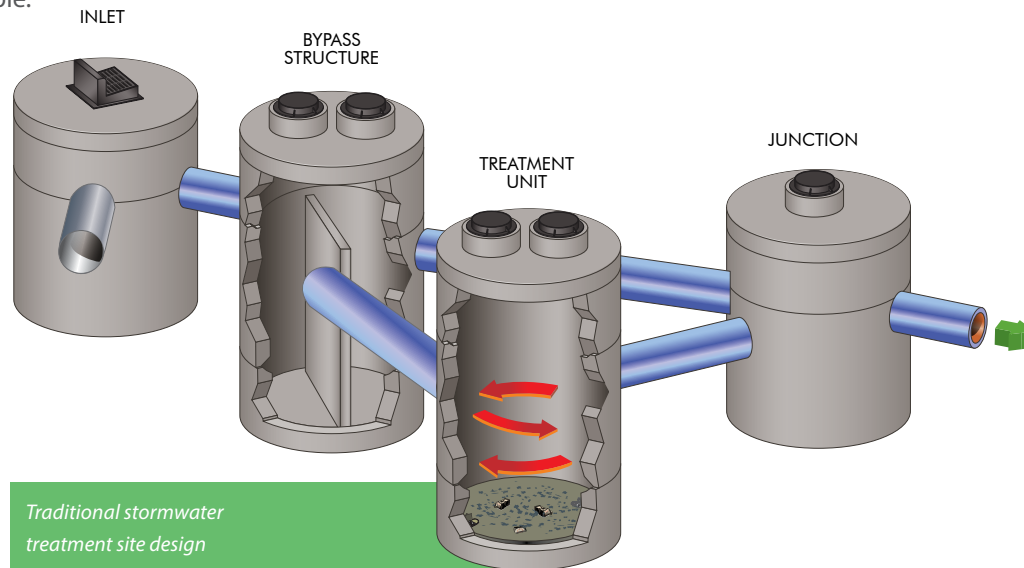




# CDS® Design Configuration

## Why use traditional stormwater design when ONE system can do it all ...

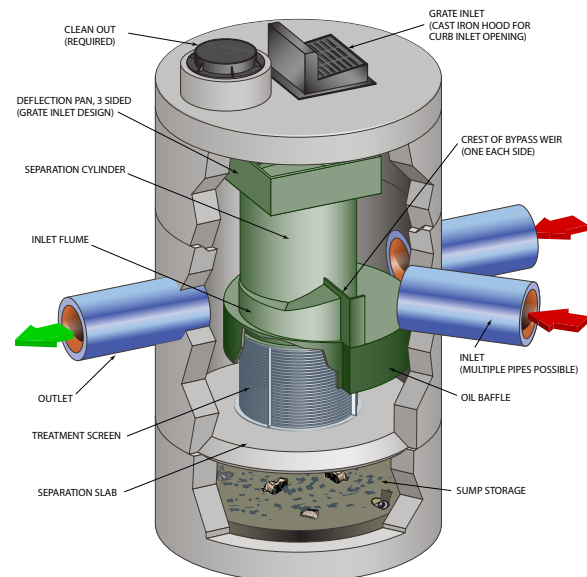
The CDS effectively treats stormwater runoff while reducing the number of structures on your site. Inline, offline, grate inlet, and drop inlet configurations available. Internal and external peak bypass options also available.



A Traditional Stormwater Treatment Site Design  
would require several structures on your site.  
With CDS, one system can do it all!

## CDS® Advantages

- Grate inlet option available
- Internal bypass weir
- Accepts multiple inlets at a variety of angles
- Advanced hydrodynamic separator
- Captures and retains 100% of floatables and neutrally buoyant debris 4.7 mm or larger
- Indirect screening capability keeps screen from clogging
- Retention of all captured pollutants, even at high flows
- Performance verified by NJCAT, WA Ecology, and ETV Canada



Learn More:

[www.ContechES.com/cds](http://www.ContechES.com/cds)

# CDS® Applications

CDS is commonly used in the following stormwater applications:

- Stormwater quality control – trash, debris, sediment, and hydrocarbon removal
- Urban retrofit and redevelopment
- Inlet and outlet protection
- Pretreatment for filtration, detention/infiltration, bioretention, rainwater harvesting systems, and Low Impact Development designs



*CDS® provides trash control*



*CDS® pretreats a bioswale*

## Select CDS® Certifications and Verifications

CDS has been verified by some of the most stringent stormwater technology evaluation organizations in North America, including:

- Washington State Department of Ecology (GULD) - Pretreatment
- New Jersey Department of Environmental Protection (NJ DEP)
- Canadian Environmental Technology Verification (ETV)
- California Statewide Trash Amendments Full Capture System Certified\*

*\*The CDS System has been certified by the California State Water Resources Control Board as a Full Capture System provided that it is sized to treat the peak flow rate from the region specific 1-year, 1-hour design storm, or the peak flow capacity of the corresponding storm drain, whichever is less.*

**Save time, space and money with CDS**

# CDS® Maintenance

## Select a cost-effective and easy-to-access treatment system ...

Systems vary in their maintenance needs, and the selection of a cost-effective and easy-to-access treatment system can mean a huge difference in maintenance expenses for years to come.

A CDS unit is designed to minimize maintenance and make it as easy and inexpensive as possible to keep our systems working properly.

### INSPECTION

Inspection is the key to effective maintenance. Pollutant deposition and transport may vary from year to year and site to site. Semi-annual inspections will help ensure that the system is cleaned out at the appropriate time. Inspections should be performed more frequently where site conditions may cause rapid accumulation of pollutants.

### RECOMMENDATIONS FOR CDS MAINTENANCE

The recommended cleanout of solids within the CDS unit's sump should occur at 75% of the sump capacity. Access to the CDS unit is typically achieved through two manhole access covers – one allows inspection and cleanout of the separation chamber and sump, and another allows inspection and cleanout of sediment captured and retained behind the screen. A vacuum truck is recommended for cleanout of the CDS unit and can be easily accomplished in less than 30 minutes for most installations.



*Most CDS® units can easily be cleaned within thirty minutes.*

# HDS Product Design Worksheets

Our in-house team of engineers can support you through the entire permitting process - and the first step is sending us your project information by filling out one of the Project Design Worksheets. We will forward your information to an in-house engineer who will contact you with specific recommendations for your project.

**The free tool is available at**  
**[www.ContechES.com/pdw-treatment](http://www.ContechES.com/pdw-treatment)**

The image shows a screenshot of a web-based form titled 'Project Design Worksheet - Stormwater Treatment'. The form is divided into sections: 'Project Information' and 'Design Specifications'. The 'Project Information' section includes fields for Project Name, Site Plan Available, Project Location, Regulatory Agency, and Online or Offline. It also has checkboxes for Deliverable Requests: Design Assistance, Siting, Drawing, Quote, Rush Request, and EED Cert. The 'Design Specifications' section includes fields for Treatment Flow (Water Quality Flow), Peak Flow (40 or LAG), Upstream Detention, Drainage Area (ac or ha), % Impervious or % values, PSD specified or d50 (microns), Storm Frequency Design (yr), and Oil Storage / Removal Req'd. There are also input fields for TSS EMC Influent (mg/L) and TSS EMC Effluent (mg/L). A 'REQUEST PRICING' button is visible in the top right corner.

*Learn More:*  
[www.ContechES.com/pdw-treatment](http://www.ContechES.com/pdw-treatment)



# A partner you can rely on



STORMWATER  
SOLUTIONS



PIPE  
SOLUTIONS



STRUCTURES  
SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

## THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

## TAKE THE NEXT STEP

For more information: [www.ContechES.com](http://www.ContechES.com)

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT [WWW.CONTECHES.COM/COS](http://WWW.CONTECHES.COM/COS)) FOR MORE INFORMATION.

**CONTECH**  
ENGINEERED SOLUTIONS

Get social with us: [f](#) [in](#) [t](#) [v](#)

800-338-1122 | [www.ContechES.com](http://www.ContechES.com)



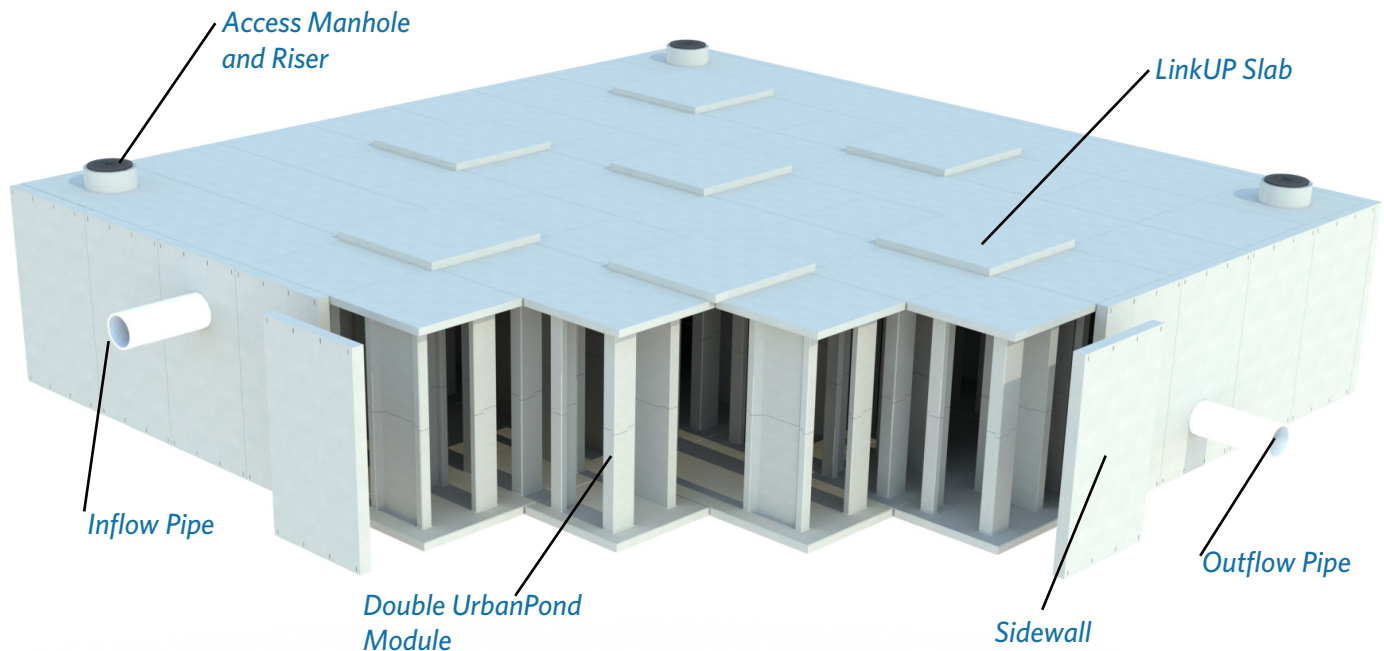


# UrbanPond™

A Stormwater Storage Solution



## MAINTENANCE



## URBAN POND INSPECTION & MAINTENANCE

Inspection and maintenance of the Urban Pond underground detention, retention, or infiltration system is vital for the performance and life cycle of the stormwater management system. All local, state, and federal permits and regulations must be followed for system compliance. Manway access locations are provided on each system for ease of ingress and egress for routine inspection and maintenance activities. Stormwater regulations require that all BMPs be inspected and maintained to ensure they are operating as designed and providing protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess the site specific conditions. Inspection after the first significant rainfall event and at quarterly intervals is typical. This is recommended because pollutant loading and pollutant characteristics can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding on roads, amount of daily traffic and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years to ensure appropriate maintenance is provided. Without appropriate maintenance a BMP can exceed its storage capacity, become blocked, or damaged, which can negatively affect its continued performance.

### *Inspection Equipment*

Following is a list of equipment to allow for simple and effective inspection of the underground detention, retention, or infiltration system:

- Bio Clean Environmental Inspection and Maintenance Report Form
- Flashlight
- Manhole hook or appropriate tools to access hatches and covers
- Appropriate traffic control signage and procedures
- Measuring pole and/or tape measure
- Protective clothing and eye protection
- Note: Entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections of the system.



### *Inspection Steps*

The key to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Urban Pond underground detention, retention, or infiltration system are quick and easy. As mentioned above, the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order

to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long term inspection and maintenance interval requirements.

The Urban Pond underground detention, retention, or infiltration system can be inspected through visual observation without entry into the system. All necessary pre-inspection steps must be carried out before inspection occurs, especially traffic control and other safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open access hatch or manhole. Once these access covers have been safely opened the inspection process can proceed:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
- Observe the upstream drainage area and look for sources of pollution, sediment, trash and debris.
- Observe the inside of the system through the access manholes. If minimal light is available and vision into the unit is impaired, utilize a flashlight to see inside the system and all of its modules.
- Look for any out of the ordinary obstructions in the inflow and outflow pipes. Check pipes for movement or leakage. Write down any observations on the inspection form.
- Observe any movement of modules.
- Observe concrete for cracks and signs of deterioration.
- In detention and retention systems inspect for any signs of leakage.
- In infiltration systems inspect for any signs of blockage or reasons that the soils are not infiltrating.
- Through observation and/or digital photographs, estimate the amount of floatable debris accumulated in the system. Record this information on the inspection form. Next, utilizing a tape measure or measuring stick, estimate the amount of sediment accumulated in the system. Sediment depth may vary throughout the system, depending on the flow path. Record this depth on the inspection form.
- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

### ***Maintenance Indicators***

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Damaged inlet and outlet pipes.
- Obstructions in the system or its inlet or outlet.
- Excessive accumulation of floatables.
- Excessive accumulation of sediment of more than 6" in depth.

- Damaged joint sealant.

### ***Maintenance Equipment***

While maintenance can be done fully by hand it is recommended that a vacuum truck be utilized to minimize time requirements required to maintain the Urban Pond underground detention, retention, or infiltration system:

- Bio Clean Environmental Inspection and Maintenance Report Form
- Flashlight
- Manhole hook or appropriate tools to access hatches and covers
- Appropriate traffic control signage and procedures
- Measuring pole and/or tape measure
- Protective clothing and eye protection
- Vacuum truck
- Trash can
- Pressure washer
- Note: Entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections of the system. Entry into the system will be required if maintenance is required.

### ***Maintenance Procedures***

It is recommended that maintenance occurs at least three days after the most recent rain event to allow for drain down of the system and any upstream detention systems designed to drain down over an extended period of time. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance. Once all safety measures have been set up cleaning of the system can proceed as follows:

- Using an extension on a boom on the vacuum truck, position the hose over the opened manway and lower into the system. Remove all floating debris, standing water (as needed) and sediment from the system. A power washer can be used to assist if sediments have become hardened and stuck to the walls and columns. Repeat the same procedure at each manway until the system has been fully maintained. Be sure not to pressure wash the infiltration area as it may scour.

If maintenance requires entry into the vault:

- Following rules for confined space entry use a gas meter to detect the presence of any hazardous gases. If hazardous gases are present do not enter the vault. Follow appropriate confined space procedures, such as utilizing venting system, to address the hazard. Once it

is determined to be safe, enter utilizing appropriate entry equipment such as a ladder and tripod with harness.

- The last step is to close up and replace all manhole covers and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.

For Maintenance Services please contact Bio Clean at 760-433-7640, or email [info@biocleanenvironmental.com](mailto:info@biocleanenvironmental.com).

# Inspection and Maintenance Report

## Underground Detention, Retention, or Infiltration

Project Name \_\_\_\_\_

Project Address \_\_\_\_\_

(city) (Zip Code)

Owner / Management Company \_\_\_\_\_

Contact \_\_\_\_\_

Phone ( ) -

Inspector Name \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Time \_\_\_\_ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm

Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition \_\_\_\_\_

Additional Notes \_\_\_\_\_

For Office Use Only

(Reviewed By)

(Date)  
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Vault	Model #	Inspection of Inlet and Outlet Pipes, Joints, and Connections Between Modules	Trash or Sediment Accumulation (lbs) & Depth (inches)	Structural Notes	Operational Per Manufacturer's Specifications (If not, why?)
	Lat:					
	Long:					
	Lat:					
	Long:					
	Lat:					
	Long:					

Comments:

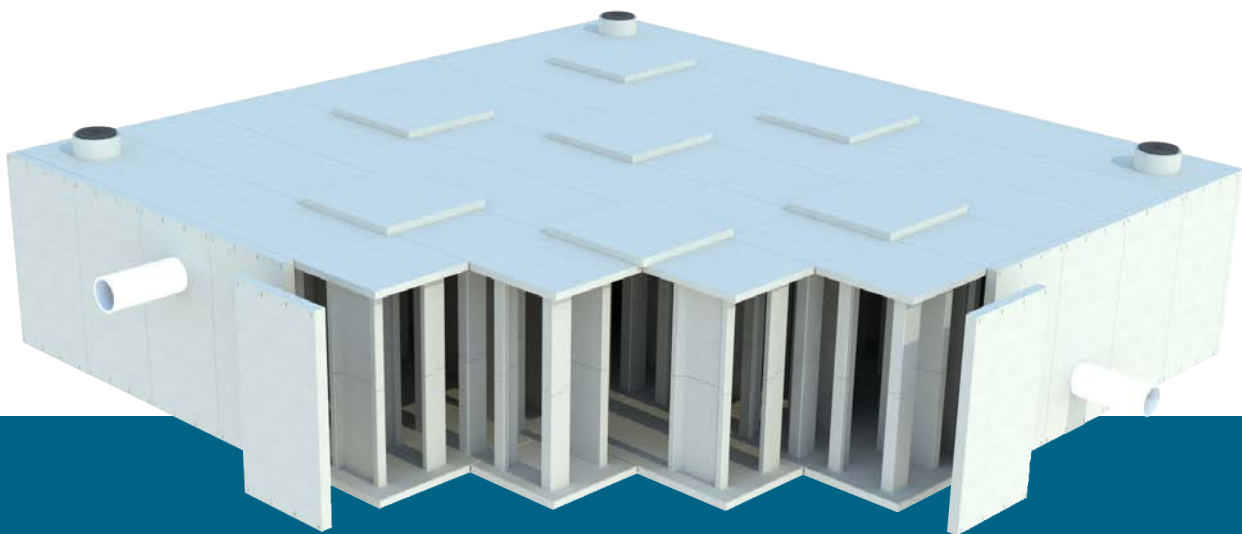


# OVERVIEW

The Bio Clean UrbanPond™ is a technological breakthrough in underground stormwater management.

Its unique square tessellation assembly provides superior strength and material efficiency over traditional rectangular modules. Each module utilizes an offset 3-legged design with two narrow legs running parallel and one wider leg running perpendicular. This unique geometry allows for maximum strength and minimum material usage. The standard design is rated for H-20 loading.

UrbanPond has high void percentages to maximize stormwater volume, and its robust precast form allows systems to be buried deeper without the need for specialized backfill, increased wall thicknesses, or extra rebar reinforcement.



## A BREAKTHROUGH SYSTEM FOR MANAGING STORMWATER RUNOFF

### ADVANTAGES

- THE SQUARE TESSELLATION PROVIDES SUPERIOR STRENGTH AND LOAD CAPACITY
- DESIGNED TO MEET H-20 LOADING REQUIREMENTS
- CAN BE INSTALLED DEEPER WITHOUT THE NEED TO INCREASE WALL THICKNESS OR ADD ADDITIONAL REBAR
- EVERY MODULE DRAINS DOWN FULLY
- HIGHER VOID PERCENTAGES AND INCREASED MATERIAL EFFICIENCY FOR BEST IN CLASS COST PER CUBIC FOOT STORAGE
- LIGHTER WEIGHT, EASIER TO INSTALL
- A LINKUP SLAB ALLOWS ELIMINATION OF SOME MODULES, FURTHER DECREASING COST AND INSTALLATION TIME

# APPLICATIONS

UrbanPond is engineered specifically for:

- Detention** with controlled discharge utilizing built-in outlet orifice structures.
- Retention** for long-term retention of runoff onsite to meet strict stormwater requirements.
- Harvesting** self-contained treatment and reuse of stormwater for irrigation and grey water needs.
- Capture & Infiltration** of runoff back into underlying native soils for recharge needs.
- Treatment** utilized as an underground extended detention basin or pond for advanced treatment of stormwater - integrates well with treatment train components (biofiltration, separation, etc.).
- Flood Control** of peak storm events to minimize downstream flooding and erosion.
- Low Impact Development** to maximize land use with underground storage - construct an urban infill without a pond at grade.

# SPECIFICATIONS

UrbanPond is available from heights of 2 ft. (I.D.) to up to 14 ft. Single UrbanPond modules are available up to 7 ft. height, and the Double UrbanPond modules are available up to 14 ft.

The system's internal offset leg configuration provides channel-less water distribution for stormwater entering and exiting the system.

## SINGLE URBANPOND

I.D. Module Height (ft.)	Module Storage Capacity (cu. ft.)
2	119
3	179
4	238
5	298
6	357
7	417

## DOUBLE URBANPOND

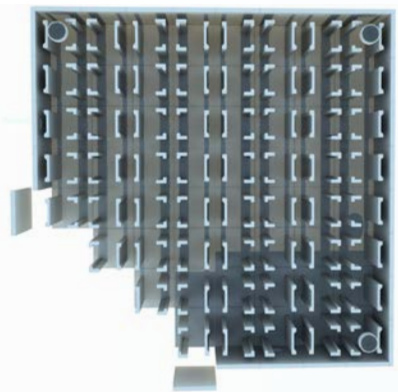
I.D. Module Height (ft.)	Module Storage Capacity (cu. ft.)
4	238
5	298
6	357
7	417
8	477
9	536
10	596
11	655
12	715
13	775
14	834



# CONFIGURATIONS

UrbanPond is a modular precast concrete structure which can be assembled from one to several hundred modules in various shapes and configurations to meet site specific constraints and volume requirements.

Each UrbanPond module is 8 ft. wide x 8 ft. long (O.D.) - specifically designed to fit on a standard flatbed truck. UrbanPond can be configured in a combination of modules from as low as 2 ft. to as high as 14 ft. inside height.



View looking down with top slabs removed.

## URBANPOND ASSEMBLY

The UrbanPond is based on a square tessellation. A tessellation is created when a shape is repeated over and over again covering a plane without any gaps or overlaps. Because of the self-supporting characteristic of tessellated-shaped structures, Bio Clean has been able to further reduce material usage and costs up to 20% without sacrificing structural strength.

As shown in the image to the right, the offset leg configuration of the modules creates a very open and channel-less internal space.

Each module offers access walkways of greater than 3 ft. in each module and between modules for easy inspection and maintenance.

## SINGLE URBANPOND MODULE

Available in heights from 2 ft. to 7 ft.



## LINKUP SLAB

LinkUP Slabs span the open cavities in a 9-module array.



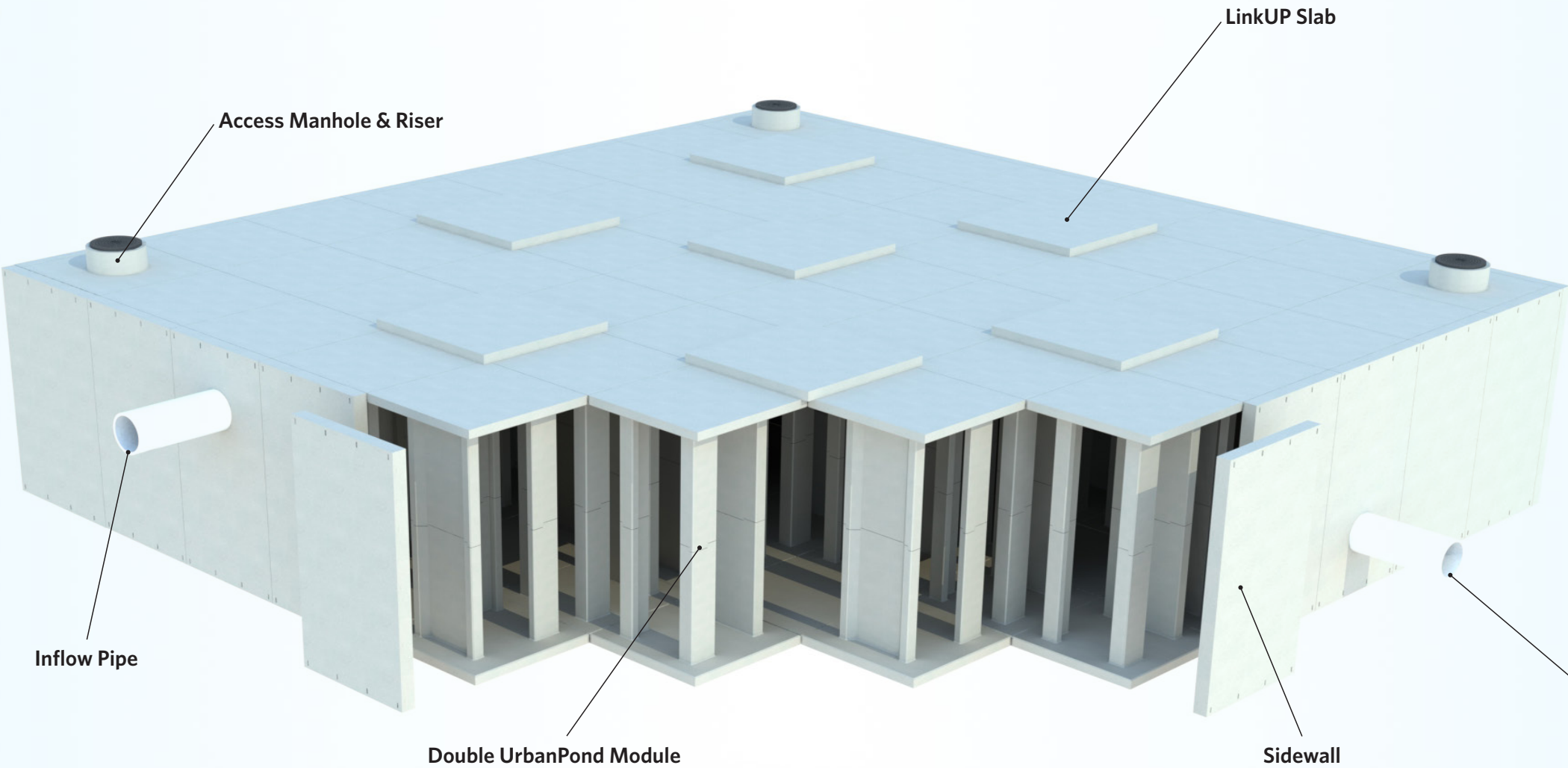
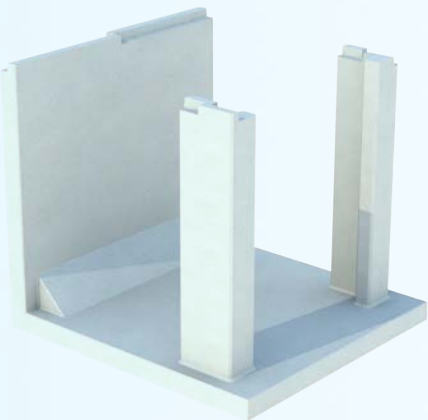
## DOUBLE URBANPOND MODULE

Available in heights from 4 ft. to 14 ft.



## SIDE MODULE

Built-in perimeter wall



UrbanPond can be engineered with optional infiltration openings.



# INSTALLATION



Each Single UrbanPond module is 8 ft. wide by 8 ft. long (O.D.) and easily fits onto a flatbed truck. This size maximizes the space on each truck load. A 10 ft. Double UrbanPond module (two pieces) weighs only 17,000 lbs. total or only 8,500 lbs. per piece.



At least 4 individual pieces can be delivered on a single truckload to reduce shipping costs and minimize crane requirements during install. Most units can be installed using a simple backhoe due to low weights.

# MAINTENANCE



UrbanPond is designed to be easily accessed and maintained from finished surface via multiple access ports. Using a standard vacuum truck, each access point is convenient located, as ports are strategically placed throughout the assembly.



Modules can be modified to act as clear wells or pretreatment chambers for capturing trash, debris, and sediment. This consolidates maintenance requirements to a select few modules. Standard manholes, hinged manholes, and other access hatches are available.





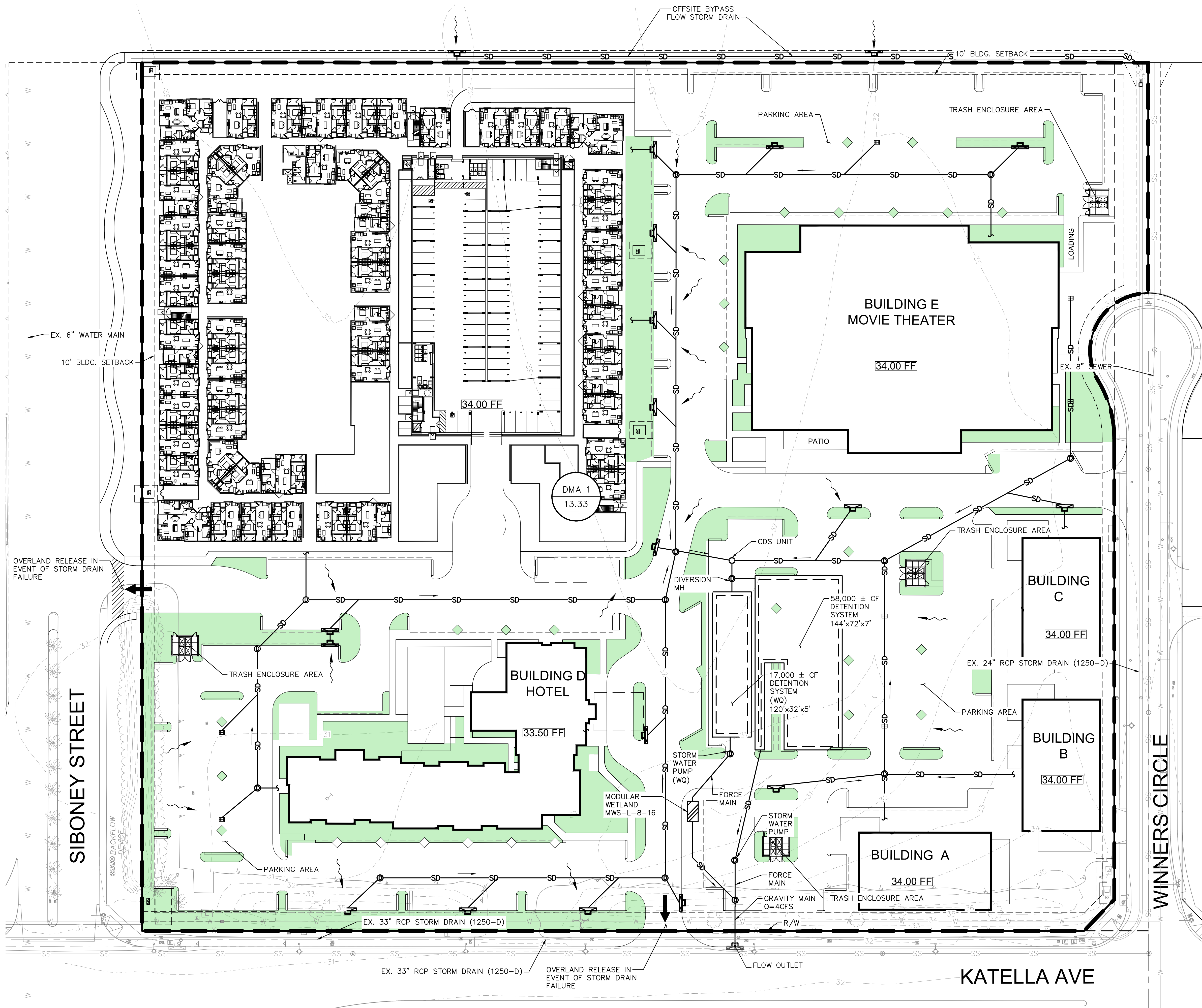


5796 Armada Drive Suite 250  
Carlsbad, CA 92008  
855.566.3938  
[stormwater@forterrabp.com](mailto:stormwater@forterrabp.com)  
[biocleanenvironmental.com](http://biocleanenvironmental.com)

# ATTACHMENT H

CONCEPTUAL WQMP SITE PLAN





## LEGEND

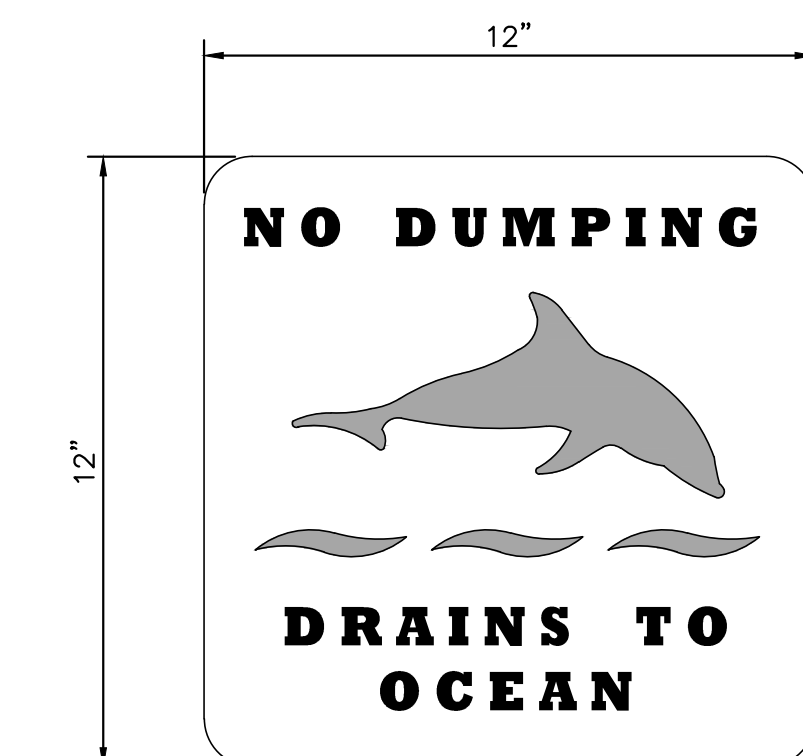
- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOW LINE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING SPOT GRADE (XX.XX TC)  
(XX.XX FS)
- PROPOSED SPOT GRADE (XX.XX TC)  
(XX.XX FS)
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- DIRECTION OF WATER FLOW
- PROPOSED MODULAR WETLAND
- PROPOSED UNDERGROUND DETENTION SYSTEM
- DRAINAGE MANAGEMENT AREA LABEL  
DMA ID  
ACRES
- LANDSCAPED AREA
- DIRECTION OF STORM DRAIN FLOW

## FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD

DMA ID	% Impervious	A (acres)	Adj Volume (cubic feet)	Selected Modular Wetland	Modular Wetland Treatment Volume
DMA 1	90%	13.33	17,000	MWS-L-8-16	20,145

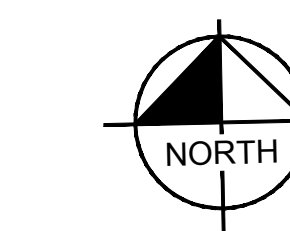
Note: The Cypress Mixed used development is eligible for a water quality Credit of 50%, per the Model WQMP pg. 7.11 3-5-3-5. This development meets the higher density development, mixed use development, and in-fill development requirements.



STENCIL DETAIL  
N.T.S.

REV. DATE: 08.28.2015

ALL UTILITY AND DRAINAGE LINE LOCATIONS,  
DEPTHS, AND SIZES ARE APPROXIMATE.



GRAPHIC SCALE IN FEET  
0 20 40 80

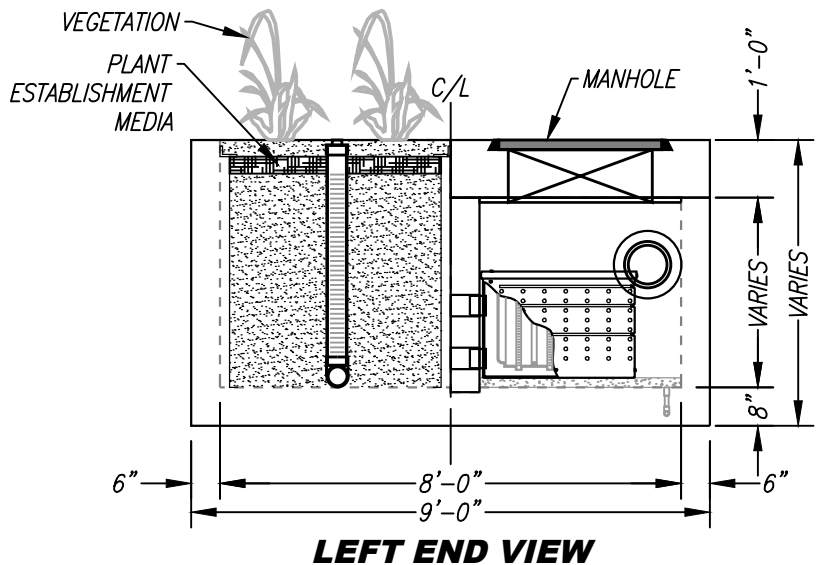
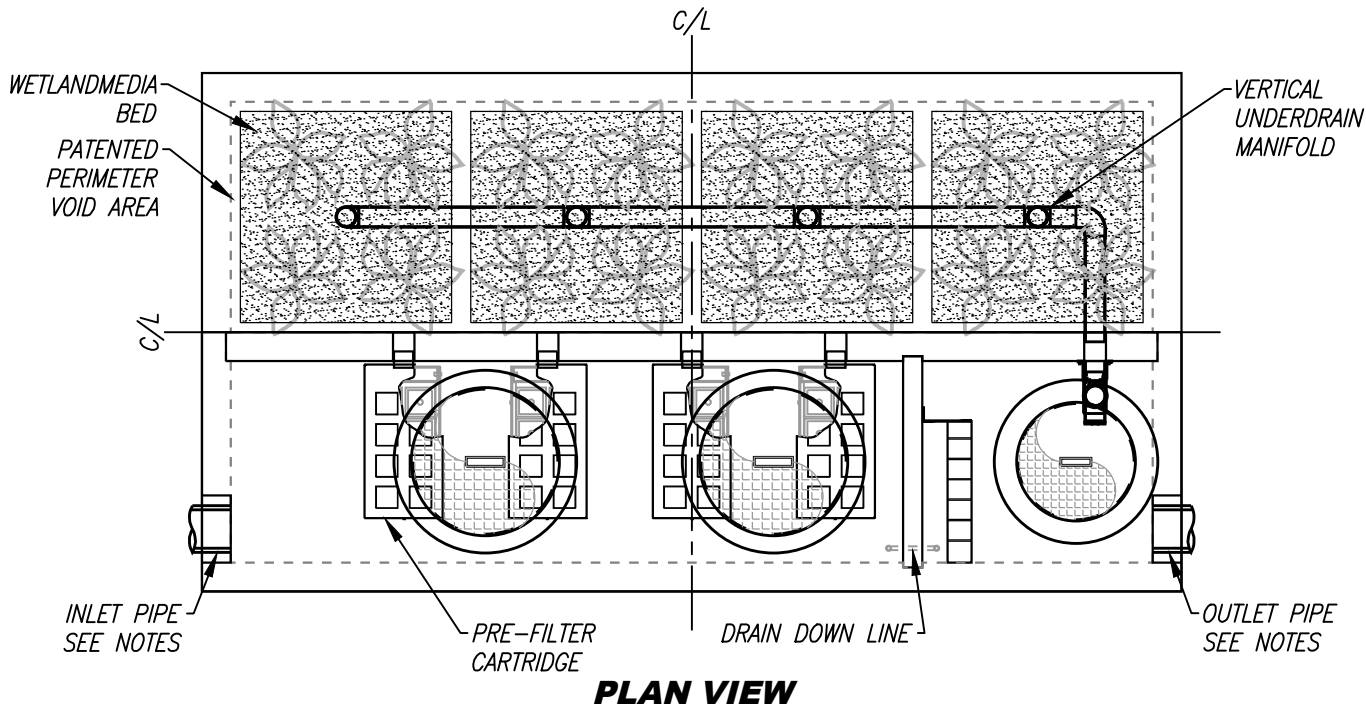
CYPRESS CITY CENTER  
PROPOSED WQMP EXHIBIT  
07/26/2019

**Kimley»Horn**

© 2019 KIMLEY-HORN AND ASSOCIATES, INC.  
765 THE CITY DRIVE, SUITE 200, ORANGE, CA 92668  
PHONE: 714-939-1030 FAX: 714-938-9488



SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A			
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD			
FRAME & COVER	2EA Ø30"		Ø24"
NOTES:			

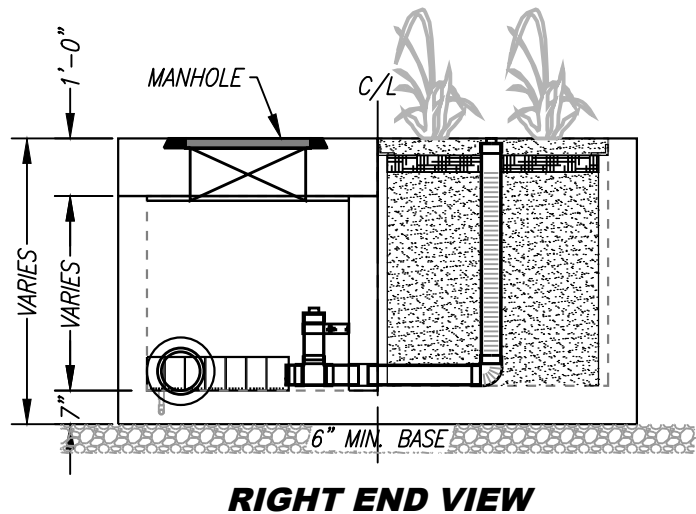
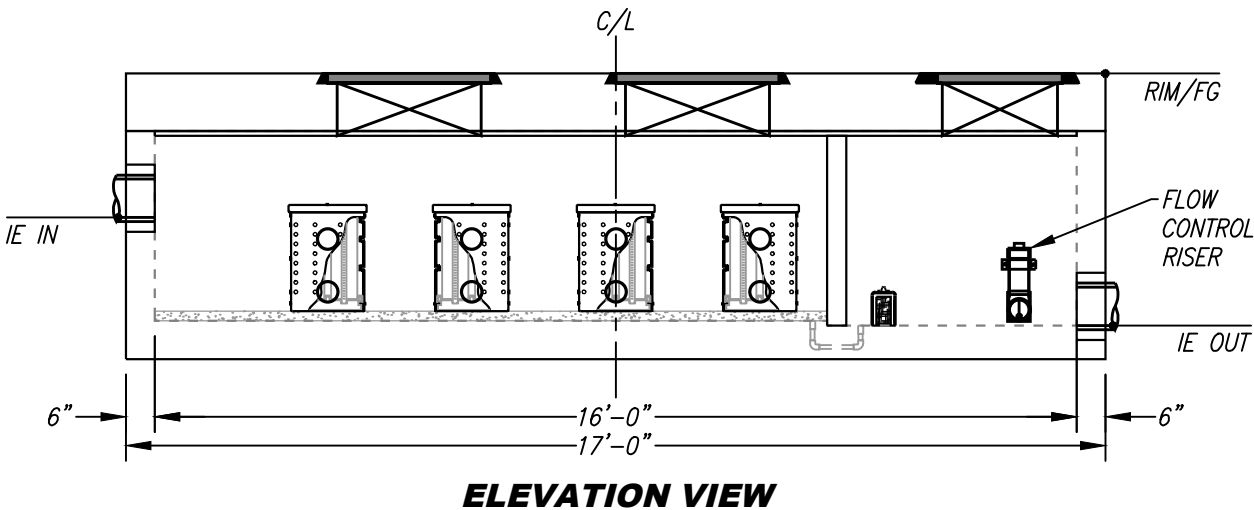


### INSTALLATION NOTES

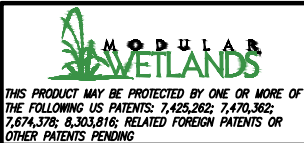
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURERS STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURERS WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

### GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.



TREATMENT FLOW (CFS)	
OPERATING HEAD (FT)	
PRETREATMENT LOADING RATE (GPM/SF)	
WETLAND MEDIA LOADING RATE (GPM/SF)	



PROPRIETARY AND CONFIDENTIAL:  
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF FORTERRA AND ITS COMPANIES. THIS DOCUMENT, NOR ANY PART THEREOF, MAY BE USED, REPRODUCED OR MODIFIED IN ANY MANNER WITH OUT THE WRITTEN CONSENT OF FORTERRA.



**MWS-L-8-16-V**  
**STORMWATER BIOFILTRATION SYSTEM**  
**STANDARD DETAIL**

# ATTACHMENT I

TRANSFER OF RESPONSIBILITY

Exhibit D

Water Quality Management Plan  
Notice of Transfer of Responsibility

Tracking No. Assigned by the City of Anaheim: \_\_\_\_\_

**Submission of this Notice of Transfer of Responsibility constitutes notice to the City of Anaheim that responsibility for the Water Quality Management Plan (“WQMP”) for the subject property identified below, and implementation of that plan, is being transferred from the Previous Owner (and his/her agent) of the site (or a portion thereof) to the New Owner, as further described below.**

**I. Previous Owner/Previous Responsible Party Information**

Company/Individual Name		Contact Person	
Street Address		Title	
City	State	ZIP	Phone

**II. Information about Site Transferred**

Name of Project (if applicable)	
Title of WQMP Applicable to site:	
Street Address of Site (if applicable)	
Planning Area (PA) and/or Tract Number(s) for Site	Lot Numbers (if Site is a portion of a tract)
Date WQMP Prepared (and revised if applicable)	

**III. New Owner/New Responsible Party Information**

Company/Individual Name		Contact Person	
Street Address		Title	
City	State	ZIP	Phone

**IV. Ownership Transfer Information**

General Description of Site Transferred to New Owner	General Description of Portion of Project/Parcel Subject to WQMP Retained by Owner (if any)
Lot/Tract Numbers of Site Transferred to New Owner	
Remaining Lot/Tract Numbers Subject to WQMP Still Held by Owner (if any)	
Date of Ownership Transfer	

**Note: When the Previous Owner is transferring a Site that is a portion of a larger project/parcel addressed by the WQMP, as opposed to the entire project/parcel addressed by the WQMP, the General Description of the Site transferred and the remainder of the project/parcel not transferred shall be set forth as maps attached to this notice. These maps shall show those**



Exhibit D

**portions of a project/parcel addressed by the WQMP that are transferred to the New Owner (the Transferred Site), those portions retained by the Previous Owner, and those portions previously transferred by Previous Owner. Those portions retained by Previous Owner shall be labeled “Previous Owner,” and those portions previously transferred by Previous Owner shall be labeled as “Previously Transferred.”**

**V.      Purpose of Notice of Transfer**

The purposes of this Notice of Transfer of Responsibility are: 1) to track transfer of responsibility for implementation and amendment of the WQMP when property to which the WQMP is transferred from the Previous Owner to the New Owner, and 2) to facilitate notification to a transferee of property subject to a WQMP that such New Owner is now the Responsible Party of record for the WQMP for those portions of the site that it owns.

**VI.      Certifications**

**A.      Previous Owner**

**I certify under penalty of law that I am no longer the owner of the Transferred Site as described in Section II above. I have provided the New Owner with a copy of the WQMP applicable to the Transferred Site that the New Owner is acquiring from the Previous Owner.**

Printed Name of Previous Owner Representative	Title
Signature of Previous Owner Representative	Date

**B.      New Owner**

**I certify under penalty of law that I am the owner of the Transferred Site, as described in Section II above, that I have been provided a copy of the WQMP, and that I have informed myself and understand the New Owner’s responsibilities related to the WQMP, its implementation, and Best Management Practices associated with it. I understand that by signing this notice, the New Owner is accepting all ongoing responsibilities for implementation and amendment of the WQMP for the Transferred Site, which the New Owner has acquired from the Previous Owner.**

Printed Name of New Owner Representative	Title
Signature	Date



# **PRELIMINARY HYDROLOGY AND HYDRAULICS STUDY**

*for*

## **Cypress Mixed Use, Cypress, CA**

4961 Katella Ave., Cypress, CA

PM 96-121

Cypress, CA

July 29, 2019

Revised August 21, 2019

Revised January 27, 2020

Prepared for:

*Shea Properties*

*130 Vantis Dr., Suite 200*

*Aliso Viejo, CA 92656*

*(949) 389-7286*

KHA Project # 094810014

© 2020 Kimley-Horn and Associates, Inc.

## TABLE OF CONTENTS

### **Narrative Sections**

1. Background
2. Existing (Predevelopment) Conditions
3. Proposed (Post-development) Conditions
4. Hydrologic and Hydraulic Design Criteria
5. Conclusions

### **Appendix Sections**

- A. Hydrology Exhibits
  1. Hydrology Map – Existing Condition
  2. Hydrology Map – Proposed Condition
- B. Drainage Calculations
  1. Rational Method Proposed 100-year off-Site Peak Flow Calculations (AES)
  2. On-Site 100-Year Loss Rates (AES)
  3. On-site 100-year Hydrographs (AES)
  4. 100-year Detention Routing
  5. On-Site Storm Drain Capacity Calculations
  6. Scenario 1 Off-Site Overflow Hydraulic Calculations
  7. Scenario 1 Hydrograph for Ponding Timing
  8. Scenario 2 Overflow Pipe Hydraulics Calculations
- C. Storm Drain Record Drawings
- D. Hydrologic Design Criteria
  1. Los Alamitos Race Course Interim Drainage Criteria
  2. Hydromodification Susceptibility Map

**1. Background**

The Cypress Mixed Use development (the “Project”) is a proposed retail, theater, multi-family, and hotel site located in Cypress, CA. The site is bounded by an existing parking lot to the north, Winners Circle on the east, Katella Avenue to the south, and Siboney Street to the west. This development is comprised of approximately 63,975 SF of general commercial, 96,800 SF (120 keys) of hotel, and 251 multi-family apartments. The surface parking field within the interior of the site will serve the hotel, retail and restaurant customers; while an above ground parking structure will accommodate the parking needs of the residential units. The site consists of approximately 13.3 acres.

The site is part of the Cypress Business and Professional Center Specific Plan (CBPC), which was originally approved in 1990 and amended and restated in 2012. The site is located in Area 5 of the CBPC, which is designated for professional offices. A portion of Area 5, east of the Project site, was built out as a Costco-anchored shopping center. The CBPC covers the entire Los Alamitos Race Course (LARC) property and adjacent properties. A Specific Plan Amendment is proposed to allow the multi-family residential use on the proposed Project site.

The Cypress Town Center and Commons Specific Plan (CTC), approved in December 2017, overwrote a portion of the CBPC. While the CTC limits do not include the Project site, the area directly north of the Project site is included in the CTC as a Town Center District.

Previous drainage studies related to the CBPC indicate that the downstream storm drain system is significantly under-capacity and that peak discharges from the Project site and the surrounding areas must be restricted to 0.3 cfs per acre.

**2. Existing (Predevelopment) Conditions**

In the existing condition, the site is a portion of an existing asphalt parking lot serving LARC that extends to the without a visible demarcation of the property line. The overall parking lot area drains to two separate concrete ribbon gutters that flow from north to south. The parking lot pavement sheet flows in east/west orientations to the two ribbon gutters along the length of each gutter. The flow depths in the gutters vary up to 4.5 inches at the northerly site property line.

Each gutter terminates at separate existing catch basins that connect to an existing City 48” storm drain that runs on the north edge Katella Avenue from east to west. These catch basins are located within the proposed Project site boundary. Run-off in excess of the capacity of inlet ponds up in the parking lot before ultimately overflowing and discharging overland at an existing driveway into the Katella Avenue curb and gutter. The on-site ponding is limited to 12 to 18 inches. The ponding has little to no detention effects during large storm events – the 100-year peak will essentially pass through the driveway into the street in the existing condition.

The on-site portion of the existing parking lot is approximately 13.3 acres in area. The off-site area tributary to the ribbon gutters upstream of the site is approximately 11.8 acres. The 13.3-acre Project site area is relatively flat generally sloping from the north to the south with approximately 2 feet of fall across the site.

An existing storm drain in Winners Circle accommodates street drainage and extends north along the Costco property frontage and accommodates drainage from the north side of the Costco property. The approved storm drain plan for the Winners Circle storm drain depicts a proposed extension to the west across the existing parking lot. The drain would be located just north of the Project site. Only the portions of the drain in Winners Circle and adjacent to Costco were actually constructed. The proposed drain extension is designed to accommodate the restricted flows (0.3 cfs/acre) from the property north of the Project site.

### **3. Proposed (Post-development) Conditions**

The proposed hydrology analysis includes an evaluation of the on-site hydrology and two different scenarios for the conveyance of off-site flows that drain toward the site. The on-site drainage system is considered a permanent improvement that will exist as long as the Project exists unless replaced by an equivalent system. The off-site flow conveyances include some components that are assumed to be permanent along with temporary improvements that will remain in place until such time that the off-site tributary areas are developed in the future.

#### On-Site Hydrology

In the proposed condition, drainage will flow away from the proposed buildings and into one of several low points across the site, as depicted on the proposed hydrology map. Runoff will be collected into an on-site private underground storm drain system. The allowable discharge from the site is restricted to 0.3 cfs/acre per City requirements. To accommodate developed peak flows that exceeds the allowable discharge, the project storm water management system incorporates on-site underground detention basins. These detention basins have been designed to attenuate the 100-year storm event peak flow difference between the developed flow from the project and allowable discharge flow. See the proposed hydrology map for the conceptual locations of the basins. A storm drain pump will be used to drain the detention systems and meet the 0.3 cfs/acre runoff restriction by limiting the pump discharge to 4.0 cfs. The site will ultimately discharge via a new storm drain connection to the existing 48" Katella storm drain.

In addition to the site high-flow detention system, a low-flow detention system will be installed to capture and treat the "first flush" storm event. A bifurcation manhole will be placed upstream of the first flush detention system and divert the first flush volume into a separate detention system. This system will be pumped separately and the runoff will slowly discharge through a manufactured bioretention system over a 48-hour period. The outlet pipe from the biofiltration system will connect separately to the existing 48" Katella Avenue storm drain.

Off-Site Hydrology Design Scenario 1-Pipe and Surface Conveyance

Scenario 1 would consist of a combination of an extension of the Winners Circle storm drain to the west that would convey off-site flows with a capacity of up to 0.3 cfs per acre (3.53 cfs total). An overland flow path would direct flows in excess of 0.3 cfs per acre to the west toward Siboney Avenue.

The existing off-site flows draining toward the site would be captured by extending the Winners Circle drain, per the approved plans, to two proposed catch basins along the north property line and routed through a proposed 18" storm drain draining to the east, ultimately connecting to the existing 24" storm drain in Winners Circle. The existing flow depth in the existing ribbon gutters reached 4.5 inches during the 100-year storm. Corresponding depths during the 2-year and 10-year storm were not analyzed.

In the event run-off from the area north of the site exceeds the capacity of the catch basins and drain, proposed curb and gutter and an approximately 2 foot-high berm installed north of the property line would block offsite flow from entering the site and direct flows toward the two catch basins proposed on the Winners Circle Storm drain extension. The off-site flows would pond by variable depths along the north property line before discharging to the west, into Siboney Street. The maximum instantaneous depth ranges for multiple storm events is listed below. These depths do not threaten structures.

<b>Table 1: Overflow Depths</b>			
Storm Event	Maximum Overflow (cfs)	Maximum Instantaneous Overflow Depth Range	Existing Condition Flow Depth at PL
2	9.38	2.5" – 10"	N/A
10	19.78	3.5" – 11.5"	N/A
100	31.55	4" – 13"	0"-4.5"

Some regrading of the existing off-site parking lot along the proposed curb and gutter would be proposed. This would keep the ponding to the levels described in the table above. The ponding would occur only during storms that produce more runoff than 0.3 cfs per acre and only during the peak intensity of the storm event. For the 100-year storm, the runoff exceeds the proposed storm drain capacity of 0.3 cfs per acre for approximately 3-4 hours (from hour 13.75 to hour 17.50 of the

storm event.) In addition, the off-site hydrograph peak is very sharp. The overflow rate exceeds 25% of the maximum overflow flow rate for approximately 30 minutes, with timing centered around the time of the maximum overflow rate. For the 100-year storm, the maximum overflow rate is 31.55 cfs. For all but 30 minutes of the 100-year storm event, the overflow rate is less than 8 cfs.

Once the overflows reach Siboney Street, they would ultimately flow overland to the south into Katella Avenue. Siboney Street would be reconstructed with a crown that will contain the overflows on the east side of the street section, adjacent to the site, and convey the flows to the south, decreasing the burden on the existing trench drains on the west side of Siboney Street.

This overflow pattern would be an interim condition until the area to the north has been developed and a storm water management and detention system is constructed for the future development. The storm water management system for the future site would likely connect to the extended Winners Circle storm drain that would be extended as part of Scenario 1. The runoff diverted around the site in Scenario 1 would have reached Katella Avenue in the existing condition at a similar location. Instead of overflowing at the existing catch basins and running off through the existing project driveway, the overflows would instead flow into Katella Avenue at Siboney Street.

#### Off-Site Hydrology Design Scenario 2-Pipe Conveyance Only

Scenario 2 consists of the same curb and gutter, 2 foot-high berm, and catch basins along the northerly property line as the one proposed in scenario 1. Rather than an off-site overflow drainage pattern for storms that exceed 0.3 cfs per acre, the overflows will be conveyed in an underground storm drain across the project site and discharged through a proposed catch basin in Katella Avenue close to the existing driveway location.

The overflow drain would act as a reverse siphon under the site. No on-site flows would commingle with the off-site flows. A small diameter connection to the Katella storm drain, allowing approximately 0.3 cfs per acre (3.53 cfs total). The remaining 31.55 cfs during the 100-year storm event would discharge through the Katella Avenue catch basin into the Katella Avenue curb and gutter. The overflow pipe system would include a 48-inch diameter pipe in a north-south alignment across the site, a 24-inch diameter storm drain extended west to the west overflow catch basin, and a 36-inch diameter storm drain extended east to the east overflow catch basin. The storm drain sizes are based on an assumed water surface at the top of curb elevation on Katella Avenue.

This overflow pattern would also be an interim condition until the area to the north has been developed and a storm water management and detention system is constructed for the future development. The storm water management system for the future site would likely connect to the extended Winners Circle storm drain that the adjacent owner would have to install. The overflow system proposed in Scenario 2 would be abandoned. The runoff diverted under the site in Scenario 2 would have reached Katella Avenue in the existing condition at a similar location.

#### Proposed Condition Hydrology Summary

Since the on-site portion of the area tributary to Katella Avenue is limited to 4.0 cfs connecting directly into the storm drain, the amount of flows that will reach the Katella Avenue curb and gutter is greatly reduced compared to the existing condition. Additionally, both off-site hydrology design scenarios allow for passage of the allowable off-site flow rate (3.53 cfs) into the City's underground storm drain location with overflows in excess of 3.53 cfs contained and directed to the Katella Avenue curb and gutter in a similar location to the existing condition.

#### **4. Hydrologic and Hydraulic Design Criteria**

##### Hydrologic Design Criteria

A 100-year storm event was used to model the peak flow rates since the existing storm drain systems are modeled using the 100-year storm as a design criteria. Soil type D underlies the Site based on input from the soils engineer. The developed site was modeled as 100% impervious conservatively. AES software was used to determine the proposed condition peak flow rates. The site was modeled as a single area with an assumed 10-minute time of concentration. This time of concentration is a reasonable assumption for a 13-acre site. The site plan is conceptual in nature at this stage; therefore, a more generalized single area is more appropriate than detailed subarea delineations. The final hydrology study will analyze the ultimate site plan with multiple subareas. For the preliminary study, the primary goal is to size the on-site detention system and design the temporary diversion for the off-site tributary flows.

The site is located at the edge of the hydromodification boundary line as defined in the Orange County Technical Guidance Document. The area just east of the site drains easterly toward a hydromodification-susceptible watershed. The site connects to a storm drain system that drains westerly toward the Coyote Creek/San Gabriel River watershed that is not susceptible to hydromodification. The site is not in a hydromodification zone; therefore, only the 100-year storm is analyzed.

##### Software and Methodology

AES RATSC rational method software was used to calculate the peak off-site tributary flow rates. AES computational hydrology software is used to calculate the on-site loss rates and on-site hydrograph. A 10-minute time of concentration was assumed for the on-site hydrograph along with a 100% impervious site, which is a conservative assumption. PondPack was used to route the on-site hydrograph through the proposed detention system with a pump modeled that discharges up to 4.0 cfs.

##### Pipe Hydraulic Design Criteria



Hydraulic calculations were performed for the main storm drain pipes utilizing Flowmaster, developed by Bentley. The software utilizes Manning's equation to determine acceptable friction slopes for design. An allowable friction slope of 0.3% was used to keep the hydraulic grades below ground surface. Catch basins will be sized to accommodate the 100-year storm at the time of final design

#### Allowable Connection Flow Rates

The proposed flow rate at the connection point will not exceed the allowable Q100 flow rate of 0.3 cfs/acre. The Project site is 13.3 acres; therefore, the allowable discharge rate is 4.0 cfs. In lieu of an existing hydrology calculation setting the allowable flow rate for discharge, the more stringent restricted drain capacity criteria is applied.

## **5. Conclusions**

A comparison table of the allowable and proposed flow rates follows:

<b>Table 2: Hydrologic Comparison Table – Proposed Site</b>	
<b>Drainage Condition</b>	<b>100-Year Storm</b>
Developed Undetained	49.8 cfs
Developed Detained	4.0 cfs
Allowable On-Site Discharge*	4.0 cfs
Difference	0.0 cfs
Required Detention Volume	64,000 Cubic Ft.
Total On-Site Runoff Volume	5.57 ac-ft

<b>Table 3: Hydrologic Comparison Table – Upstream Tributary Area</b>	
<b>Drainage Condition</b>	<b>100-Year Storm</b>
Off-Site Peak Flow Rate	34.96 cfs
Off-Site Drain Capacity – Winners Circle Extension	3.54 cfs
Off-Site Surface Overflow – West toward Siboney	31.42 cfs

\*Note: Allowable 100-year storm is based on the City requirement of 0.3 cfs/acre discharge.

Since the proposed, detained on-site flow rates (4.0 cfs) are equal to the allowable flow rate (4.0 cfs) during the 100-year storm event, the site complies with the hydrologic design requirement. The detention basin is able to accommodate the 100-year storms without exceeding the detention basin capacity or the allowable connection flow rate. An examination of the undetained inflow hydrograph shows that the undetained discharge would exceed the 4.0 cfs allowable discharge from hour 13.67 to hour 17.50. The detention system will fill for an approximate 4-hour period during the 100-year storm.

In addition, the pipes will be sized according to the table below based on the pipe hydraulic calculations. The flowrate tributary to a pipe size will not exceed the tabulated values listed below:

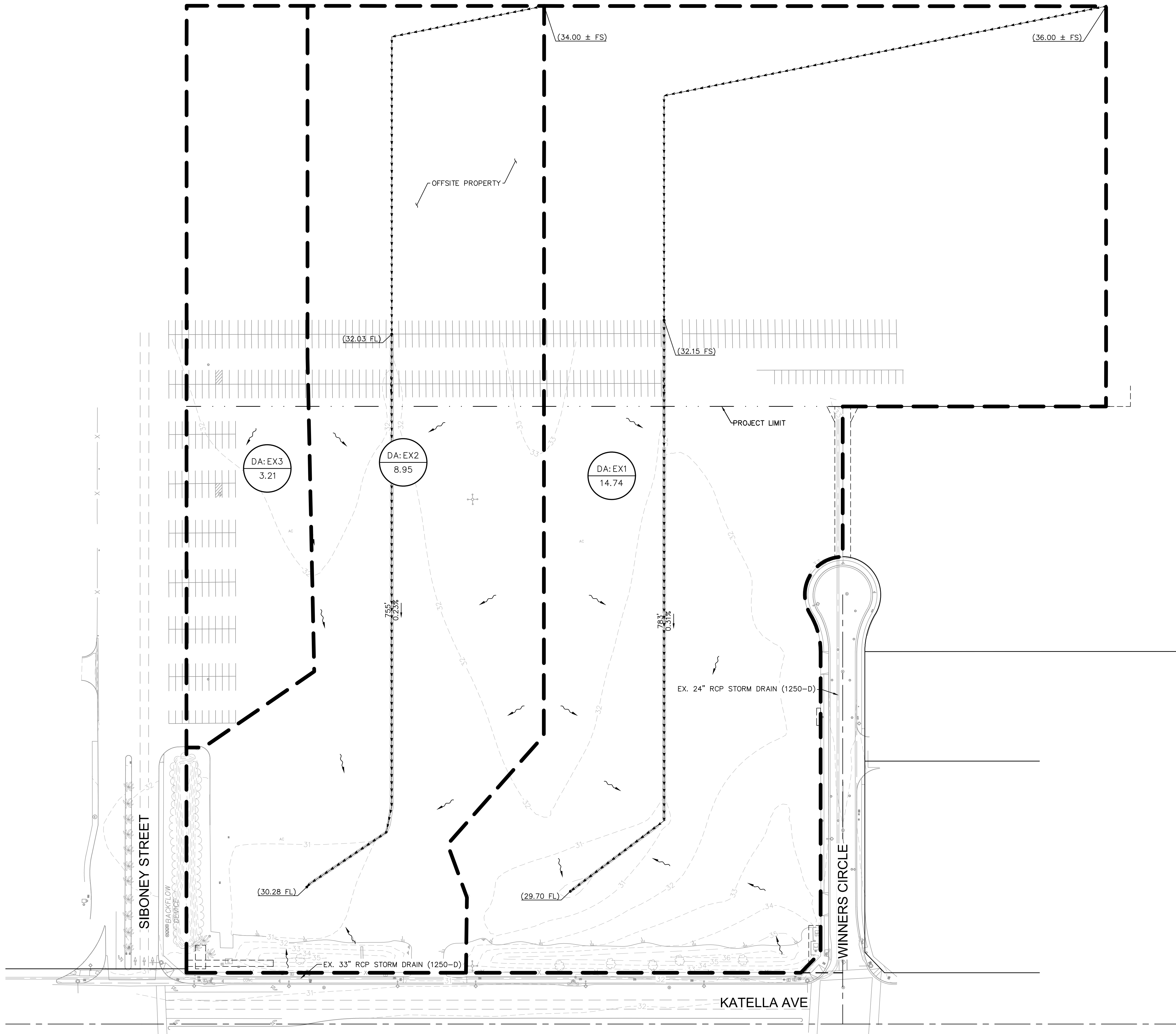
<b>Table 2: Pipe Hydraulics Table</b>		
<b>Pipe Size</b>	<b>Material</b>	<b>Capacity at 0.3% Friction Slope</b>
12"	HDPE (n=0.011)	2.3 CFS
18"	HDPE (n=0.011)	6.8 CFS
24"	HDPE (n=0.011)	14.6 CFS

30"	HDPE (n=0.011)	26.6 CFS
36"	HDPE (n=0.011)	43.2 CFS
42"	HDPE (n=0.011)	65.1 CFS
48"	HDPE (n=0.011)	93.0 CFS

CEQA Drainage Criteria: An existing hydrology analysis was not prepared due to the more restrictive restricted drainage criteria based on the limited storm drain capacity. The existing flow rate can be approximated by adding the 49.8 cfs on-site undetained flow rate to the 34.96 cfs off-site flow rate, for an existing total of approximately 84.9 cfs. In the proposed condition, the collective discharge can be approximated by adding the 4.0 cfs on-site detained flow rate to the 34.96 cfs off-site flow rate for a proposed total of approximately 39.0 cfs. This is a significant decrease in runoff from the existing condition, and the site will reduce the amount of runoff reaching the Katella Avenue storm drain and street section.

# **ATTACHMENT A**

**Hydrology Exhibits**



**LEGEND**

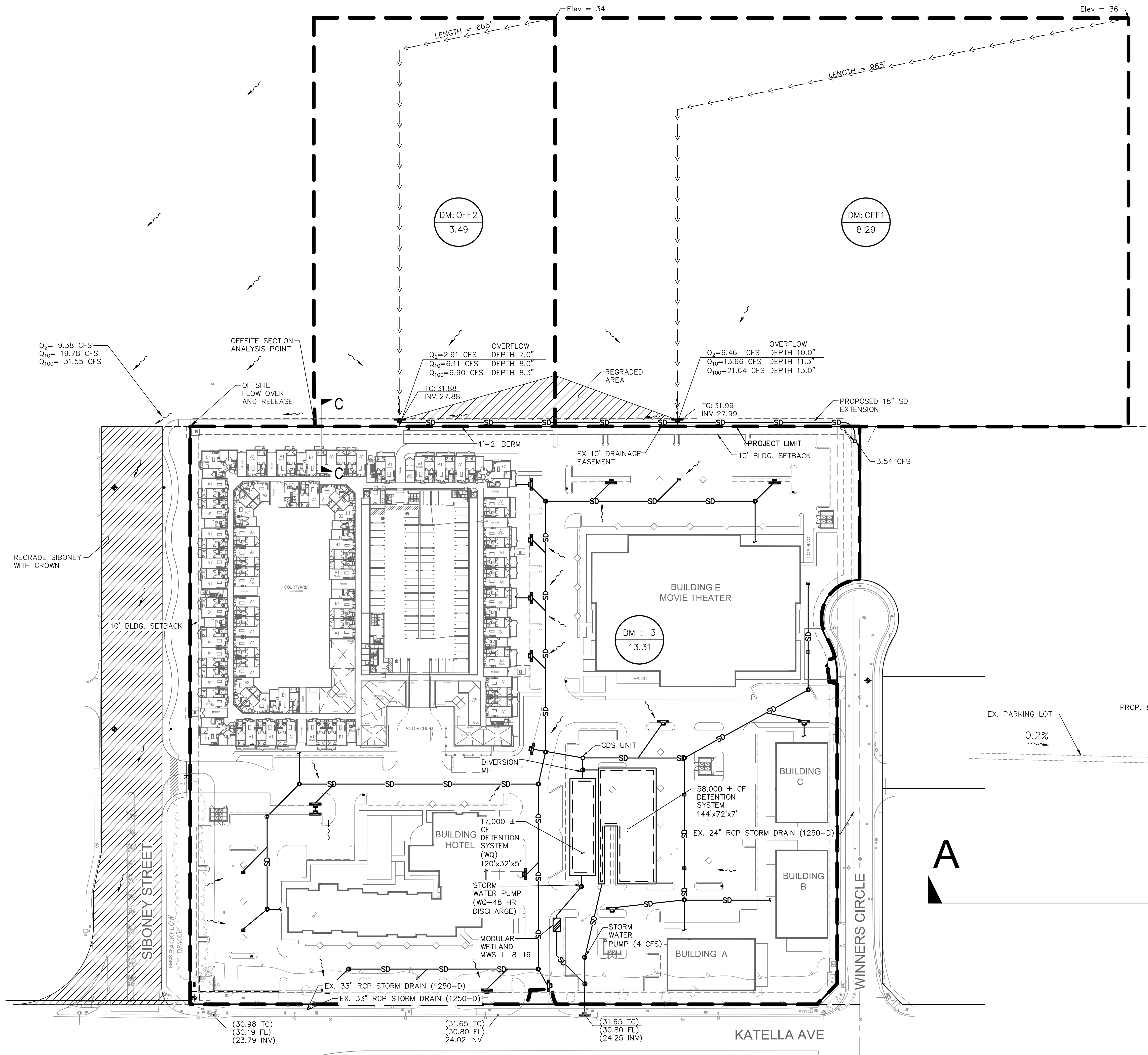
- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- EXISTING CONTOURS
- FLOW LINE
- EXISTING STORM DRAIN
- PROJECT LIMIT
- EXISTING SPOT GRADE
- EXISTING CATCH BASIN
- EXISTING STORM DRAIN MANHOLE
- DIRECTION OF WATER FLOW
- DRAINAGE AREA LABEL

**GRAPHIC SCALE IN FEET**

0 30 60 120

**NORTH**

CYPRESS MIXED-USE  
EXISTING HYDROLOGY MAP  
07/03/2019



**LEGEND**

RIGHT OF WAY/ PROPERTY LINE

CENTERLINE

DRAINAGE MANAGEMENT BOUNDARY

EXISTING CONTOURS

PROPOSED CONTOURS

FLOW LINE

BIOSWALE

EXISTING STORM DRAIN

PROPOSED STORM DRAIN

EXISTING SPOT GRADE  
(XX.XX TC)  
(XX.XX FS)

PROPOSED SPOT GRADE  
(XX.XX TC)  
(XX.XX FS)

EXISTING CATCH BASIN

PROPOSED CATCH BASIN

EXISTING STORM DRAIN MANHOLE

PROPOSED STORM DRAIN MANHOLE

DIRECTION OF WATER FLOW

PROPOSED MODULAR WETLAND

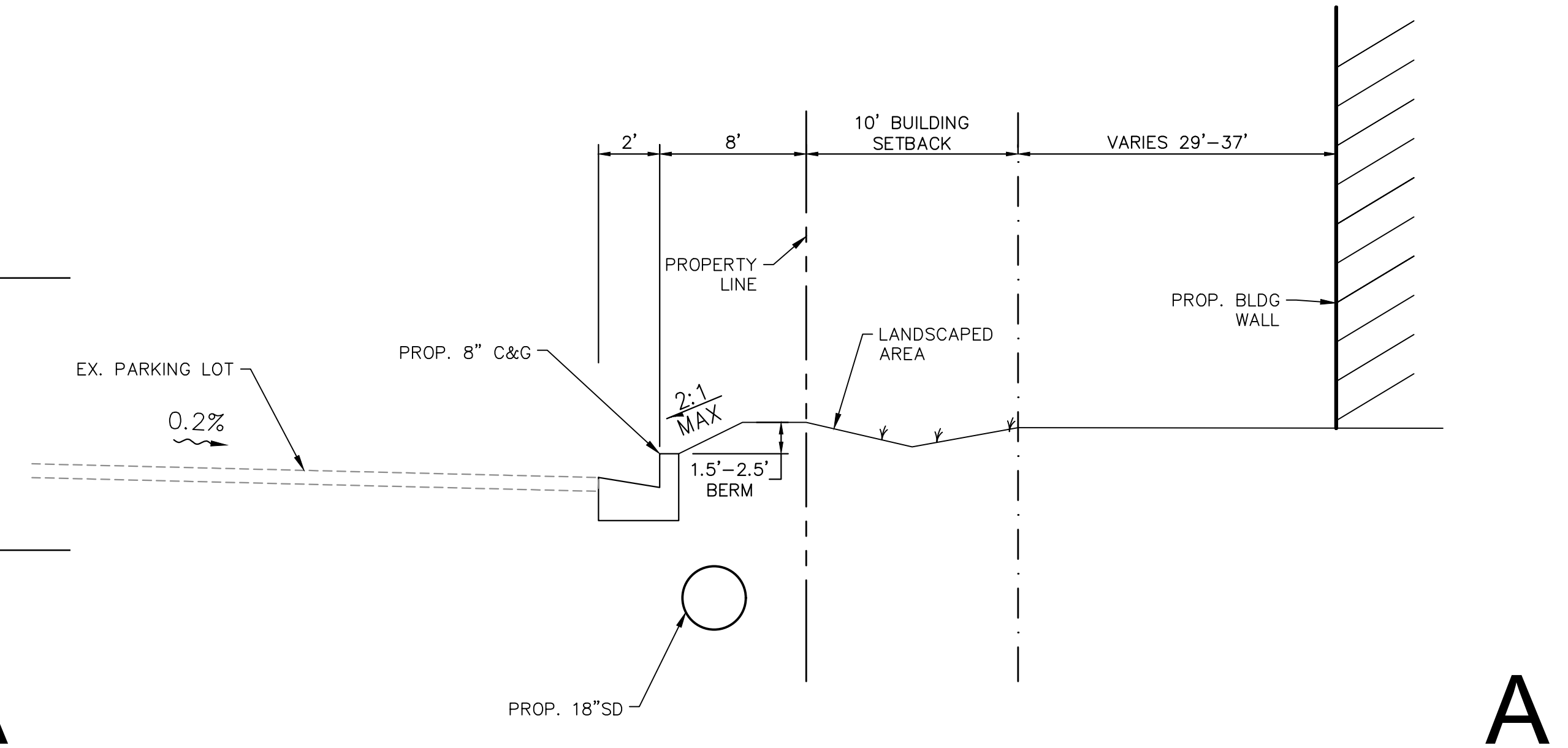
PROPOSED UNDERGROUND DETENTION SYSTEM

AREA TO BE REGRADED

DMA ID  
ACRES

DRAINAGE MANAGEMENT AREA LABEL

**FLOOD ZONE**  
FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD



**SECTION A-A  
NOT TO SCALE**

NORTH

0

30

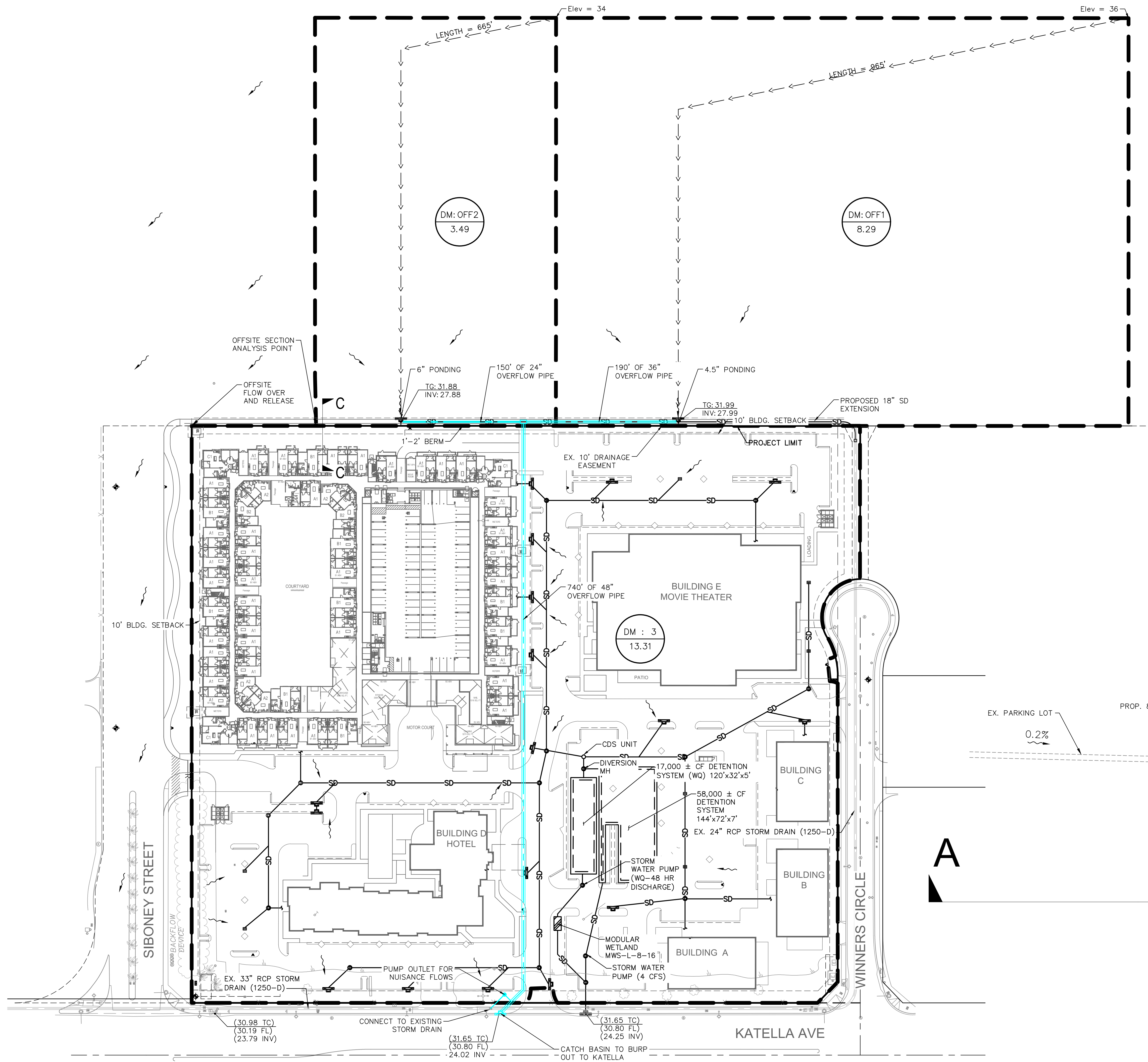
60

120

GRAPHIC SCALE IN FEET

CYPRESS MIXED-USE  
PROPOSED HYDROLOGY MAP  
SCENARIO 1  
01/27/2020



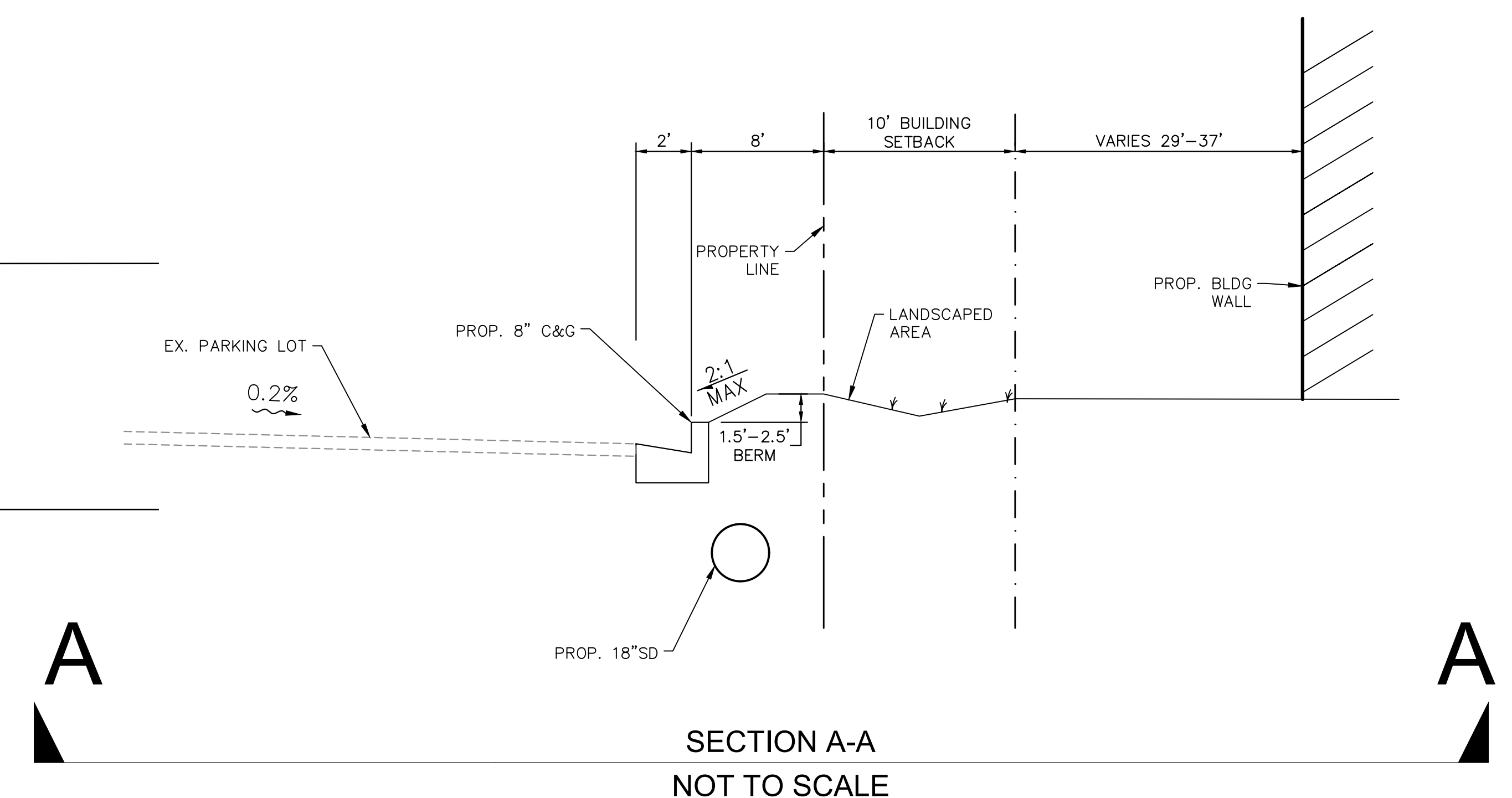


## LEGEND

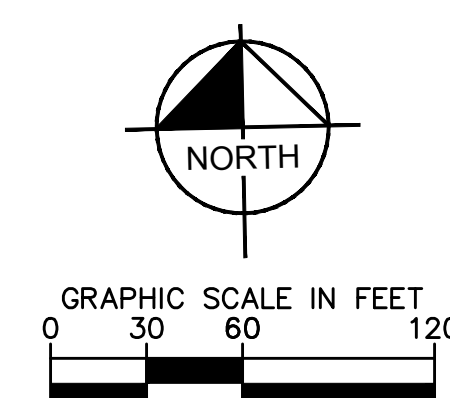
- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOW LINE
- BIOSWALE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING SPOT GRADE (XX.XX TC) (XX.XX FS)
- PROPOSED SPOT GRADE (XX.XX TC) (XX.XX FS)
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- DIRECTION OF WATER FLOW
- PROPOSED MODULAR WETLAND
- PROPOSED UNDERGROUND DETENTION SYSTEM
- DMA ID ACRES

## FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD



SECTION A-A  
NOT TO SCALE



CYPRESS MIXED-USE  
PROPOSED HYDROLOGY MAP  
SCENARIO 2  
01/27/2020

# **ATTACHMENT B**

## **Drainage Calculations**



\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE  
 (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)  
 (c) Copyright 1983-2011 Advanced Engineering Software (aes)  
 Ver. 18.0 Release Date: 07/01/2011 License ID 1499

Analysis prepared by:

Kimley-Horn and Associates, Inc.  
 765 The City Drive  
 Suite 200  
 Orange, CA 92868

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* SHEA CYPRESS \*  
 \* OFFSITE HYDROLOGY ONLY: DM: OFF1 \*  
 \* PRELIMINARY HYDROLOGY \*  
 \*\*\*\*\*

FILE NAME: CYPR\_01.DAT  
 TIME/DATE OF STUDY: 15:36 07/25/2019

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--\*TIME-OF-CONCENTRATION MODEL\*--

USER SPECIFIED STORM EVENT(YEAR) = 100.00  
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95  
 \*DATA BANK RAINFALL USED\*  
 \*ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD\*

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00 0.0313 0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN  
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

\*\*\*\*\*

## CYPR\_01.RES

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<  
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 300.00  
ELEVATION DATA: UPSTREAM(FEET) = 36.00 DOWNSTREAM(FEET) = 35.70

$T_c = K * [(LENGTH^{.66} / (ELEVATION\ CHANGE))]^{.20}$

SUBAREA ANALYSIS USED MINIMUM  $T_c$ (MIN.) = 11.850

\* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 3.774

SUBAREA  $T_c$  AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	$F_p$ (INCH/HR)	$A_p$ (DECIMAL)	SCS CN	$T_c$ (MIN.)
COMMERCIAL	D	0.40	0.20	0.100	91	11.85

SUBAREA AVERAGE PERVIOUS LOSS RATE,  $F_p$ (INCH/HR) = 0.20

SUBAREA AVERAGE PERVIOUS AREA FRACTION,  $A_p$  = 0.100

SUBAREA RUNOFF(CFS) = 1.35

TOTAL AREA(ACRES) = 0.40 PEAK FLOW RATE(CFS) = 1.35

\*\*\*\*\*

FLOW PROCESS FROM NODE 101.00 TO NODE 102.00 IS CODE = 91

>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<

UPSTREAM NODE ELEVATION(FEET) = 35.70

DOWNSTREAM NODE ELEVATION(FEET) = 31.99

CHANNEL LENGTH THRU SUBAREA(FEET) = 665.00

"V" GUTTER WIDTH(FEET) = 4.00 GUTTER HIKE(FEET) = 0.125

PAVEMENT LIP(FEET) = 0.400 MANNING'S N = .0150

PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.01000

MAXIMUM DEPTH(FEET) = 1.00

\* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 3.254

SUBAREA LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	$F_p$ (INCH/HR)	$A_p$ (DECIMAL)	SCS CN
COMMERCIAL	D	7.89	0.20	0.100	91

SUBAREA AVERAGE PERVIOUS LOSS RATE,  $F_p$ (INCH/HR) = 0.20

SUBAREA AVERAGE PERVIOUS AREA FRACTION,  $A_p$  = 0.100

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 13.13

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.17

AVERAGE FLOW DEPTH(FEET) = 0.66 FLOOD WIDTH(FEET) = 30.53

"V" GUTTER FLOW TRAVEL TIME(MIN.) = 3.50  $T_c$ (MIN.) = 15.35

SUBAREA AREA(ACRES) = 7.89 SUBAREA RUNOFF(CFS) = 22.97

EFFECTIVE AREA(ACRES) = 8.29 AREA-AVERAGED  $F_m$ (INCH/HR) = 0.02

AREA-AVERAGED  $F_p$ (INCH/HR) = 0.20 AREA-AVERAGED  $A_p$  = 0.10

TOTAL AREA(ACRES) = 8.3 PEAK FLOW RATE(CFS) = 24.13

END OF SUBAREA "V" GUTTER HYDRAULICS:

CYPR\_01.RES

DEPTH( FEET ) = 0.76 FLOOD WIDTH( FEET ) = 50.94  
FLOW VELOCITY( FEET/SEC. ) = 2.91 DEPTH\*VELOCITY( FT\*FT/SEC ) = 2.21  
LONGEST FLOWPATH FROM NODE 100.00 TO NODE 102.00 = 965.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA( ACRES ) = 8.3 TC( MIN. ) = 15.35  
EFFECTIVE AREA( ACRES ) = 8.29 AREA-AVERAGED  $F_m$ ( INCH/HR ) = 0.02  
AREA-AVERAGED  $F_p$ ( INCH/HR ) = 0.20 AREA-AVERAGED  $A_p$  = 0.100  
PEAK FLOW RATE( CFS ) = 24.13

=====

=====

END OF RATIONAL METHOD ANALYSIS



\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE  
 (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)  
 (c) Copyright 1983-2011 Advanced Engineering Software (aes)  
 Ver. 18.0 Release Date: 07/01/2011 License ID 1499

Analysis prepared by:

Kimley-Horn and Associates, Inc.  
 765 The City Drive  
 Suite 200  
 Orange, CA 92868

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* SHEA CYPRESS \*  
 \* OFFSITE HYDROLOGY ONLY: OFFSITE DM: OFF2 \*  
 \* PRELIMINARY HYDROLOGY \*  
 \*\*\*\*\*

FILE NAME: CYPR\_02.DAT

TIME/DATE OF STUDY: 15:43 07/25/2019

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

=====

--\*TIME-OF-CONCENTRATION MODEL\*--

USER SPECIFIED STORM EVENT(YEAR) = 100.00

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95

\*DATA BANK RAINFALL USED\*

\*ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD\*

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00 0.0313 0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN  
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

\*\*\*\*\*

## CYPR\_02.RES

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<  
>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH(FEET) = 300.00  
ELEVATION DATA: UPSTREAM(FEET) = 34.00 DOWNSTREAM(FEET) = 33.70

$T_c = K * [(LENGTH ** 3.00) / (ELEVATION CHANGE)] ** 0.20$

SUBAREA ANALYSIS USED MINIMUM  $T_c$ (MIN.) = 11.850

\* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 3.774

SUBAREA  $T_c$  AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN	$T_c$ (MIN.)
COMMERCIAL	D	0.98	0.20	0.100	91	11.85

SUBAREA AVERAGE PVIOUS LOSS RATE,  $F_p$ (INCH/HR) = 0.20

SUBAREA AVERAGE PVIOUS AREA FRACTION,  $A_p$  = 0.100

SUBAREA RUNOFF(CFS) = 3.31

TOTAL AREA(ACRES) = 0.98 PEAK FLOW RATE(CFS) = 3.31

\*\*\*\*\*

FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 91

>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<

UPSTREAM NODE ELEVATION(FEET) = 33.70

DOWNSTREAM NODE ELEVATION(FEET) = 31.88

CHANNEL LENGTH THRU SUBAREA(FEET) = 365.00

"V" GUTTER WIDTH(FEET) = 4.00 GUTTER HIKE(FEET) = 0.125

PAVEMENT LIP(FEET) = 0.400 MANNING'S N = .0150

PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.01000

MAXIMUM DEPTH(FEET) = 1.00

\* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 3.505

SUBAREA LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
COMMERCIAL	D	2.51	0.20	0.100	91

SUBAREA AVERAGE PVIOUS LOSS RATE,  $F_p$ (INCH/HR) = 0.20

SUBAREA AVERAGE PVIOUS AREA FRACTION,  $A_p$  = 0.100

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.24

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.74

AVERAGE FLOW DEPTH(FEET) = 0.54 FLOOD WIDTH(FEET) = 7.15

"V" GUTTER FLOW TRAVEL TIME(MIN.) = 1.63  $T_c$ (MIN.) = 13.48

SUBAREA AREA(ACRES) = 2.51 SUBAREA RUNOFF(CFS) = 7.87

EFFECTIVE AREA(ACRES) = 3.49 AREA-AVERAGED  $F_m$ (INCH/HR) = 0.02

AREA-AVERAGED  $F_p$ (INCH/HR) = 0.20 AREA-AVERAGED  $A_p$  = 0.10

TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 10.95

END OF SUBAREA "V" GUTTER HYDRAULICS:

CYPR\_02.RES

DEPTH(FEET) = 0.63 FLOOD WIDTH(FEET) = 25.71  
FLOW VELOCITY(FEET/SEC.) = 3.16 DEPTH\*VELOCITY(FT\*FT/SEC) = 2.00  
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 202.00 = 665.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 3.5 TC(MIN.) = 13.48  
EFFECTIVE AREA(ACRES) = 3.49 AREA-AVERAGED Fm(INCH/HR)= 0.02  
AREA-AVERAGED Fp(INCH/HR) = 0.20 AREA-AVERAGED Ap = 0.100  
PEAK FLOW RATE(CFS) = 10.95

=====

=====

END OF RATIONAL METHOD ANALYSIS



=====

\*\*\* NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)  
AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 5.63 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp(in./hr.)	YIELD
1	13.31	10.00	56. (AMC II)	0.300	0.916

TOTAL AREA (Acres) = 13.31

AREA-AVERAGED LOSS RATE,  $\bar{F}_m$  (in./hr.) = 0.030

AREA-AVERAGED LOW LOSS FRACTION,  $\bar{Y}$  = 0.084

=====

\*\*\* NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)  
AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 5.63 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp(in./hr.)	YIELD
1	13.31	10.00	56. (AMC II)	0.300	0.916

TOTAL AREA (Acres) = 13.31

AREA-AVERAGED LOSS RATE,  $\bar{F}_m$  (in./hr.) = 0.030

AREA-AVERAGED LOW LOSS FRACTION,  $\bar{Y}$  = 0.084

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* Shea Cypress \*

\* Onsite Proposed Unit Hydrograph - DM 3 \*

\* Preliminary Hydrology \*

\*\*\*\*\*

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 13.31

SOIL-LOSS RATE,  $F_m$ , (INCH/HR) = 0.030

LOW LOSS FRACTION = 0.084

TIME OF CONCENTRATION(MIN.) = 10.00

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

ORANGE COUNTY "VALLEY" RAINFALL VALUES ARE USED

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 5.22

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 1.03

\*\*\*\*\*

TIME (HOURS)	VOLUME (AF)	Q (CFS)	0.	12.5	25.0	37.5	50.0
-----------------	----------------	------------	----	------	------	------	------



2019.07.25 - Onsite DMA 3 Proposed 100 yr.txt

---

0.17	0.0066	0.96	Q	.	.	.	.
0.33	0.0199	0.96	Q	.	.	.	.
0.50	0.0332	0.97	Q	.	.	.	.
0.67	0.0467	0.98	Q	.	.	.	.
0.83	0.0602	0.99	Q	.	.	.	.
1.00	0.0738	0.99	Q	.	.	.	.
1.17	0.0875	1.00	Q	.	.	.	.
1.33	0.1013	1.01	Q	.	.	.	.
1.50	0.1152	1.01	Q	.	.	.	.
1.67	0.1293	1.02	Q	.	.	.	.
1.83	0.1434	1.03	Q	.	.	.	.
2.00	0.1576	1.03	Q	.	.	.	.
2.17	0.1719	1.04	Q	.	.	.	.
2.33	0.1863	1.05	Q	.	.	.	.
2.50	0.2009	1.06	Q	.	.	.	.
2.67	0.2155	1.07	Q	.	.	.	.
2.83	0.2303	1.08	Q	.	.	.	.
3.00	0.2452	1.08	Q	.	.	.	.
3.17	0.2602	1.09	Q	.	.	.	.
3.33	0.2753	1.10	Q	.	.	.	.
3.50	0.2905	1.11	Q	.	.	.	.
3.67	0.3059	1.12	Q	.	.	.	.
3.83	0.3214	1.13	Q	.	.	.	.
4.00	0.3370	1.14	Q	.	.	.	.
4.17	0.3528	1.15	Q	.	.	.	.
4.33	0.3687	1.16	Q	.	.	.	.
4.50	0.3847	1.17	Q	.	.	.	.
4.67	0.4009	1.18	Q	.	.	.	.
4.83	0.4173	1.19	Q	.	.	.	.
5.00	0.4338	1.20	Q	.	.	.	.
5.17	0.4504	1.22	Q	.	.	.	.
5.33	0.4672	1.22	Q	.	.	.	.
5.50	0.4842	1.24	Q	.	.	.	.
5.67	0.5013	1.25	Q	.	.	.	.
5.83	0.5187	1.27	.Q	.	.	.	.
6.00	0.5361	1.27	.Q	.	.	.	.
6.17	0.5538	1.29	.Q	.	.	.	.
6.33	0.5717	1.30	.Q	.	.	.	.
6.50	0.5897	1.32	.Q	.	.	.	.
6.67	0.6080	1.33	.Q	.	.	.	.
6.83	0.6264	1.35	.Q	.	.	.	.
7.00	0.6451	1.36	.Q	.	.	.	.
7.17	0.6639	1.38	.Q	.	.	.	.
7.33	0.6830	1.39	.Q	.	.	.	.
7.50	0.7024	1.41	.Q	.	.	.	.
7.67	0.7219	1.43	.Q	.	.	.	.
7.83	0.7417	1.45	.Q	.	.	.	.
8.00	0.7618	1.46	.Q	.	.	.	.

2019.07.25 - Onsite DMA 3 Proposed 100 yr.txt

8.17	0.7821	1.49	.Q	.	.	.	.
8.33	0.8026	1.50	.Q	.	.	.	.
8.50	0.8235	1.53	.Q	.	.	.	.
8.67	0.8446	1.54	.Q	.	.	.	.
8.83	0.8661	1.57	.Q	.	.	.	.
9.00	0.8878	1.59	.Q	.	.	.	.
9.17	0.9099	1.62	.Q	.	.	.	.
9.33	0.9323	1.63	.Q	.	.	.	.
9.50	0.9551	1.67	.Q	.	.	.	.
9.67	0.9782	1.69	.Q	.	.	.	.
9.83	1.0017	1.72	.Q	.	.	.	.
10.00	1.0256	1.74	.Q	.	.	.	.
10.17	1.0499	1.78	.Q	.	.	.	.
10.33	1.0746	1.81	.Q	.	.	.	.
10.50	1.0998	1.85	.Q	.	.	.	.
10.67	1.1254	1.87	.Q	.	.	.	.
10.83	1.1515	1.92	.Q	.	.	.	.
11.00	1.1782	1.95	.Q	.	.	.	.
11.17	1.2054	2.00	.Q	.	.	.	.
11.33	1.2332	2.03	.Q	.	.	.	.
11.50	1.2616	2.09	.Q	.	.	.	.
11.67	1.2907	2.12	.Q	.	.	.	.
11.83	1.3204	2.19	.Q	.	.	.	.
12.00	1.3509	2.23	.Q	.	.	.	.
12.17	1.3862	2.89	. Q	.	.	.	.
12.33	1.4263	2.94	. Q	.	.	.	.
12.50	1.4675	3.03	. Q	.	.	.	.
12.67	1.5096	3.08	. Q	.	.	.	.
12.83	1.5528	3.19	. Q	.	.	.	.
13.00	1.5972	3.25	. Q	.	.	.	.
13.17	1.6429	3.38	. Q	.	.	.	.
13.33	1.6900	3.45	. Q	.	.	.	.
13.50	1.7386	3.61	. Q	.	.	.	.
13.67	1.7888	3.69	. Q	.	.	.	.
13.83	1.8410	3.88	. Q	.	.	.	.
14.00	1.8951	3.99	. Q	.	.	.	.
14.17	1.9520	4.27	. Q	.	.	.	.
14.33	2.0118	4.42	. Q	.	.	.	.
14.50	2.0750	4.76	. Q	.	.	.	.
14.67	2.1419	4.95	. Q	.	.	.	.
14.83	2.2133	5.42	. Q	.	.	.	.
15.00	2.2900	5.71	. Q	.	.	.	.
15.17	2.3736	6.43	. Q	.	.	.	.
15.33	2.4654	6.90	. Q	.	.	.	.
15.50	2.5624	7.18	. Q	.	.	.	.
15.67	2.6678	8.13	. Q	.	.	.	.
15.83	2.8045	11.72	. Q.	.	.	.	.
16.00	2.9964	16.14	. Q	.	.	.	.
16.17	3.4477	49.41	.	.	.	.	Q.

2019.07.25 - Onsite DMA 3 Proposed 100 yr.txt

16.33	3.8534	9.49	.	Q	.	.	.	.
16.50	3.9702	7.47	.	Q	.	.	.	.
16.67	4.0633	6.04	.	Q	.	.	.	.
16.83	4.1405	5.17	.	Q	.	.	.	.
17.00	4.2077	4.58	.	Q	.	.	.	.
17.17	4.2675	4.11	.	Q	.	.	.	.
17.33	4.3219	3.78	.	Q	.	.	.	.
17.50	4.3722	3.53	.	Q	.	.	.	.
17.67	4.4193	3.32	.	Q	.	.	.	.
17.83	4.4638	3.14	.	Q	.	.	.	.
18.00	4.5059	2.99	.	Q	.	.	.	.
18.17	4.5421	2.27	.	Q	.	.	.	.
18.33	4.5726	2.16	.	Q	.	.	.	.
18.50	4.6017	2.06	.	Q	.	.	.	.
18.67	4.6295	1.98	.	Q	.	.	.	.
18.83	4.6561	1.90	.	Q	.	.	.	.
19.00	4.6818	1.83	.	Q	.	.	.	.
19.17	4.7065	1.76	.	Q	.	.	.	.
19.33	4.7304	1.71	.	Q	.	.	.	.
19.50	4.7535	1.65	.	Q	.	.	.	.
19.67	4.7759	1.60	.	Q	.	.	.	.
19.83	4.7977	1.56	.	Q	.	.	.	.
20.00	4.8188	1.51	.	Q	.	.	.	.
20.17	4.8394	1.47	.	Q	.	.	.	.
20.33	4.8595	1.44	.	Q	.	.	.	.
20.50	4.8790	1.40	.	Q	.	.	.	.
20.67	4.8981	1.37	.	Q	.	.	.	.
20.83	4.9168	1.34	.	Q	.	.	.	.
21.00	4.9350	1.31	.	Q	.	.	.	.
21.17	4.9529	1.28	.	Q	.	.	.	.
21.33	4.9704	1.26	.	Q	.	.	.	.
21.50	4.9875	1.23	Q	.	.	.	.	.
21.67	5.0043	1.21	Q	.	.	.	.	.
21.83	5.0208	1.19	Q	.	.	.	.	.
22.00	5.0370	1.17	Q	.	.	.	.	.
22.17	5.0529	1.14	Q	.	.	.	.	.
22.33	5.0686	1.13	Q	.	.	.	.	.
22.50	5.0839	1.11	Q	.	.	.	.	.
22.67	5.0991	1.09	Q	.	.	.	.	.
22.83	5.1139	1.07	Q	.	.	.	.	.
23.00	5.1286	1.06	Q	.	.	.	.	.
23.17	5.1430	1.04	Q	.	.	.	.	.
23.33	5.1572	1.02	Q	.	.	.	.	.
23.50	5.1712	1.01	Q	.	.	.	.	.
23.67	5.1851	1.00	Q	.	.	.	.	.
23.83	5.1987	0.98	Q	.	.	.	.	.
24.00	5.2121	0.97	Q	.	.	.	.	.
24.17	5.2188	0.00	Q	.	.	.	.	.

TIME DURATION(mi nutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:  
(Note: 100% of Peak Flow Rate estimate assumed to have  
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Durati on (mi nutes)
=====	=====
0%	1440.0
10%	140.0
20%	30.0
30%	20.0
40%	10.0
50%	10.0
60%	10.0
70%	10.0
80%	10.0
90%	10.0

## Table of Contents

	User Notifications	2
	Master Network Summary	3
DM-3	Read Hydrograph	4
O-1	Addition Summary	5
PO-1 (OUT)	Time vs. Elevation	6
PO-1	Time vs. Volume	9
PO-1		
	Elevation-Area Volume Curve	12
	Volume Equations	13
Composite Outlet Structure - 1		
	Outlet Input Data	14
	Individual Outlet Curves	16
	Composite Rating Curve	17
Outlet-1		
	Diverted Hydrograph	18
PO-1		
	Elevation-Volume-Flow Table (Pond)	21
PO-1 (IN)		
	Level Pool Pond Routing Summary	22
PO-1 (OUT)		
	Pond Routed Hydrograph (total out)	23
PO-1 (IN)		
	Pond Inflow Summary	26

Subsection: User Notifications

User Notifications

---

Message Id	43
Scenario	Base
Element Type	Pond
Element Id	15
Label	PO-1
Time	(N/A)
Message	Outflow > 0 for first rating table elevation.
Source	Warning

---

## Subsection: Master Network Summary

### Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft <sup>3</sup> )	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
DM-3	Base	0	227,734.000	16.167	49.41

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft <sup>3</sup> )	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
O-1	Base	0	226,739.000	14.050	4.00

### Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft <sup>3</sup> )	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft <sup>3</sup> )
PO-1 (IN)	Base	0	227,253.000	16.150	46.08	(N/A)	(N/A)
PO-1 (OUT)	Base	0	227,266.000	14.050	4.00	6.00	57,927.000

Subsection: Read Hydrograph  
Label: DM-3

Peak Discharge	49.41 ft <sup>3</sup> /s
Time to Peak	16.167 hours
Hydrograph Volume	227,733.765 ft <sup>3</sup>

#### HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.167 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
0.000	0.00	0.96	0.96	0.97	0.98
0.833	0.99	0.99	1.00	1.01	1.01
1.667	1.02	1.03	1.03	1.04	1.05
2.500	1.06	1.07	1.08	1.08	1.09
3.333	1.10	1.11	1.12	1.13	1.14
4.167	1.15	1.16	1.17	1.18	1.19
5.000	1.20	1.22	1.22	1.14	1.25
5.833	1.27	1.27	1.29	1.30	1.32
6.667	1.33	1.35	1.36	1.38	1.39
7.500	1.41	1.43	1.45	1.46	1.49
8.333	1.50	1.53	1.54	1.57	1.71
9.167	1.73	1.77	1.78	1.81	1.84
10.000	1.87	1.78	1.81	1.85	1.87
10.833	1.92	1.95	2.00	2.03	2.09
11.667	2.12	2.19	2.23	2.89	2.94
12.500	3.03	3.08	3.19	3.25	3.30
13.333	3.45	3.61	3.69	3.88	3.99
14.167	4.27	4.42	4.76	4.95	5.42
15.000	5.71	6.43	6.90	7.18	8.13
15.833	11.72	16.14	49.41	9.49	7.47
16.667	6.04	5.17	4.58	4.11	3.78
17.500	3.53	3.33	3.14	2.99	2.27
18.333	2.16	2.06	1.98	1.90	1.83
19.167	1.76	1.71	1.65	1.60	1.56
20.000	1.51	1.47	1.44	1.40	1.37
20.833	1.34	1.31	1.28	1.26	1.23
21.667	1.21	1.19	1.17	1.14	1.13
22.500	1.11	1.09	1.07	1.06	1.04
23.333	1.02	1.01	1.00	0.98	0.97
24.167	0.00	(N/A)	(N/A)	(N/A)	(N/A)



Subsection: Addition Summary

Label: O-1

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
Outlet-1	PO-1

Node Inflows

Inflow Type	Element	Volume (ft <sup>3</sup> )	Time to Peak (hours)	Flow (Peak) (ft <sup>3</sup> /s)
Flow (From)	Outlet-1	226,738.747	14.050	4.00
Flow (In)	O-1	226,738.747	14.050	4.00

Subsection: Time vs. Elevation

Label: PO-1 (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00
0.250	0.00	0.00	0.00	0.00	0.00
0.500	0.00	0.00	0.00	0.00	0.00
0.750	0.00	0.00	0.00	0.00	0.00
1.000	0.00	0.00	0.00	0.00	0.00
1.250	0.00	0.00	0.00	0.00	0.00
1.500	0.00	0.00	0.00	0.00	0.00
1.750	0.00	0.00	0.00	0.00	0.00
2.000	0.00	0.00	0.00	0.00	0.00
2.250	0.00	0.00	0.00	0.00	0.00
2.500	0.00	0.00	0.00	0.00	0.00
2.750	0.00	0.00	0.00	0.00	0.00
3.000	0.00	0.00	0.00	0.00	0.00
3.250	0.00	0.00	0.00	0.00	0.00
3.500	0.00	0.00	0.00	0.00	0.00
3.750	0.00	0.00	0.00	0.00	0.00
4.000	0.00	0.00	0.00	0.00	0.00
4.250	0.00	0.00	0.00	0.00	0.00
4.500	0.00	0.00	0.00	0.00	0.00
4.750	0.00	0.00	0.00	0.00	0.00
5.000	0.00	0.00	0.00	0.00	0.00
5.250	0.00	0.00	0.00	0.00	0.00
5.500	0.00	0.00	0.00	0.00	0.00
5.750	0.00	0.00	0.00	0.00	0.00
6.000	0.00	0.00	0.00	0.00	0.00
6.250	0.00	0.00	0.00	0.00	0.00
6.500	0.00	0.00	0.00	0.00	0.00
6.750	0.00	0.00	0.00	0.00	0.00
7.000	0.00	0.00	0.00	0.00	0.00
7.250	0.00	0.00	0.00	0.00	0.00
7.500	0.00	0.00	0.00	0.00	0.00
7.750	0.00	0.00	0.00	0.00	0.00
8.000	0.00	0.00	0.00	0.00	0.00
8.250	0.00	0.00	0.00	0.00	0.00
8.500	0.00	0.00	0.00	0.00	0.00
8.750	0.00	0.00	0.00	0.00	0.00
9.000	0.00	0.00	0.00	0.00	0.00
9.250	0.00	0.00	0.00	0.00	0.00
9.500	0.00	0.00	0.00	0.00	0.00
9.750	0.00	0.00	0.00	0.00	0.00
10.000	0.00	0.00	0.00	0.00	0.00
10.250	0.00	0.00	0.00	0.00	0.00
10.500	0.00	0.00	0.00	0.00	0.00

Subsection: Time vs. Elevation

Label: PO-1 (OUT)

### Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.750	0.00	0.00	0.00	0.00	0.00
11.000	0.00	0.00	0.00	0.00	0.00
11.250	0.00	0.00	0.00	0.00	0.00
11.500	0.00	0.00	0.00	0.00	0.00
11.750	0.00	0.00	0.00	0.00	0.00
12.000	0.00	0.00	0.00	0.00	0.00
12.250	0.00	0.00	0.00	0.00	0.00
12.500	0.00	0.00	0.00	0.00	0.00
12.750	0.00	0.00	0.00	0.00	0.00
13.000	0.00	0.00	0.00	0.00	0.00
13.250	0.00	0.00	0.00	0.00	0.00
13.500	0.00	0.00	0.00	0.00	0.00
13.750	0.00	0.00	0.00	0.00	0.00
14.000	0.00	0.04	0.04	0.04	0.05
14.250	0.05	0.06	0.07	0.08	0.09
14.500	0.10	0.12	0.13	0.15	0.17
14.750	0.19	0.21	0.24	0.27	0.30
15.000	0.33	0.36	0.40	0.44	0.49
15.250	0.54	0.59	0.64	0.70	0.75
15.500	0.81	0.87	0.94	1.01	1.10
15.750	1.20	1.32	1.46	1.62	1.81
16.000	2.03	2.35	2.85	3.54	4.28
16.250	4.87	5.23	5.41	5.50	5.58
16.500	5.65	5.71	5.77	5.81	5.85
16.750	5.88	5.91	5.93	5.95	5.97
17.000	5.98	5.99	6.00	6.00	6.00
17.250	6.00	6.00	6.00	5.99	5.99
17.500	5.98	5.97	5.96	5.95	5.93
17.750	5.92	5.90	5.89	5.87	5.85
18.000	5.84	5.82	5.79	5.76	5.73
18.250	5.70	5.66	5.63	5.59	5.56
18.500	5.52	5.49	5.45	5.41	5.37
18.750	5.34	5.30	5.26	5.22	5.18
19.000	5.14	5.10	5.06	5.02	4.97
19.250	4.93	4.89	4.85	4.80	4.76
19.500	4.72	4.67	4.63	4.58	4.54
19.750	4.49	4.45	4.40	4.36	4.31
20.000	4.27	4.22	4.17	4.12	4.08
20.250	4.03	3.98	3.93	3.89	3.84
20.500	3.79	3.74	3.69	3.64	3.60
20.750	3.55	3.50	3.45	3.40	3.35
21.000	3.30	3.25	3.20	3.15	3.09
21.250	3.04	2.99	2.94	2.89	2.84

Subsection: Time vs. Elevation

Label: PO-1 (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
21.500	2.79	2.74	2.68	2.63	2.58
21.750	2.53	2.48	2.42	2.37	2.32
22.000	2.27	2.21	2.16	2.11	2.05
22.250	2.00	1.95	1.89	1.84	1.79
22.500	1.73	1.68	1.62	1.57	1.51
22.750	1.46	1.41	1.35	1.30	1.24
23.000	1.19	1.13	1.08	1.02	0.97
23.250	0.91	0.86	0.80	0.74	0.69
23.500	0.63	0.58	0.52	0.47	0.41
23.750	0.35	0.30	0.24	0.18	0.13
24.000	0.07	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume

Label: PO-1

Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000
4.250	0.000	0.000	0.000	0.000	0.000
4.500	0.000	0.000	0.000	0.000	0.000
4.750	0.000	0.000	0.000	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000
5.250	0.000	0.000	0.000	0.000	0.000
5.500	0.000	0.000	0.000	0.000	0.000
5.750	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000
6.250	0.000	0.000	0.000	0.000	0.000
6.500	0.000	0.000	0.000	0.000	0.000
6.750	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000
7.250	0.000	0.000	0.000	0.000	0.000
7.500	0.000	0.000	0.000	0.000	0.000
7.750	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000
8.250	0.000	0.000	0.000	0.000	0.000
8.500	0.000	0.000	0.000	0.000	0.000
8.750	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000
9.250	0.000	0.000	0.000	0.000	0.000
9.500	0.000	0.000	0.000	0.000	0.000
9.750	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000
10.250	0.000	0.000	0.000	0.000	0.000
10.500	0.000	0.000	0.000	0.000	0.000

Subsection: Time vs. Volume

Label: PO-1

### Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )
10.750	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000
11.250	0.000	0.000	0.000	0.000	0.000
11.500	0.000	0.000	0.000	0.000	0.000
11.750	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000
12.250	0.000	0.000	0.000	0.000	0.000
12.500	0.000	0.000	0.000	0.000	0.000
12.750	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000
13.250	0.000	0.000	0.000	0.000	0.000
13.500	0.000	0.000	0.000	0.000	0.000
13.750	0.000	0.000	0.000	0.000	0.000
14.000	0.000	366.000	387.000	423.000	471.000
14.250	529.000	596.000	672.000	762.000	872.000
14.500	999.000	1,141.000	1,293.000	1,456.000	1,634.000
14.750	1,834.000	2,060.000	2,310.000	2,579.000	2,863.000
15.000	3,163.000	3,490.000	3,856.000	4,261.000	4,701.000
15.250	5,168.000	5,660.000	6,176.000	6,711.000	7,260.000
15.500	7,825.000	8,423.000	9,073.000	9,773.000	10,573.000
15.750	11,542.000	12,706.000	14,071.000	15,659.000	17,486.000
16.000	19,552.000	22,636.000	27,516.000	34,192.000	41,348.000
16.250	47,007.000	50,510.000	52,199.000	53,096.000	53,884.000
16.500	54,563.000	55,149.000	55,658.000	56,090.000	56,454.000
16.750	56,767.000	57,032.000	57,253.000	57,437.000	57,589.000
17.000	57,709.000	57,801.000	57,867.000	57,908.000	57,927.000
17.250	57,926.000	57,907.000	57,871.000	57,820.000	57,756.000
17.500	57,678.000	57,588.000	57,487.000	57,375.000	57,253.000
17.750	57,121.000	56,978.000	56,825.000	56,663.000	56,494.000
18.000	56,316.000	56,115.000	55,875.000	55,596.000	55,289.000
18.250	54,970.000	54,646.000	54,316.000	53,980.000	53,639.000
18.500	53,293.000	52,941.000	52,586.000	52,226.000	51,861.000
18.750	51,493.000	51,120.000	50,743.000	50,361.000	49,977.000
19.000	49,588.000	49,195.000	48,799.000	48,399.000	47,996.000
19.250	47,589.000	47,180.000	46,768.000	46,353.000	45,935.000
19.500	45,514.000	45,090.000	44,663.000	44,233.000	43,800.000
19.750	43,366.000	42,929.000	42,490.000	42,049.000	41,605.000
20.000	41,158.000	40,709.000	40,257.000	39,804.000	39,348.000
20.250	38,891.000	38,432.000	37,971.000	37,509.000	37,044.000
20.500	36,577.000	36,108.000	35,638.000	35,166.000	34,692.000
20.750	34,217.000	33,740.000	33,261.000	32,781.000	32,299.000
21.000	31,816.000	31,331.000	30,844.000	30,356.000	29,866.000
21.250	29,375.000	28,884.000	28,390.000	27,896.000	27,400.000

Subsection: Time vs. Volume

Label: PO-1

Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )	Volume (ft <sup>3</sup> )
21.500	26,902.000	26,403.000	25,903.000	25,401.000	24,899.000
21.750	24,395.000	23,891.000	23,385.000	22,879.000	22,371.000
22.000	21,862.000	21,352.000	20,840.000	20,326.000	19,812.000
22.250	19,296.000	18,780.000	18,264.000	17,746.000	17,228.000
22.500	16,708.000	16,187.000	15,665.000	15,143.000	14,619.000
22.750	14,093.000	13,567.000	13,040.000	12,512.000	11,984.000
23.000	11,455.000	10,925.000	10,394.000	9,863.000	9,330.000
23.250	8,796.000	8,260.000	7,724.000	7,187.000	6,650.000
23.500	6,112.000	5,574.000	5,035.000	4,495.000	3,955.000
23.750	3,414.000	2,871.000	2,328.000	1,784.000	1,239.000
24.000	694.000	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Elevation-Area Volume Curve

Label: PO-1

Elevation (ft)	Planimeter (ft <sup>2</sup> )	Area (ft <sup>2</sup> )	A1 + A2 + sq (A1 * A2) (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	Volume (Total) (ft <sup>3</sup> )
0.00	0.0	9,650.000	0.000	0.000	0.000
1.00	0.0	9,650.000	28,950.000	9,650.000	9,650.000
2.00	0.0	9,650.000	28,950.000	9,650.000	19,300.000
3.00	0.0	9,650.000	28,950.000	9,650.000	28,950.000
4.00	0.0	9,650.000	28,950.000	9,650.000	38,600.000
5.00	0.0	9,650.000	28,950.000	9,650.000	48,250.000
6.00	0.0	9,650.000	28,950.000	9,650.000	57,900.000
7.00	0.0	9,650.000	28,950.000	9,650.000	67,550.000



Subsection: Volume Equations

Label: PO-1

#### Pond Volume Equations

\* Incremental volume computed by the Conic Method for Reservoir Volumes.

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Subsection: Outlet Input Data

Label: Composite Outlet Structure - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	7.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
User Defined Table	User Defined Rating Table - 1	Forward	TW	0.00	7.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data

Label: Composite Outlet Structure - 1

Structure ID: User Defined Rating Table - 1  
Structure Type: User Defined Table

Elevation (ft)	Flow (ft <sup>3</sup> /s)
0.00	4.00
1.00	4.00
2.00	4.00
3.00	4.00
4.00	4.00
5.00	4.00
6.00	4.00
7.00	4.00

Structure ID: TW  
Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

Subsection: Individual Outlet Curves  
 Label: Composite Outlet Structure - 1

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = User Defined Rating Table - 1 (User Defined Table)

Upstream ID = (Pond Water Surface)  
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft <sup>3</sup> /s)	Tailwater Elevation (ft)	Convergence Error (ft)
0.00	4.00	(N/A)	0.00
0.50	4.00	(N/A)	0.00
1.00	4.00	(N/A)	0.00
1.50	4.00	(N/A)	0.00
2.00	4.00	(N/A)	0.00
2.50	4.00	(N/A)	0.00
3.00	4.00	(N/A)	0.00
3.50	4.00	(N/A)	0.00
4.00	4.00	(N/A)	0.00
4.50	4.00	(N/A)	0.00
5.00	4.00	(N/A)	0.00
5.50	4.00	(N/A)	0.00
6.00	4.00	(N/A)	0.00
6.50	4.00	(N/A)	0.00
7.00	4.00	(N/A)	0.00

Computation Messages

Interpolated from input  
table  
 Interpolated from input  
table  
 Interpolated from input  
table  
 Interpolated from input  
table  
 Interpolated from input  
table  
 Interpolated from input  
table  
 Interpolated from input  
table

Subsection: Composite Rating Curve  
Label: Composite Outlet Structure - 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft <sup>3</sup> /s)	Tailwater Elevation (ft)	Convergence Error (ft)
0.00	4.00	(N/A)	0.00
0.50	4.00	(N/A)	0.00
1.00	4.00	(N/A)	0.00
1.50	4.00	(N/A)	0.00
2.00	4.00	(N/A)	0.00
2.50	4.00	(N/A)	0.00
3.00	4.00	(N/A)	0.00
3.50	4.00	(N/A)	0.00
4.00	4.00	(N/A)	0.00
4.50	4.00	(N/A)	0.00
5.00	4.00	(N/A)	0.00
5.50	4.00	(N/A)	0.00
6.00	4.00	(N/A)	0.00
6.50	4.00	(N/A)	0.00
7.00	4.00	(N/A)	0.00

Contributing Structures

User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1
User Defined Rating Table - 1

Subsection: Diverted Hydrograph  
Label: Outlet-1

Peak Discharge	4.00 ft <sup>3</sup> /s
Time to Peak	17.350 hours
Hydrograph Volume	226,738.747 ft <sup>3</sup>

HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
0.000	2.00	0.14	0.43	0.72	0.91
0.250	0.96	0.96	0.96	0.96	0.97
0.500	0.97	0.97	0.97	0.98	0.98
0.750	0.98	0.99	0.99	0.99	0.99
1.000	0.99	0.99	0.99	1.00	1.00
1.250	1.00	1.01	1.01	1.01	1.01
1.500	1.01	1.01	1.01	1.02	1.02
1.750	1.02	1.03	1.03	1.03	1.03
2.000	1.03	1.03	1.03	1.04	1.04
2.250	1.04	1.05	1.05	1.05	1.06
2.500	1.06	1.06	1.06	1.07	1.07
2.750	1.07	1.08	1.08	1.08	1.08
3.000	1.08	1.08	1.08	1.09	1.09
3.250	1.09	1.10	1.10	1.10	1.11
3.500	1.11	1.11	1.11	1.12	1.12
3.750	1.12	1.13	1.13	1.13	1.14
4.000	1.14	1.14	1.14	1.15	1.15
4.250	1.15	1.16	1.16	1.16	1.17
4.500	1.17	1.17	1.17	1.18	1.18
4.750	1.18	1.19	1.19	1.19	1.20
5.000	1.20	1.20	1.21	1.22	1.22
5.250	1.22	1.22	1.22	1.20	1.18
5.500	1.15	1.16	1.19	1.22	1.25
5.750	1.26	1.26	1.27	1.27	1.27
6.000	1.27	1.27	1.28	1.29	1.29
6.250	1.30	1.30	1.30	1.30	1.31
6.500	1.32	1.32	1.32	1.33	1.33
6.750	1.34	1.34	1.35	1.35	1.36
7.000	1.36	1.37	1.37	1.38	1.38
7.250	1.39	1.39	1.39	1.40	1.40
7.500	1.41	1.42	1.42	1.43	1.43
7.750	1.44	1.44	1.45	1.45	1.46
8.000	1.46	1.47	1.47	1.48	1.49
8.250	1.49	1.50	1.50	1.51	1.52
8.500	1.53	1.53	1.53	1.54	1.54
8.750	1.55	1.56	1.57	1.60	1.65
9.000	1.69	1.71	1.72	1.72	1.73
9.250	1.74	1.75	1.76	1.77	1.77
9.500	1.78	1.78	1.79	1.81	1.81

Subsection: Diverted Hydrograph  
Label: Outlet-1

# HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
9.750	1.82	1.83	1.84	1.85	1.86
10.000	1.87	1.86	1.83	1.80	1.79
10.250	1.79	1.80	1.81	1.82	1.83
10.500	1.84	1.85	1.86	1.87	1.87
10.750	1.89	1.90	1.92	1.93	1.94
11.000	1.95	1.96	1.97	1.99	2.00
11.250	2.01	2.02	2.03	2.05	2.06
11.500	2.08	2.09	2.10	2.11	2.13
11.750	2.14	2.17	2.18	2.20	2.21
12.000	2.22	2.33	2.53	2.72	2.86
12.250	2.91	2.92	2.94	2.96	2.99
12.500	3.02	3.04	3.05	3.07	3.09
12.750	3.12	3.15	3.18	3.20	3.22
13.000	3.24	3.26	3.27	3.29	3.31
13.250	3.35	3.40	3.44	3.49	3.54
13.500	3.59	3.62	3.65	3.67	3.70
13.750	3.76	3.81	3.87	3.91	3.94
14.000	3.97	4.00	4.00	4.00	4.00
14.250	4.00	4.00	4.00	4.00	4.00
14.500	4.00	4.00	4.00	4.00	4.00
14.750	4.00	4.00	4.00	4.00	4.00
15.000	4.00	4.00	4.00	4.00	4.00
15.250	4.00	4.00	4.00	4.00	4.00
15.500	4.00	4.00	4.00	4.00	4.00
15.750	4.00	4.00	4.00	4.00	4.00
16.000	4.00	4.00	4.00	4.00	4.00
16.250	4.00	4.00	4.00	4.00	4.00
16.500	4.00	4.00	4.00	4.00	4.00
16.750	4.00	4.00	4.00	4.00	4.00
17.000	4.00	4.00	4.00	4.00	4.00
17.250	4.00	4.00	4.00	4.00	4.00
17.500	4.00	4.00	4.00	4.00	4.00
17.750	4.00	4.00	4.00	4.00	4.00
18.000	4.00	4.00	4.00	4.00	4.00
18.250	4.00	4.00	4.00	4.00	4.00
18.500	4.00	4.00	4.00	4.00	4.00
18.750	4.00	4.00	4.00	4.00	4.00
19.000	4.00	4.00	4.00	4.00	4.00
19.250	4.00	4.00	4.00	4.00	4.00
19.500	4.00	4.00	4.00	4.00	4.00
19.750	4.00	4.00	4.00	4.00	4.00
20.000	4.00	4.00	4.00	4.00	4.00
20.250	4.00	4.00	4.00	4.00	4.00
20.500	4.00	4.00	4.00	4.00	4.00

Subsection: Diverted Hydrograph

Label: Outlet-1

HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
20.750	4.00	4.00	4.00	4.00	4.00
21.000	4.00	4.00	4.00	4.00	4.00
21.250	4.00	4.00	4.00	4.00	4.00
21.500	4.00	4.00	4.00	4.00	4.00
21.750	4.00	4.00	4.00	4.00	4.00
22.000	4.00	4.00	4.00	4.00	4.00
22.250	4.00	4.00	4.00	4.00	4.00
22.500	4.00	4.00	4.00	4.00	4.00
22.750	4.00	4.00	4.00	4.00	4.00
23.000	4.00	4.00	4.00	4.00	4.00
23.250	4.00	4.00	4.00	4.00	4.00
23.500	4.00	4.00	4.00	4.00	4.00
23.750	4.00	4.00	4.00	4.00	4.00
24.000	4.00	(N/A)	(N/A)	(N/A)	(N/A)



Subsection: Elevation-Volume-Flow Table (Pond)

Label: PO-1

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.000 ft <sup>3</sup>
Flow (Initial Outlet)	4.00 ft <sup>3</sup> /s
Flow (Initial Infiltration)	0.00 ft <sup>3</sup> /s
Flow (Initial, Total)	4.00 ft <sup>3</sup> /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft <sup>3</sup> /s)	Storage (ft <sup>3</sup> )	Area (ft <sup>2</sup> )	Infiltration (ft <sup>3</sup> /s)	Flow (Total) (ft <sup>3</sup> /s)	2S/t + O (ft <sup>3</sup> /s)
0.00	4.00	0.000	9,650.000	0.00	4.00	4.00
0.50	4.00	4,825.000	9,650.000	0.00	4.00	57.61
1.00	4.00	9,650.000	9,650.000	0.00	4.00	111.22
1.50	4.00	14,475.000	9,650.000	0.00	4.00	164.83
2.00	4.00	19,300.000	9,650.000	0.00	4.00	218.44
2.50	4.00	24,125.000	9,650.000	0.00	4.00	272.06
3.00	4.00	28,950.000	9,650.000	0.00	4.00	325.67
3.50	4.00	33,775.000	9,650.000	0.00	4.00	379.28
4.00	4.00	38,600.000	9,650.000	0.00	4.00	432.89
4.50	4.00	43,425.000	9,650.000	0.00	4.00	486.50
5.00	4.00	48,250.000	9,650.000	0.00	4.00	540.11
5.50	4.00	53,075.000	9,650.000	0.00	4.00	593.72
6.00	4.00	57,900.000	9,650.000	0.00	4.00	647.33
6.50	4.00	62,725.000	9,650.000	0.00	4.00	700.94
7.00	4.00	67,550.000	9,650.000	0.00	4.00	754.56

Subsection: Level Pool Pond Routing Summary  
Label: PO-1 (IN)

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		0.00 ft	
Volume (Initial)		0.000 ft³	
Flow (Initial Outlet)		4.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		4.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		46.08 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		4.00 ft³/s	Time to Peak (Flow, Outlet)
			16.150 hours
			14.050 hours
Elevation (Water Surface, Peak)		6.00 ft	
Volume (Peak)		57,926.520 ft³	
Mass Balance (ft³)			
Volume (Initial)		0.000 ft³	
Volume (Total Inflow)		227,253.000 ft³	
Volume (Total Infiltration)		0.000 ft³	
Volume (Total Outlet Outflow)		227,266.000 ft³	
Volume (Retained)		0.000 ft³	
Volume (Unrouted)		13.000 ft³	
Error (Mass Balance)		0.0 %	

Subsection: Pond Routed Hydrograph (total out)  
Label: PO-1 (OUT)

Peak Discharge	4.00 ft <sup>3</sup> /s
Time to Peak	17.350 hours
Hydrograph Volume	226,738.747 ft <sup>3</sup>

# HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
0.000	2.00	0.14	0.43	0.72	0.91
0.250	0.96	0.96	0.96	0.96	0.97
0.500	0.97	0.97	0.97	0.98	0.98
0.750	0.98	0.99	0.99	0.99	0.99
1.000	0.99	0.99	0.99	1.00	1.00
1.250	1.00	1.01	1.01	1.01	1.01
1.500	1.01	1.01	1.01	1.02	1.02
1.750	1.02	1.03	1.03	1.03	1.03
2.000	1.03	1.03	1.03	1.04	1.04
2.250	1.04	1.05	1.05	1.05	1.06
2.500	1.06	1.06	1.06	1.07	1.07
2.750	1.07	1.08	1.08	1.08	1.08
3.000	1.08	1.08	1.08	1.09	1.09
3.250	1.09	1.10	1.10	1.10	1.11
3.500	1.11	1.11	1.11	1.12	1.12
3.750	1.12	1.13	1.13	1.13	1.14
4.000	1.14	1.14	1.14	1.15	1.15
4.250	1.15	1.16	1.16	1.16	1.17
4.500	1.17	1.17	1.17	1.18	1.18
4.750	1.18	1.19	1.19	1.19	1.20
5.000	1.20	1.20	1.21	1.22	1.22
5.250	1.22	1.22	1.22	1.20	1.18
5.500	1.15	1.16	1.19	1.22	1.25
5.750	1.26	1.26	1.27	1.27	1.27
6.000	1.27	1.27	1.28	1.29	1.29
6.250	1.30	1.30	1.30	1.30	1.31
6.500	1.32	1.32	1.32	1.33	1.33
6.750	1.34	1.34	1.35	1.35	1.36
7.000	1.36	1.37	1.37	1.38	1.38
7.250	1.39	1.39	1.39	1.40	1.40
7.500	1.41	1.42	1.42	1.43	1.43
7.750	1.44	1.44	1.45	1.45	1.46
8.000	1.46	1.47	1.47	1.48	1.49
8.250	1.49	1.50	1.50	1.51	1.52
8.500	1.53	1.53	1.53	1.54	1.54
8.750	1.55	1.56	1.57	1.60	1.65
9.000	1.69	1.71	1.72	1.72	1.73
9.250	1.74	1.75	1.76	1.77	1.77
9.500	1.78	1.78	1.79	1.81	1.81

Subsection: Pond Routed Hydrograph (total out)

Label: PO-1 (OUT)

# HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
9.750	1.82	1.83	1.84	1.85	1.86
10.000	1.87	1.86	1.83	1.80	1.79
10.250	1.79	1.80	1.81	1.82	1.83
10.500	1.84	1.85	1.86	1.87	1.87
10.750	1.89	1.90	1.92	1.93	1.94
11.000	1.95	1.96	1.97	1.99	2.00
11.250	2.01	2.02	2.03	2.05	2.06
11.500	2.08	2.09	2.10	2.11	2.13
11.750	2.14	2.17	2.18	2.20	2.21
12.000	2.22	2.33	2.53	2.72	2.86
12.250	2.91	2.92	2.94	2.96	2.99
12.500	3.02	3.04	3.05	3.07	3.09
12.750	3.12	3.15	3.18	3.20	3.22
13.000	3.24	3.26	3.27	3.29	3.31
13.250	3.35	3.40	3.44	3.49	3.54
13.500	3.59	3.62	3.65	3.67	3.70
13.750	3.76	3.81	3.87	3.91	3.94
14.000	3.97	4.00	4.00	4.00	4.00
14.250	4.00	4.00	4.00	4.00	4.00
14.500	4.00	4.00	4.00	4.00	4.00
14.750	4.00	4.00	4.00	4.00	4.00
15.000	4.00	4.00	4.00	4.00	4.00
15.250	4.00	4.00	4.00	4.00	4.00
15.500	4.00	4.00	4.00	4.00	4.00
15.750	4.00	4.00	4.00	4.00	4.00
16.000	4.00	4.00	4.00	4.00	4.00
16.250	4.00	4.00	4.00	4.00	4.00
16.500	4.00	4.00	4.00	4.00	4.00
16.750	4.00	4.00	4.00	4.00	4.00
17.000	4.00	4.00	4.00	4.00	4.00
17.250	4.00	4.00	4.00	4.00	4.00
17.500	4.00	4.00	4.00	4.00	4.00
17.750	4.00	4.00	4.00	4.00	4.00
18.000	4.00	4.00	4.00	4.00	4.00
18.250	4.00	4.00	4.00	4.00	4.00
18.500	4.00	4.00	4.00	4.00	4.00
18.750	4.00	4.00	4.00	4.00	4.00
19.000	4.00	4.00	4.00	4.00	4.00
19.250	4.00	4.00	4.00	4.00	4.00
19.500	4.00	4.00	4.00	4.00	4.00
19.750	4.00	4.00	4.00	4.00	4.00
20.000	4.00	4.00	4.00	4.00	4.00
20.250	4.00	4.00	4.00	4.00	4.00
20.500	4.00	4.00	4.00	4.00	4.00

Subsection: Pond Routed Hydrograph (total out)  
 Label: PO-1 (OUT)

# HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)

Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)	Flow (ft <sup>3</sup> /s)
20.750	4.00	4.00	4.00	4.00	4.00
21.000	4.00	4.00	4.00	4.00	4.00
21.250	4.00	4.00	4.00	4.00	4.00
21.500	4.00	4.00	4.00	4.00	4.00
21.750	4.00	4.00	4.00	4.00	4.00
22.000	4.00	4.00	4.00	4.00	4.00
22.250	4.00	4.00	4.00	4.00	4.00
22.500	4.00	4.00	4.00	4.00	4.00
22.750	4.00	4.00	4.00	4.00	4.00
23.000	4.00	4.00	4.00	4.00	4.00
23.250	4.00	4.00	4.00	4.00	4.00
23.500	4.00	4.00	4.00	4.00	4.00
23.750	4.00	4.00	4.00	4.00	4.00
24.000	4.00	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Pond Inflow Summary  
 Label: PO-1 (IN)

### Summary for Hydrograph Addition at 'PO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DM-3

### Node Inflows

Inflow Type	Element	Volume (ft <sup>3</sup> )	Time to Peak (hours)	Flow (Peak) (ft <sup>3</sup> /s)
Flow (From)	DM-3	227,733.765	16.167	49.41
Flow (In)	PO-1	227,252.827	16.150	46.08

## Index

### C

Composite Outlet Structure - 1 (Composite Rating Curve)...17

Composite Outlet Structure - 1 (Individual Outlet Curves)...16

Composite Outlet Structure - 1 (Outlet Input Data)...14, 15

### D

DM-3 (Read Hydrograph)...4

### M

Master Network Summary...3

### O

O-1 (Addition Summary)...5

Outlet-1 (Diverted Hydrograph)...18, 19, 20

### P

PO-1 (Elevation-Area Volume Curve)...12

PO-1 (Elevation-Volume-Flow Table (Pond))...21

PO-1 (IN) (Level Pool Pond Routing Summary)...22

PO-1 (IN) (Pond Inflow Summary)...26

PO-1 (OUT) (Pond Routed Hydrograph (total out))...23, 24, 25

PO-1 (OUT) (Time vs. Elevation)...6, 7, 8

PO-1 (Time vs. Volume)...9, 10, 11

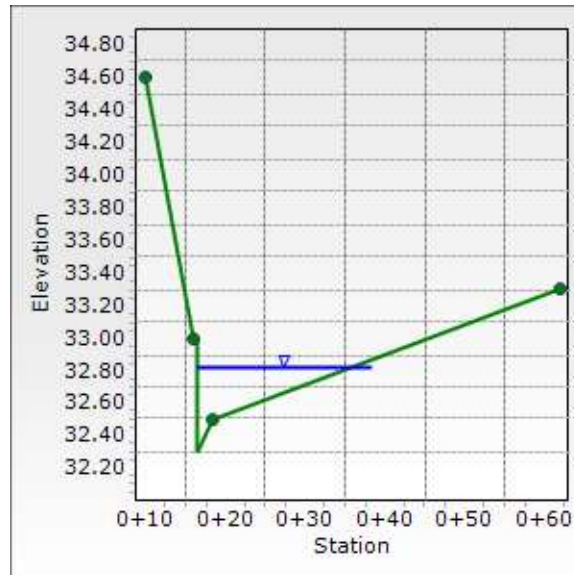
PO-1 (Volume Equations)...13

### U

User Notifications...2

## Cross Section for Overflow at East Release Point-Q2

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.52 ft
Discharge	6.46 cfs





## Worksheet for Overflow at East Release Point-Q2

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	6.46 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.97
0+17	32.97
0+17	32.30
0+19	32.46
0+62	33.25

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.97)	0.030
(0+16, 32.97)	(0+19, 32.46)	0.013
(0+19, 32.46)	(0+62, 33.25)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

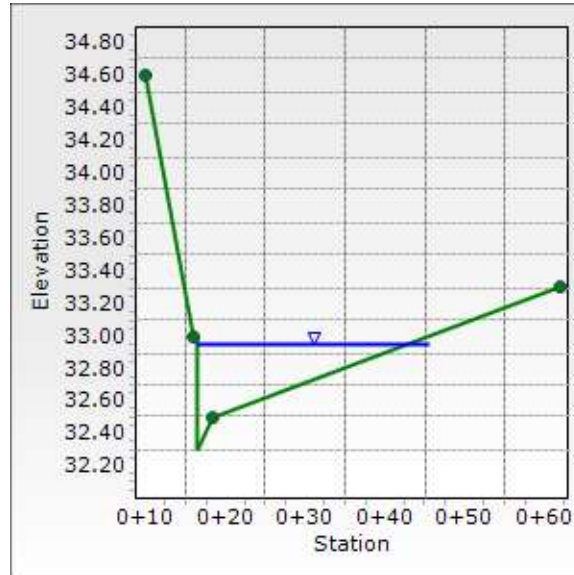
Results	
Normal Depth	0.52 ft
Elevation Range	32.3 to 34.6 ft
Flow Area	4.5 ft <sup>2</sup>
Wetted Perimeter	22.4 ft
Hydraulic Radius	0.20 ft
Top Width	21.87 ft
Normal Depth	0.52 ft
Critical Depth	0.44 ft
Critical Slope	0.00679 ft/ft
Velocity	1.45 ft/s
Velocity Head	0.03 ft
Specific Energy	0.55 ft
Froude Number	0.564

## Worksheet for Overflow at East Release Point-Q2

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.52 ft
Critical Depth	0.44 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00679 ft/ft

## Cross Section for Overflow at East Release Point-Q10

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.65 ft
Discharge	13.66 cfs



## Worksheet for Overflow at East Release Point-Q10

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	13.66 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.97
0+17	32.97
0+17	32.30
0+19	32.46
0+62	33.25

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.97)	0.030
(0+16, 32.97)	(0+19, 32.46)	0.013
(0+19, 32.46)	(0+62, 33.25)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

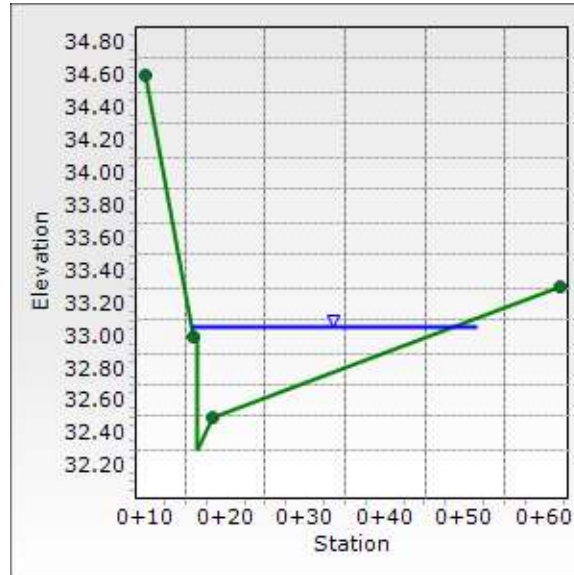
Results	
Normal Depth	0.65 ft
Elevation Range	32.3 to 34.6 ft
Flow Area	7.9 ft <sup>2</sup>
Wetted Perimeter	29.9 ft
Hydraulic Radius	0.26 ft
Top Width	29.22 ft
Normal Depth	0.65 ft
Critical Depth	0.55 ft
Critical Slope	0.00619 ft/ft
Velocity	1.73 ft/s
Velocity Head	0.05 ft
Specific Energy	0.70 ft
Froude Number	0.589

## Worksheet for Overflow at East Release Point-Q10

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.65 ft
Critical Depth	0.55 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00619 ft/ft

## Cross Section for Overflow at East Release Point-Q100

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.76 ft
Discharge	21.64 cfs



## Worksheet for Overflow at East Release Point-Q100

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	21.64 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.97
0+17	32.97
0+17	32.30
0+19	32.46
0+62	33.25

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.97)	0.030
(0+16, 32.97)	(0+19, 32.46)	0.013
(0+19, 32.46)	(0+62, 33.25)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.76 ft
Elevation Range	32.3 to 34.6 ft
Flow Area	11.3 ft <sup>2</sup>
Wetted Perimeter	36.6 ft
Hydraulic Radius	0.31 ft
Top Width	35.90 ft
Normal Depth	0.76 ft
Critical Depth	0.64 ft
Critical Slope	0.00598 ft/ft
Velocity	1.91 ft/s
Velocity Head	0.06 ft
Specific Energy	0.82 ft
Froude Number	0.598

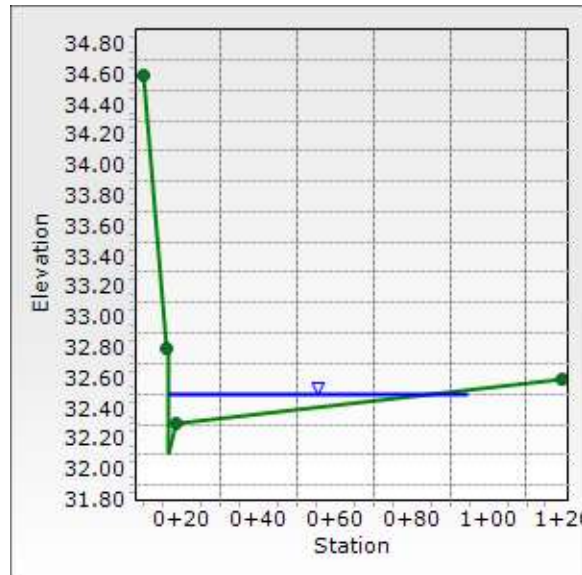
## Worksheet for Overflow at East Release Point-Q100

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.76 ft
Critical Depth	0.64 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00598 ft/ft



## Cross Section for Overflow at West Release Point-Q2

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.39 ft
Discharge	9.38 cfs



## Worksheet for Overflow at West Release Point-Q2

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	9.38 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.78
0+17	32.78
0+17	32.11
0+19	32.27
1+19	32.57

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.78)	0.030
(0+16, 32.78)	(0+19, 32.27)	0.013
(0+19, 32.27)	(1+19, 32.57)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.39 ft
Elevation Range	32.1 to 34.6 ft
Flow Area	9.3 ft <sup>2</sup>
Wetted Perimeter	78.7 ft
Hydraulic Radius	0.12 ft
Top Width	78.29 ft
Normal Depth	0.39 ft
Critical Depth	0.33 ft
Critical Slope	0.00825 ft/ft
Velocity	1.01 ft/s
Velocity Head	0.02 ft
Specific Energy	0.40 ft
Froude Number	0.516

## Worksheet for Overflow at West Release Point-Q2

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.39 ft
Critical Depth	0.33 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00825 ft/ft

## Worksheet for Overflow at West Release Point-Q10

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	19.78 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.78
0+17	32.78
0+17	32.11
0+19	32.27
1+19	32.57

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.78)	0.030
(0+16, 32.78)	(0+19, 32.27)	0.013
(0+19, 32.27)	(1+19, 32.57)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

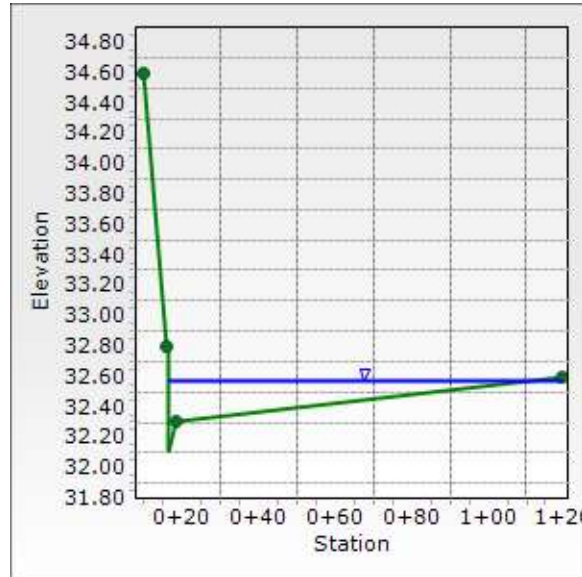
Results	
Normal Depth	0.46 ft
Elevation Range	32.1 to 34.6 ft
Flow Area	16.3 ft <sup>2</sup>
Wetted Perimeter	103.0 ft
Hydraulic Radius	0.16 ft
Top Width	102.50 ft
Normal Depth	0.46 ft
Critical Depth	0.40 ft
Critical Slope	0.00749 ft/ft
Velocity	1.22 ft/s
Velocity Head	0.02 ft
Specific Energy	0.49 ft
Froude Number	0.538

## Worksheet for Overflow at West Release Point-Q10

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.46 ft
Critical Depth	0.40 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00749 ft/ft
Messages	
Messages	Water Surface Elevation exceeds lowest end station by 0.004217053 76188442ft.

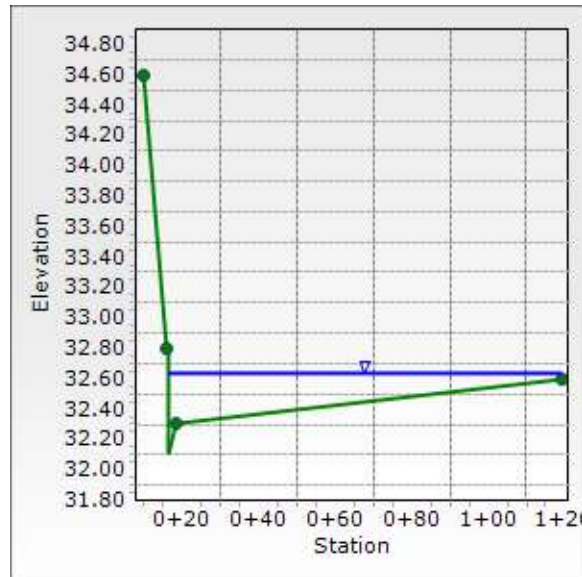
## Cross Section for Overflow at West Release Point-Q10

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.46 ft
Discharge	19.78 cfs



## Cross Section for Overflow at West Release Point-Q100

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.52 ft
Discharge	31.55 cfs



## Worksheet for Overflow at West Release Point-Q100

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.00200 ft/ft
Discharge	31.55 cfs

### Section Definitions

Station (ft)	Elevation (ft)
0+10	34.55
0+16	32.78
0+17	32.78
0+17	32.11
0+19	32.27
1+19	32.57

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 34.55)	(0+16, 32.78)	0.030
(0+16, 32.78)	(0+19, 32.27)	0.013
(0+19, 32.27)	(1+19, 32.57)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.52 ft
Elevation Range	32.1 to 34.6 ft
Flow Area	21.5 ft <sup>2</sup>
Wetted Perimeter	103.1 ft
Hydraulic Radius	0.21 ft
Top Width	102.50 ft
Normal Depth	0.52 ft
Critical Depth	0.45 ft
Critical Slope	0.00704 ft/ft
Velocity	1.47 ft/s
Velocity Head	0.03 ft
Specific Energy	0.55 ft
Froude Number	0.565

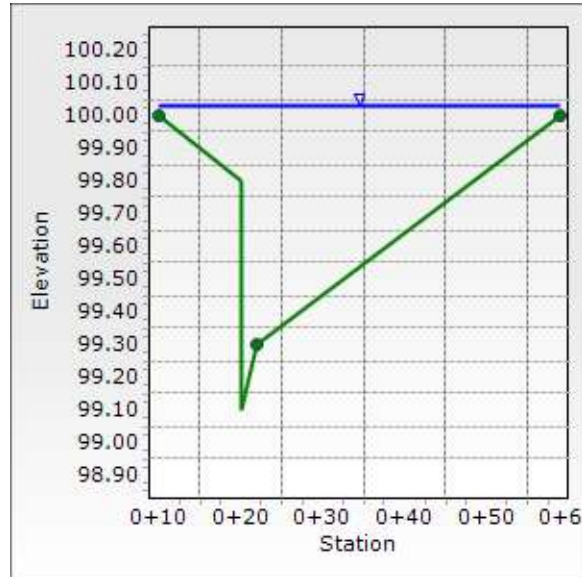


## Worksheet for Overflow at West Release Point-Q100

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.52 ft
Critical Depth	0.45 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00704 ft/ft
Messages	
Messages	Water Surface Elevation exceeds lowest end station by 0.055353652 4242588ft.

## Cross Section for Siboney Half Street - Capacity

Project Description	
Friction Method	Manning
	Formula
Solve For	Discharge
Input Data	
Channel Slope	0.00140 ft/ft
Normal Depth	0.90 ft
Discharge	29.14 cfs



## Worksheet for Siboney Half Street - Capacity

Project Description	
Friction Method	Manning
Solve For	Formula
	Discharge
Input Data	
Channel Slope	0.00140 ft/ft
Normal Depth	0.90 ft

### Section Definitions

Station (ft)	Elevation (ft)
0+10	100.00
0+20	99.80
0+20	99.13
0+22	99.29
0+59	100.03

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10, 100.00)	(0+22, 99.29)	0.013
(0+22, 99.29)	(0+59, 100.03)	0.016

#### Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

#### Results

Discharge	29.14 cfs
Elevation Range	99.1 to 100.0 ft
Flow Area	16.6 ft <sup>2</sup>
Wetted Perimeter	49.7 ft
Hydraulic Radius	0.33 ft
Top Width	49.00 ft
Normal Depth	0.90 ft
Critical Depth	0.73 ft
Critical Slope	0.00532 ft/ft
Velocity	1.75 ft/s
Velocity Head	0.05 ft
Specific Energy	0.95 ft
Froude Number	0.530
Flow Type	Subcritical

## Worksheet for Siboney Half Street - Capacity

### GVF Input Data

Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

### GVF Output Data

Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.90 ft
Critical Depth	0.73 ft
Channel Slope	0.00140 ft/ft
Critical Slope	0.00532 ft/ft

### Messages

Messages	Water Surface Elevation exceeds lowest end station by 0.030000000 0000011ft.
----------	---

Off-site DM Area 02  
 100-Year Storm Analysis  
 Allowable Q at 0.3 cfs/AC = 2.5 cfs

\*\*\* NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)  
 AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

TOTAL 24-HOUR DURATION RAINFALL DEPTH = 5.63 (inches)

SOIL-COVER TYPE	AREA (Acres)	PERCENT OF PERVIOUS AREA	SCS CURVE NUMBER	LOSS RATE Fp (in./hr.)	YIELD
1	8.29	0.00	98. (AMC II)	0.300	0.958

TOTAL AREA (Acres) = 8.29

AREA-AVERAGED LOSS RATE,  $\bar{F}_m$  (in./hr.) = 0.000

AREA-AVERAGED LOW LOSS FRACTION,  $\bar{Y} = 0.042$

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA (ACRES) = 8.30

SOIL-LOSS RATE,  $\bar{F}_m$  (INCH/HR) = 0.000

LOW LOSS FRACTION = 0.042

TIME OF CONCENTRATION (MIN.) = 15.00

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

ORANGE COUNTY "VALLEY" RAINFALL VALUES ARE USED

RETURN FREQUENCY (YEARS) = 100

5-MINUTE POINT RAINFALL VALUE (INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE (INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE (INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE (INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE (INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE (INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME (ACRE-FEET) = 3.48

TOTAL CATCHMENT SOIL-LOSS VOLUME (ACRE-FEET) = 0.42

\*\*\*\*\*

TIME (HOURS)	VOLUME (AF)	Q (CFS)	0.	7.5	15.0	22.5	30.0
0.25	0.0068	0.65	Q	.	.	.	.
0.50	0.0203	0.66	Q	.	.	.	.
0.75	0.0340	0.67	Q	.	.	.	.
1.00	0.0479	0.67	Q	.	.	.	.
1.25	0.0619	0.68	Q	.	.	.	.
1.50	0.0760	0.69	Q	.	.	.	.
1.75	0.0903	0.70	Q	.	.	.	.
2.00	0.1047	0.70	Q	.	.	.	.
2.25	0.1194	0.71	Q	.	.	.	.
2.50	0.1341	0.72	Q	.	.	.	.
2.75	0.1491	0.73	Q	.	.	.	.
3.00	0.1642	0.73	Q	.	.	.	.
3.25	0.1795	0.75	Q	.	.	.	.
3.50	0.1950	0.75	.Q	.	.	.	.
3.75	0.2106	0.77	.Q	.	.	.	.

4.00	0.2265	0.77	.Q	.	.	.	.
4.25	0.2426	0.79	.Q	.	.	.	.
4.50	0.2589	0.79	.Q	.	.	.	.
4.75	0.2754	0.81	.Q	.	.	.	.
5.00	0.2921	0.81	.Q	.	.	.	.
5.25	0.3091	0.83	.Q	.	.	.	.
5.50	0.3263	0.84	.Q	.	.	.	.
5.75	0.3438	0.85	.Q	.	.	.	.
6.00	0.3615	0.86	.Q	.	.	.	.
6.25	0.3796	0.88	.Q	.	.	.	.
6.50	0.3979	0.89	.Q	.	.	.	.
6.75	0.4165	0.91	.Q	.	.	.	.
7.00	0.4354	0.92	.Q	.	.	.	.
7.25	0.4546	0.94	.Q	.	.	.	.
7.50	0.4742	0.95	.Q	.	.	.	.
7.75	0.4941	0.98	.Q	.	.	.	.
8.00	0.5144	0.99	.Q	.	.	.	.
8.25	0.5351	1.01	.Q	.	.	.	.
8.50	0.5562	1.03	.Q	.	.	.	.
8.75	0.5778	1.06	.Q	.	.	.	.
9.00	0.5998	1.07	.Q	.	.	.	.
9.25	0.6222	1.10	.Q	.	.	.	.
9.50	0.6452	1.12	.Q	.	.	.	.
9.75	0.6688	1.16	.Q	.	.	.	.
10.00	0.6929	1.18	.Q	.	.	.	.
10.25	0.7177	1.22	.Q	.	.	.	.
10.50	0.7431	1.24	.Q	.	.	.	.
10.75	0.7692	1.29	.Q	.	.	.	.
11.00	0.7960	1.31	.Q	.	.	.	.
11.25	0.8237	1.37	.Q	.	.	.	.
11.50	0.8523	1.40	.Q	.	.	.	.
11.75	0.8819	1.46	.Q	.	.	.	.
12.00	0.9125	1.50	.Q	.	.	.	.
12.25	0.9484	1.98	. Q	.	.	.	.
12.50	0.9898	2.02	. Q	.	.	.	.
12.75	1.0327	2.13	. Q	.	.	.	.
13.00	1.0772	2.18	. Q	.	.	.	.
13.25	1.1237	2.31	. Q	.	.	.	.
13.50	1.1722	2.39	. Q	.	.	.	.
<b>13.75</b>	<b>1.2233</b>	<b>2.56</b>	. Q	.	.	.	.
<b>14.00</b>	<b>1.2772</b>	<b>2.66</b>	. Q	.	.	.	.
<b>14.25</b>	<b>1.3347</b>	<b>2.91</b>	. Q	.	.	.	.
<b>14.50</b>	<b>1.3963</b>	<b>3.05</b>	. Q	.	.	.	.
<b>14.75</b>	<b>1.4631</b>	<b>3.42</b>	. Q	.	.	.	.
<b>15.00</b>	<b>1.5361</b>	<b>3.65</b>	. Q	.	.	.	.
<b>15.25</b>	<b>1.6183</b>	<b>4.30</b>	. Q	.	.	.	.
<b>15.50</b>	<b>1.7123</b>	<b>4.79</b>	. Q	.	.	.	.
<b>15.75</b>	<b>1.8229</b>	<b>5.92</b>	. Q	.	.	.	.
<b>16.00</b>	<b>1.9678</b>	<b>8.11</b>	. Q	.	.	.	.
<b>16.25</b>	<b>2.3043</b>	<b>24.46</b>	.	.	.	. Q	.
<b>16.50</b>	<b>2.6069</b>	<b>4.84</b>	. Q	.	.	.	.
<b>16.75</b>	<b>2.6976</b>	<b>3.94</b>	. Q	.	.	.	.
<b>17.00</b>	<b>2.7716</b>	<b>3.22</b>	. Q	.	.	.	.
<b>17.25</b>	<b>2.8334</b>	<b>2.77</b>	. Q	.	.	.	.
<b>17.50</b>	<b>2.8875</b>	<b>2.47</b>	. Q	.	.	.	.
17.75	2.9363	2.25	. Q	.	.	.	.
18.00	2.9809	2.07	. Q	.	.	.	.
18.25	3.0182	1.54	. Q	.	.	.	.
18.50	3.0489	1.43	.Q	.	.	.	.
18.75	3.0775	1.34	.Q	.	.	.	.
19.00	3.1044	1.26	.Q	.	.	.	.
19.25	3.1298	1.20	.Q	.	.	.	.

19.50	3.1539	1.14	.Q	.	.	.	.
19.75	3.1769	1.09	.Q	.	.	.	.
20.00	3.1989	1.04	.Q	.	.	.	.
20.25	3.2201	1.00	.Q	.	.	.	.
20.50	3.2404	0.96	.Q	.	.	.	.
20.75	3.2600	0.93	.Q	.	.	.	.
21.00	3.2789	0.90	.Q	.	.	.	.
21.25	3.2972	0.87	.Q	.	.	.	.
21.50	3.3149	0.85	.Q	.	.	.	.
21.75	3.3321	0.82	.Q	.	.	.	.
22.00	3.3489	0.80	.Q	.	.	.	.
22.25	3.3652	0.78	.Q	.	.	.	.
22.50	3.3810	0.76	.Q	.	.	.	.
22.75	3.3965	0.74	Q	.	.	.	.
23.00	3.4117	0.72	Q	.	.	.	.
23.25	3.4264	0.71	Q	.	.	.	.
23.50	3.4409	0.69	Q	.	.	.	.
23.75	3.4550	0.68	Q	.	.	.	.
24.00	3.4689	0.66	Q	.	.	.	.
24.25	3.4757	0.00	Q	.	.	.	.

-----

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:  
 (Note: 100% of Peak Flow Rate estimate assumed to have  
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1440.0
10%	240.0
20%	45.0
30%	30.0
40%	15.0
50%	15.0
60%	15.0
70%	15.0
80%	15.0
90%	15.0

## Cypress - 12" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	12.0 in
Diameter	12.0 in
Discharge	2.3 cfs
Results	
Discharge	2.3 cfs
Normal Depth	12.0 in
Flow Area	0.8 ft <sup>2</sup>
Wetted Perimeter	3.1 ft
Hydraulic Radius	3.0 in
Top Width	0.00 ft
Critical Depth	7.8 in
Percent Full	100.0 %
Critical Slope	0.005 ft/ft
Velocity	2.94 ft/s
Velocity Head	0.13 ft
Specific Energy	1.13 ft
Froude Number	(N/A)
Maximum Discharge	2.5 cfs
Discharge Full	2.3 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	12.0 in
Critical Depth	7.8 in
Channel Slope	0.003 ft/ft
Critical Slope	0.005 ft/ft



## Cypress - 18" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	18.0 in
Diameter	18.0 in
Discharge	6.8 cfs
Results	
Discharge	6.8 cfs
Normal Depth	18.0 in
Flow Area	1.8 ft <sup>2</sup>
Wetted Perimeter	4.7 ft
Hydraulic Radius	4.5 in
Top Width	0.00 ft
Critical Depth	12.1 in
Percent Full	100.0 %
Critical Slope	0.005 ft/ft
Velocity	3.85 ft/s
Velocity Head	0.23 ft
Specific Energy	1.73 ft
Froude Number	(N/A)
Maximum Discharge	7.3 cfs
Discharge Full	6.8 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	18.0 in
Critical Depth	12.1 in
Channel Slope	0.003 ft/ft
Critical Slope	0.005 ft/ft

## Cypress - 24" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	24.0 in
Diameter	24.0 in
Discharge	14.6 cfs
Results	
Discharge	14.6 cfs
Normal Depth	24.0 in
Flow Area	3.1 ft <sup>2</sup>
Wetted Perimeter	6.3 ft
Hydraulic Radius	6.0 in
Top Width	0.00 ft
Critical Depth	16.5 in
Percent Full	100.0 %
Critical Slope	0.004 ft/ft
Velocity	4.66 ft/s
Velocity Head	0.34 ft
Specific Energy	2.34 ft
Froude Number	(N/A)
Maximum Discharge	15.8 cfs
Discharge Full	14.6 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	24.0 in
Critical Depth	16.5 in
Channel Slope	0.003 ft/ft
Critical Slope	0.004 ft/ft

## Cypress - 30" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	30.0 in
Diameter	30.0 in
Discharge	26.5 cfs
Results	
Discharge	26.5 cfs
Normal Depth	30.0 in
Flow Area	4.9 ft <sup>2</sup>
Wetted Perimeter	7.9 ft
Hydraulic Radius	7.5 in
Top Width	0.00 ft
Critical Depth	21.1 in
Percent Full	100.0 %
Critical Slope	0.004 ft/ft
Velocity	5.41 ft/s
Velocity Head	0.45 ft
Specific Energy	2.95 ft
Froude Number	(N/A)
Maximum Discharge	28.6 cfs
Discharge Full	26.5 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	30.0 in
Critical Depth	21.1 in
Channel Slope	0.003 ft/ft
Critical Slope	0.004 ft/ft

## Cypress - 36" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	36.0 in
Diameter	36.0 in
Discharge	43.2 cfs
Results	
Discharge	43.2 cfs
Normal Depth	36.0 in
Flow Area	7.1 ft <sup>2</sup>
Wetted Perimeter	9.4 ft
Hydraulic Radius	9.0 in
Top Width	0.00 ft
Critical Depth	25.7 in
Percent Full	100.0 %
Critical Slope	0.004 ft/ft
Velocity	6.11 ft/s
Velocity Head	0.58 ft
Specific Energy	3.58 ft
Froude Number	(N/A)
Maximum Discharge	46.4 cfs
Discharge Full	43.2 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	36.0 in
Critical Depth	25.7 in
Channel Slope	0.003 ft/ft
Critical Slope	0.004 ft/ft

## Cypress - 42" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	42.0 in
Diameter	42.0 in
Discharge	65.1 cfs
Results	
Discharge	65.1 cfs
Normal Depth	42.0 in
Flow Area	9.6 ft <sup>2</sup>
Wetted Perimeter	11.0 ft
Hydraulic Radius	10.5 in
Top Width	0.00 ft
Critical Depth	30.4 in
Percent Full	100.0 %
Critical Slope	0.004 ft/ft
Velocity	6.77 ft/s
Velocity Head	0.71 ft
Specific Energy	4.21 ft
Froude Number	(N/A)
Maximum Discharge	70.1 cfs
Discharge Full	65.1 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	42.0 in
Critical Depth	30.4 in
Channel Slope	0.003 ft/ft
Critical Slope	0.004 ft/ft

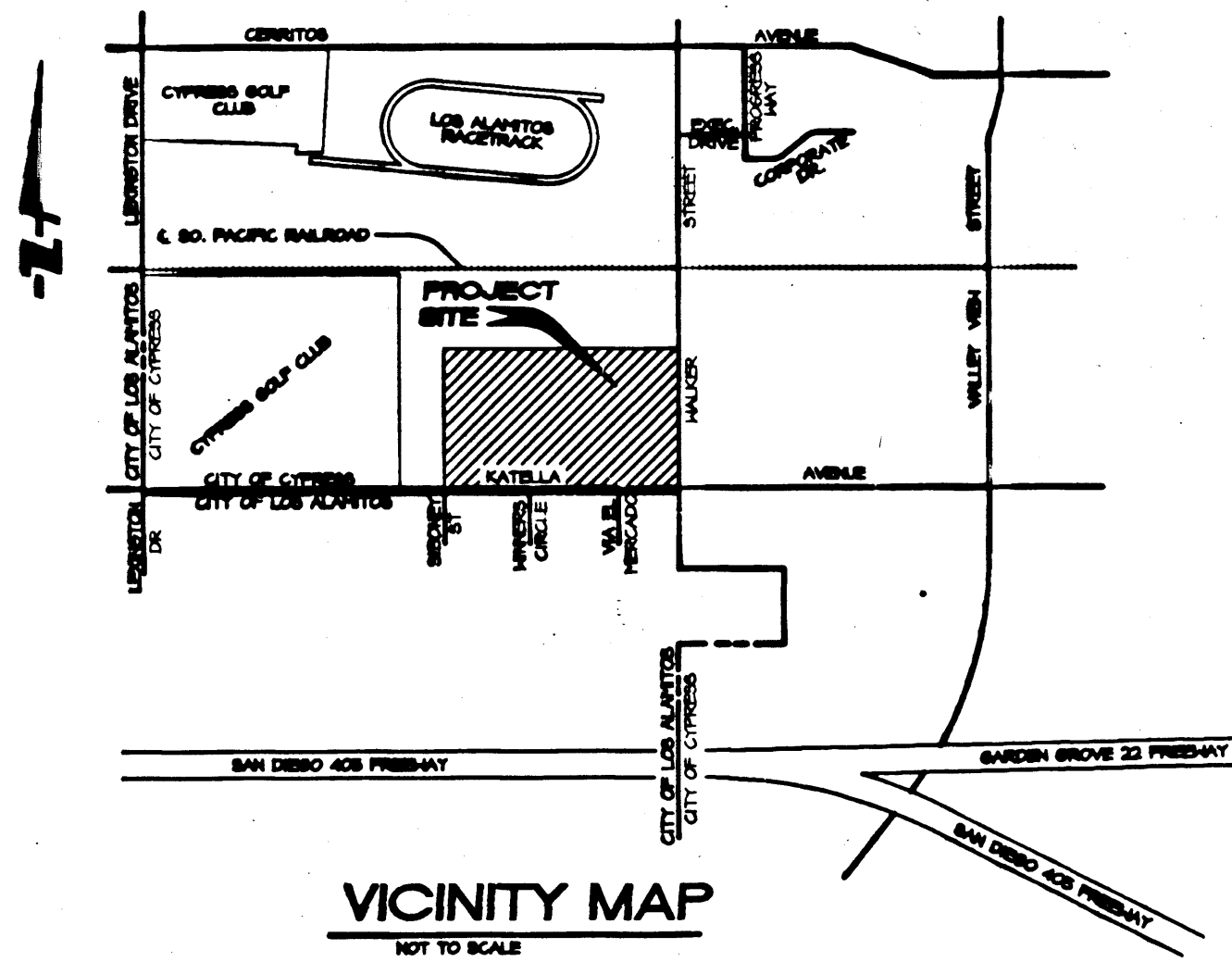
## Cypress - 48" Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity
Input Data	
Roughness Coefficient	0.011
Channel Slope	0.003 ft/ft
Normal Depth	48.0 in
Diameter	48.0 in
Discharge	93.0 cfs
Results	
Discharge	93.0 cfs
Normal Depth	48.0 in
Flow Area	12.6 ft <sup>2</sup>
Wetted Perimeter	12.6 ft
Hydraulic Radius	12.0 in
Top Width	0.00 ft
Critical Depth	35.1 in
Percent Full	100.0 %
Critical Slope	0.004 ft/ft
Velocity	7.40 ft/s
Velocity Head	0.85 ft
Specific Energy	4.85 ft
Froude Number	(N/A)
Maximum Discharge	100.0 cfs
Discharge Full	93.0 cfs
Slope Full	0.003 ft/ft
Flow Type	Undefined
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	48.0 in
Critical Depth	35.1 in
Channel Slope	0.003 ft/ft
Critical Slope	0.004 ft/ft

# **ATTACHMENT C**

**Storm Drain Record Drawings**

CYPRESS BUSINESS AND PROFESSIONAL CENTER  
STORM DRAIN IMPROVEMENT PLANS  
FOR  
WINNER'S CIRCLE



GENERAL NOTES:

- ALL WORK DONE SHALL CONFORM TO THE LATEST REVISIONS OF CITY OF CYPRESS STANDARD PLANS, ORANGE COUNTY STREET AND HIGHWAY STANDARD PLANS, AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (PREPARED BY THE SO. CAL. CHAPTERS OF THE APWA AND ASSOCIATED GENERAL CONTRACTORS OF AMERICA).
- CITY OF CYPRESS STANDARD PLANS SHALL BE CONSIDERED A PART OF THESE PLANS, AND SHALL BE ON THE JOB SITE AT THE TIME OF CONSTRUCTION.
- THE EXISTENCE AND LOCATION OF UTILITY STRUCTURES AND FACILITIES ARE SHOWN ON THESE PLANS OR IN THE SPECIAL PROVISIONS ACCORDING TO THE RECORDS AND INFORMATION AVAILABLE TO THE CITY AND UTILITY COMPANIES. ATTENTION IS CALLED TO THE POSSIBLE EXISTENCE OF OTHER UTILITY FACILITIES OR STRUCTURES NOT KNOWN TO THE CITY OR IN A LOCATION DIFFERENT FROM THAT SHOWN ON THE PLANS OR IN THE SPECIAL PROVISIONS. THE CONTRACTOR IS REQUIRED TO ASCERTAIN THE LOCATION OF ALL UNDERGROUND UTILITY STRUCTURES AND FACILITIES PRIOR TO DOING WORK THAT MAY DAMAGE SUCH STRUCTURES AND FACILITIES, INCLUDING THOSE NOT SHOWN, OR INTERFERE WITH THEIR SERVICE AND TO TAKE SUCH PRECAUTIONARY MEASURES IN THE COURSE OF SAID WORK TO PREVENT SUCH DAMAGE OR INTERFERENCE.
- ALL CONSTRUCTION IN DEDICATED RIGHTS-OF-WAY MUST BE COVERED BY AN EXCAVATION PERMIT FROM THE CITY OF CYPRESS. NOTIFY CITY PUBLIC WORKS INSPECTOR 48 HOURS IN ADVANCE OF ALL WORK IN PUBLIC RIGHT-OF-WAY.
- ALL ELEVATIONS SHALL BE BASED ON ORANGE COUNTY SURVEYOR'S BENCH MARKS.
- ALL MONUMENTS SHALL BE SET AND TIES SUBMITTED TO THE CITY ENGINEER PRIOR TO ACCEPTANCE OF IMPROVEMENTS.
- ALL UTILITIES SHALL BE UNDERGROUND AND SHALL BE INSTALLED PRIOR TO PAVING.
- IF THE BACKFILL MATERIAL FROM SEWER AND UTILITY EXCAVATIONS WITHIN DEDICATED RIGHTS-OF-WAY IS DETERMINED TO BE OF UNSATISFACTORY COMPOSITION BY THE CITY ENGINEER, GRANULAR BACKFILL SHALL BE REQUIRED WITH A SAND EQUIVALENT OF 30.
- LOCATION OF UNDERGROUND ELECTRICAL AND TELEPHONE CONDUIT WITHIN DEDICATED RIGHTS-OF-WAY SHALL BE SHOWN ON PLANS BEFORE EXCAVATION OF SAME.
- ALL CONCRETE TO BE CLASS "A", 6 SACK MIX.
- CRUSHED AGGREGATE BASE (3/4" MAX.) REQUIRED IN ALL STREETS.
- ALL SEWER AND STORM DRAIN MANHOLES SHALL BE LEFT 1.0' BELOW FINISHED STREET GRADE AND COVERED WITH A 3/16" STEEL PLATE AFTER STREET SECTION HAS BEEN CONSTRUCTED PER PLAN. IT SHALL BE THE RESPONSIBILITY OF THE SEWER OR STORM DRAIN CONTRACTOR TO REMOVE THE PAVEMENT AROUND THE STEEL PLATE AND RAISE THE MANHOLES PER STANDARD PLAN NO. 314.
- AS-BUILT DRAWINGS INCLUDING THE LOCATION OF ALL UTILITY SUB-STRUCTURES SHALL BE FILED WITH THE CITY ENGINEER PRIOR TO ACCEPTANCE OF IMPROVEMENTS.
- PRIOR TO STARTING OF ANY WORK, THE CONTRACTOR SHALL SET UP A JOB SITE PRE-CONSTRUCTION MEETING WITH THE CITY IN ATTENDANCE AND SHALL SUBMIT HIS PROPOSED CONSTRUCTION SCHEDULE IN CONFORMANCE WITH SECTION 6-1, CONSTRUCTION SCHEDULE & COMMENCEMENT OF WORK, AS OUTLINED IN THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- THE METHODS AND PROCEDURES FOR BARRICADING AND CHANNELIZATION DURING CONSTRUCTION SHALL CONFORM TO THE MANUAL OF WARNING SIGNS, LIGHTS AND DEVICES FOR USE IN PERFORMANCE OF WORK ON HIGHWAYS ISSUED BY THE DEPARTMENT OF TRANSPORTATION AND LATEST REVISION THEREOF.
- RELATIVE COMPACTION OF 95% IS REQUIRED IN ALL SUB-GRADE AND BASE MATERIALS ON ARTERIAL STREETS, 90% FOR ALL OTHER STREETS AND PAVING AREAS.

ENGINEER'S NOTICE TO CONTRACTOR:

- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- ALL UNDERGROUND UTILITIES OR STRUCTURES, REPORTED OR FOUND ON PUBLIC RECORDS, ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH THE IMPROVEMENTS HEREON, AGREES TO ASSUME LIABILITY AND TO HOLD THE ENGINEER HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED OR INDICATED ON PUBLIC RECORDS, OR THOSE CONSTRUCTED AT VARIANCE WITH REPORTED OR RECORDED LOCATIONS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHERS FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF ALL UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
- THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
- THE ENGINEER DOES NOT RECOMMEND OR ENDORSE THE USE OF ASBESTOS-CEMENT WATER PIPE OR ANY PRODUCTS CONTAINING ASBESTOS DUE TO THE HEALTH HAZARD CONNECTED WITH SUCH PRODUCTS. SPECIFICATION HEREON OF ANY SUCH PRODUCT IS AT THE DIRECTION OF THE JURISDICTIONAL AGENCY. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL CONSTRUCTION, CONNECTION AND REMOVAL OF ASBESTOS PRODUCTS AND SHALL FOLLOW ALL OSHA & EPA GUIDELINES TO MINIMIZE HEALTH HAZARDS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN HEREON AT THE JOB SITE PRIOR TO ANY CONSTRUCTION. FUSCOE ENGINEERING, INC. SHALL BE NOTIFIED OF ANY DISCREPANCIES. REVISIONS TO THE PLAN SHALL BE APPROVED BY THE ENGINEERING IN WRITING PRIOR TO IMPLEMENTATION.

CONSTRUCTION NOTES & QUANTITIES

STORM DRAIN CONSTRUCTION NOTES:			
NO	DESCRIPTION	QUANTITIES	UNITS
10	CONSTRUCT 18" RCP (2000-D)	1590	LF
11	CONSTRUCT 24" RCP (1250-D)	201	LF
12	CONSTRUCT 36" RCP (1250-D)	351	LF
13	CONSTRUCT 8" PVC (SCH. 40) DRAINLINE	8	LF
14	CONSTRUCT CATCH BASIN NO. 2 PER CITY OF CYPRESS STD. NO. 302	2	EA
15	CONSTRUCT JUNCTION STRUCTURE NO. 4 PER CITY OF CYPRESS STD. NO. 308	2	EA
16	CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. NO. 311	10	EA
17	CONSTRUCT 24" 24" PRECAST CONCRETE CATCH BASIN BROOKS PRODUCT NO. 2424 WITH TRAFFIC RATED GRATE INLET (REFER TO DETAIL A, SHEET 5 FOR MODIFICATION TO GRATED INLET)	3	EA
18	JOIN EXISTING 36" RCP	1	EA
19	INSTALL W.C.P. BEDDING PER CITY OF CYPRESS STD. NO. 324, CASE III, AND DETAIL "B", SHEET 4.	2142	LF
20	NOT USED		LF
21	PROTECT IN PLACE	-	-
22	REMOVE EXIST. 6" CURB	20	LF
23	REMOVE EXIST. A.C. PAVEMENT	60	SF
24	CONSTRUCT 6" CURB PER CITY OF CYPRESS STD. NO. 203	12	LF
25	REMOVE EXIST. RIBBON GUTTER	13	LF
26	GRADE BERM PER PLAN ELEVATION AND LOCATION	18	LF

NOTE: QUANTITIES SHOWN ARE FOR BIDDING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES PRIOR TO BIDDING AND CONSTRUCTION.

SHEET INDEX

TITLE SHEET.....	1
STORM DRAIN LINE "A".....	2-4
STORM DRAIN LINE "B".....	5

LEGEND:

- R/W RIGHT OF WAY
- FS FINISHED SURFACE
- FG FINISHED GRADE
- CF CURB FACE
- FL FLOW LINE
- HP HIGH POINT
- LP LOW POINT
- INV INVERT ELEVATION
- GB GRADE BREAK
- TC TOP OF GRATE
- S SLOPE OF PIPE
- CENTERLINE CENTERLINE
- PROPERTY LINE PROPERTY LINE
- ASPHALT CONCRETE ASPHALT CONCRETE
- CONCRETE PAVING CONCRETE PAVING
- EX. S EXISTING SEWER
- EX. W EXISTING WATER
- EX. G EXISTING GAS
- EX. SD EXISTING STORM DRAIN
- CATCH BASIN CATCH BASIN
- SEWER MANHOLE SEWER MANHOLE
- JUNCTION STRUCTURE JUNCTION STRUCTURE
- FIRE HYDRANT FIRE HYDRANT
- WATER VALVE WATER VALVE
- WATER METER WATER METER
- STREET LIGHT STREET LIGHT
- STREET NAME SIGN STREET NAME SIGN
- PROPOSED SEWER PROPOSED SEWER
- PROPOSED WATER PROPOSED WATER
- PROPOSED STORM DRAIN PROPOSED STORM DRAIN

BENCHMARK NOTE:

VERTICAL DATUM USED IN THE DESIGN OF THIS PLAN IS THE ORANGE COUNTY SURVEYOR'S BENCH MARK NUMBER 18-84-74, 1982 ADJUSTED ELEVATION OF 25.362. THE 1995 ADJUSTED ELEVATION OF 18-84-74 IS 25.046. TO CONVERT THE 1982 ELEVATIONS SHOWN HEREIN TO THE 1995 DATUM, SUBTRACT 0.316 FEET FROM THE ELEVATION GIVEN.

LEGAL DESCRIPTION:  
IN THE UNINCORPORATED TERRITORY OF ORANGE COUNTY, CALIFORNIA, A PORTION OF LOT 1 OF TRACT NO. 13679.

BASIS OF BEARINGS:  
THE BEARINGS SHOWN ON THESE PLANS ARE BASED UPON THE LINE BETWEEN TRIANGULATION STATIONS (NGS BRASS CAP STAMPED PLANO 1939) AND (OGS 6-7-10) BEING N9 01' 32"E PER THE CALIFORNIA COORDINATE SYSTEM ZONE VI, 1975 DATUM ON FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

OWNER:  
**BOE II**  
8615 ELDER CREEK ROAD  
SACRAMENTO, CALIFORNIA 95828  
(916) 381-3600

SOILS ENGINEER/GEOLOGIST:  
RANEY GEOTECHNICAL  
3140 BEACON BLVD.  
WEST SACRAMENTO, CA. 95691  
(916) 371-0434

FUSCOE  
ENGINEERING

16735 Van Korman, Ste. 100  
Irvine, California 92714  
Phone (714) 474-1980  
FAX (714) 474-5315

**DIG ALERT**  
DIAL TOLL FREE  
1-800-488-6888  
AT LEAST TWO DAYS BEFORE YOU DIG  
UNDERGROUND SERVICE ALERT  
OF SOUTHERN CALIFORNIA



D-96021.01

REVISIONS				
No.	Date	Initials	Description	App'd

REFERENCES				
Bench Mark:	18-84-74	ELEV. 25.362	CONTROL MAP NO. 12	
4000 FEET WESTERLY ALONG KATELLA AVENUE FROM ITS INTERSECTION WITH LEXINGTON DRIVE; 59.5 FEET NORTHERLY OF THE CENTERLINE OF THE AVENUE; 6.8 FEET NORTHERLY OF A POWER POLE NUMBER 1360380E; 4 FEET NORTHERLY OF THE NORTH EDGE OF A CATCH BASIN; 17.5 FEET EAST SOUTHEAST OF A FIRE HYDRANT; SET AT THE EAST END OF A 6 INCH BY 5.5 FEET CONCRETE HEADWALL ABOUT 1.5 FEET BELOW THE TOP OF THE CURB.				
Planned:				
Field Book:				

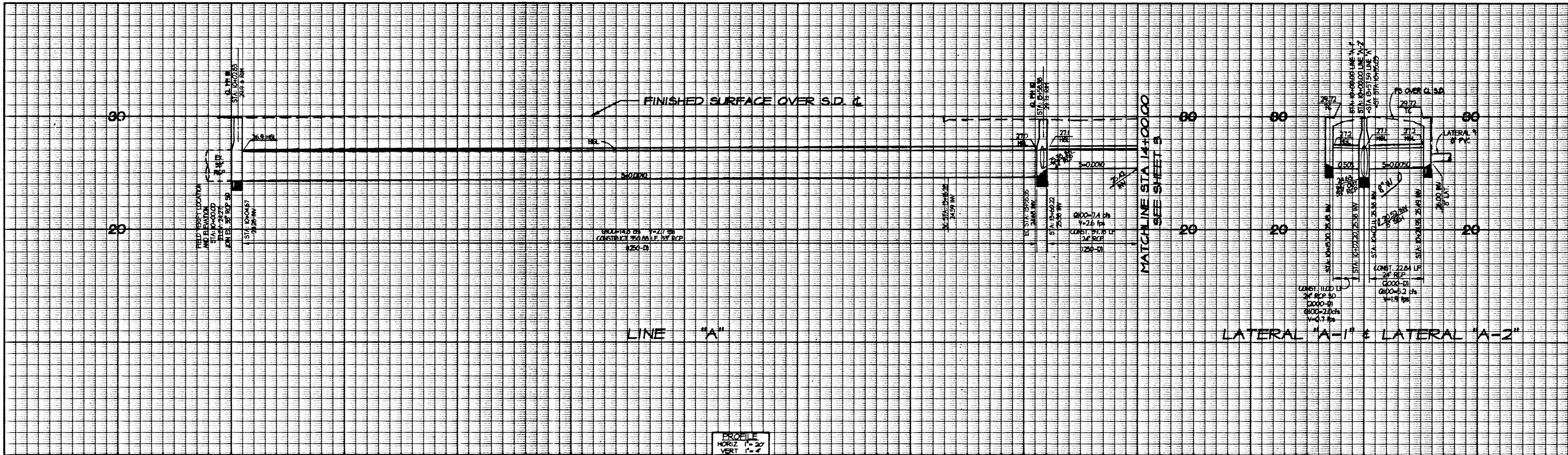
PLANS PREPARED UNDER THE SUPERVISION OF:	
DINO CAPANNELLI RCE 40838 EXP. 8/30/97	2-24-97 DATE
DESIGNED BY: DC	DATE: 2-24-97
DRAWN BY: JJS	DATE: 2-24-97
CHECKED BY: EC	DATE: 2-24-97

APPROVED BY THE CITY OF CYPRESS	
Mark Christofels CITY ENGINEER P.W.D. RCE 40899 EXP 3/31/98	1/24/98 DATE

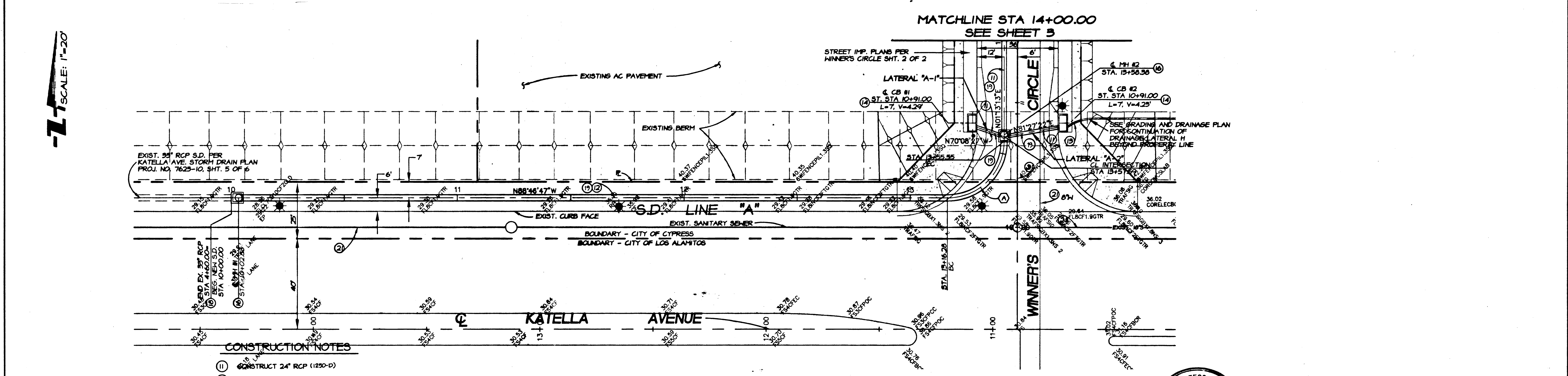
CITY OF CYPRESS  
DEPARTMENT OF PUBLIC WORKS  
CYPRESS BUSINESS AND PROFESSIONAL CENTER  
STORM DRAIN IMPROVEMENT PLANS  
FOR  
WINNERS CIRCLE

SHEET 1 OF 5
PROJECT NO.
9743
FILE NO.
D-96021.1





10+00 11+00 12+00 13+00 14+00 10+50 10+00 10+50

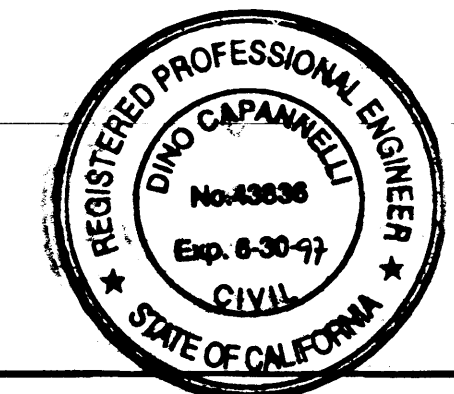


**FUSCOE ENGINEERING**  
16735 Van Karman, Ste. 100  
Irvine, California 92614  
Phone (714) 474-1960  
FAX (714) 474-5315

- CONSTRUCTION NOTES**
- (1) CONSTRUCT 24" RCP (1250-D)
  - (2) CONSTRUCT 33" RCP (1250-D)
  - (3) CONSTRUCT 8" PVC (SCH. 40) S.D. LATERAL
  - (4) CONSTRUCT CATCH BASIN INLET NO. 2 PER CITY OF CYPRESS STD. PLAN NO. 302
  - (5) CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. PLAN NO. 311
  - (6) JOIN EXISTING 33" RCP
  - (7) PROTECT IN PLACE
  - (8) INSTALL R.C.P. BEDDING PER CITY OF CYPRESS STD. NO. 814, CASE III, AND DETAIL "B", SHEET 4.

**STORM DRAIN CURVE TABLE:**

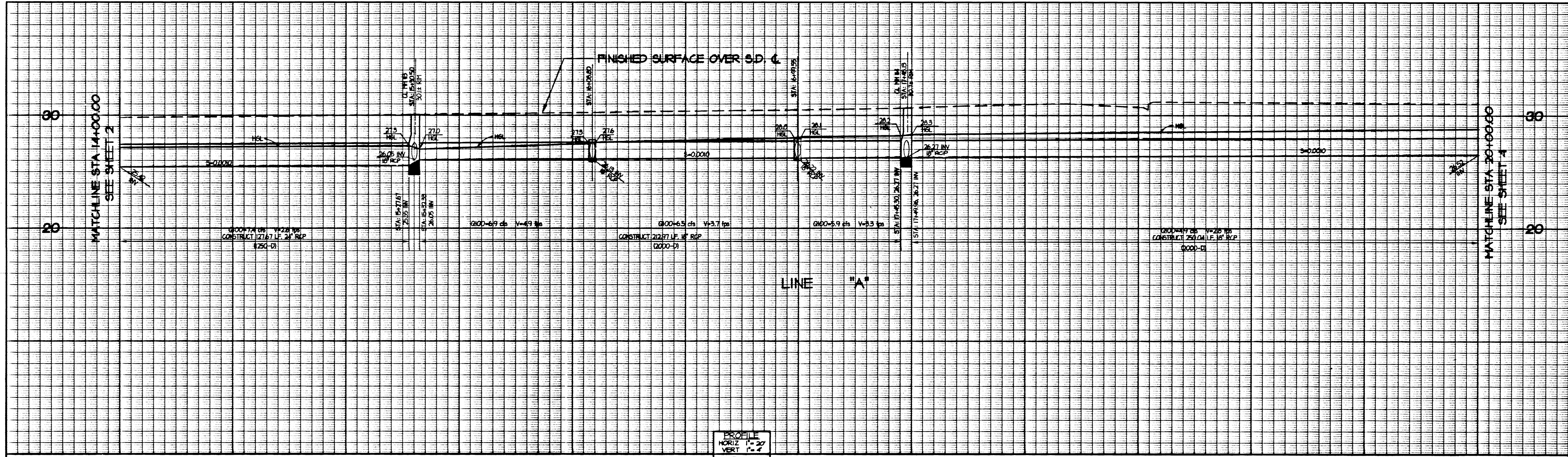
O	Δ	R	L	T
0	90°00'00"	25.00'	39.27'	25.00'



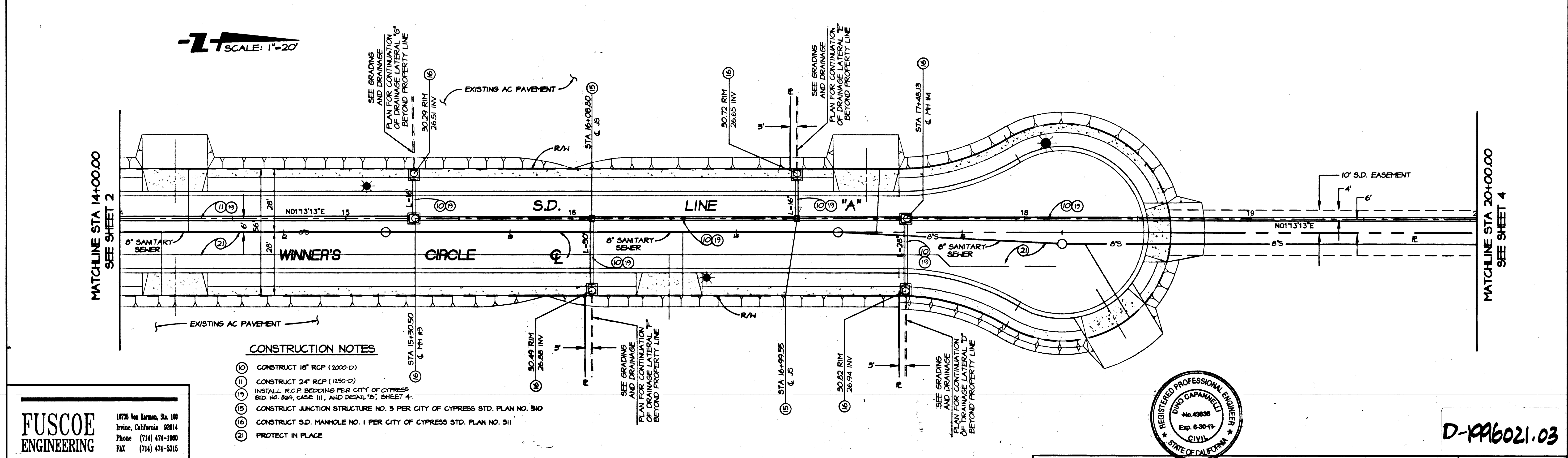
D-1996021.02

REVISIONS					REFERENCES		SCALES		APPROVED BY THE CITY OF CYPRESS		CITY OF CYPRESS		PROJECT NO.
No.	Date	Initials	Description	Date	App'd	Bench Mark: 18-84-74 ELEV. 25.362	HORIZ: 1"=20'	PLANS PREPARED UNDER THE SUPERVISION OF:		DEPARTMENT OF PUBLIC WORKS		9743	
						4000 FEET WESTERLY ALONG KATELLA AVENUE FROM ITS INTERSECTION WITH LEXINGTON DRIVE; 59.5 FEET NORTHERLY OF THE CENTERLINE OF THE AVENUE; 6.8 FEET NORTHERLY OF A POWER POLE NUMBER 1360380E; 4 FEET NORTHERLY OF THE NORTH EDGE OF A CATCH BASIN; 17.5 FEET EAST SOUTHEAST OF A FIRE HYDRANT; SET AT THE EAST END OF A 6 INCH BY 5.5 FEET CONCRETE HEADWALL ABOUT 1.5 FEET BELOW THE TOP OF THE CURB. <th>VERT: 1"=4'</th> <td colspan="2"><i>Mark Christofels</i> 2-24-92 DINO CHIANELLI RCE 43856 EXP 8/30/97</td> <td colspan="2"><i>DC</i> <i>1/26/92</i></td> <td colspan="1">CYPRESS BUSINESS AND PROFESSIONAL CENTER STORM DRAIN IMPROVEMENT PLAN</td>	VERT: 1"=4'	<i>Mark Christofels</i> 2-24-92 DINO CHIANELLI RCE 43856 EXP 8/30/97		<i>DC</i> <i>1/26/92</i>		CYPRESS BUSINESS AND PROFESSIONAL CENTER STORM DRAIN IMPROVEMENT PLAN	
						Plans:		DESIGNED BY: <i>DC</i>	DATE 2-24-92	MARK CHRISTOFELS CITY ENGINEER/P.W.D. RCE 40888 EXP 3/31/98		FOR	
						Field Book:		DRAWN BY: <i>JT</i>	DATE 2-24-92			FILE NO.	
								CHECKED BY: <i>DC</i>	DATE 2-24-92			D-96021.2	
										WINNERS CIRCLE			





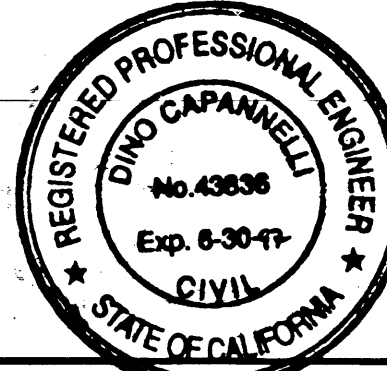
14+00 15+00 16+00 17+00 18+00 19+00 20+00



**CONSTRUCTION NOTES**

- (10) CONSTRUCT 16" RCP (2000-D)
- (11) CONSTRUCT 24" RCP (1250-D)
- (12) INSTALL R.C.P. BEDDING PER CITY OF CYPRESS STD. NO. 324, CASE III, AND DETAIL "B", SHEET 4.
- (13) CONSTRUCT JUNCTION STRUCTURE NO. 3 PER CITY OF CYPRESS STD. PLAN NO. 310
- (14) CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. PLAN NO. 311
- (15) PROTECT IN PLACE

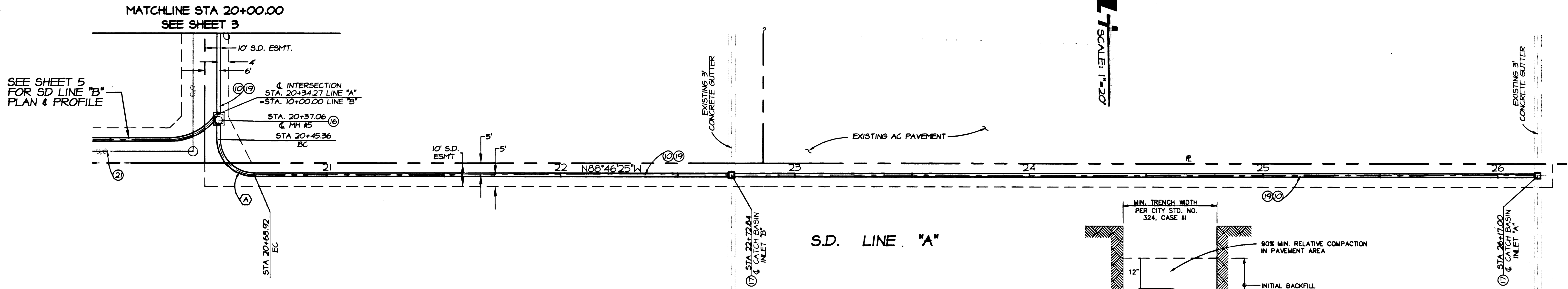
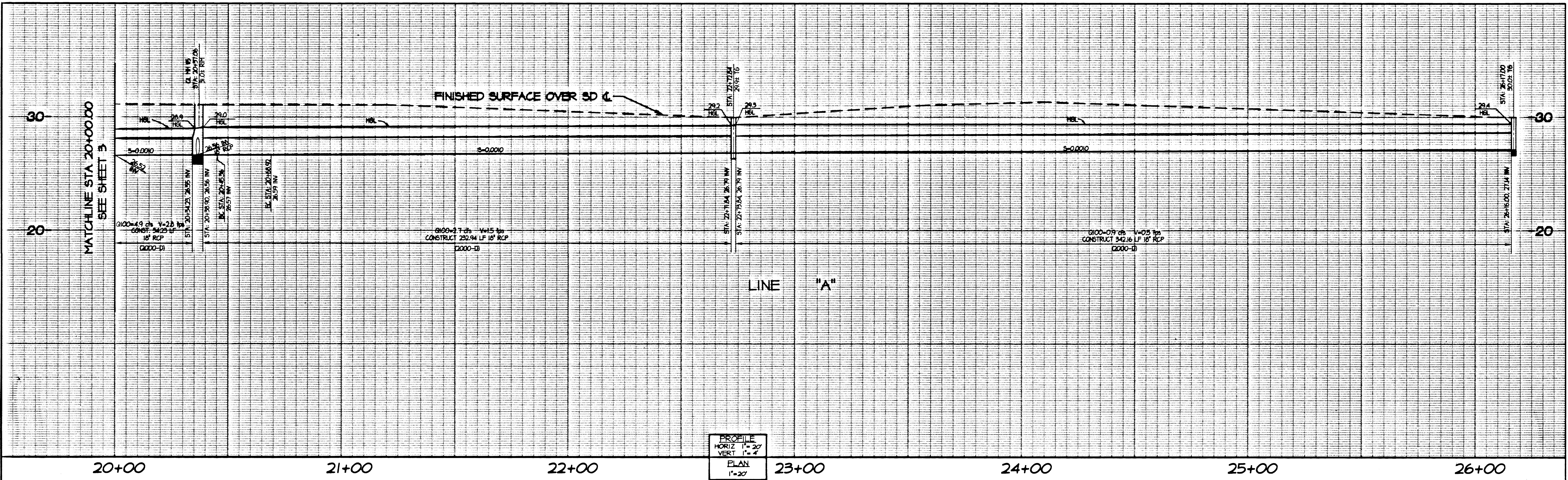
**FUSCOE ENGINEERING**  
16735 Van Korman, Ste. 100  
Irvine, California 92614  
Phone (714) 474-1900  
Fax (714) 474-5315



**D-96021.03**

REVISIONS				REFERENCES		SCALES		APPROVED BY THE CITY OF CYPRESS		CITY OF CYPRESS		SHEET 3 OF 5	
No.	Date	Initials	Description	Date	App'd	Bench Mark:	ELEV.	DESIGNED BY:	DATE:	DEPARTMENT OF PUBLIC WORKS	PROJECT NO.	FILE NO.	
						1B-84-74	25.362				9743		
						4000 FEET WESTERLY ALONG KATELLA AVENUE FROM ITS INTERSECTION WITH LEXINGTON DRIVE; 59.5 FEET NORTHERLY OF THE CENTERLINE OF THE AVENUE; 6.8 FEET NORTHERLY OF A POWER POLE NUMBER 1360380E; 4 FEET NORTHERLY OF THE NORTH EDGE OF A CATCH BASIN; 17.5 FEET EAST SOUTHEAST OF A FIRE HYDRANT; SET AT THE EAST END OF A 6 INCH BY 5.5 FEET CONCRETE HEADWALL ABOUT 1.5 FEET BELOW THE TOP OF THE CURB.							
						Planned							
						Field Book:							
						PLANS PREPARED UNDER THE SUPERVISION OF:				CYPRESS BUSINESS AND PROFESSIONAL CENTER		D-96021.3	
						DINO CAPANNELLI				FOR			
						2-24-97				WINNERS CIRCLE			
						DATE 2-24-97							
						DATE 2-24-97							
						DATE 2-24-97							





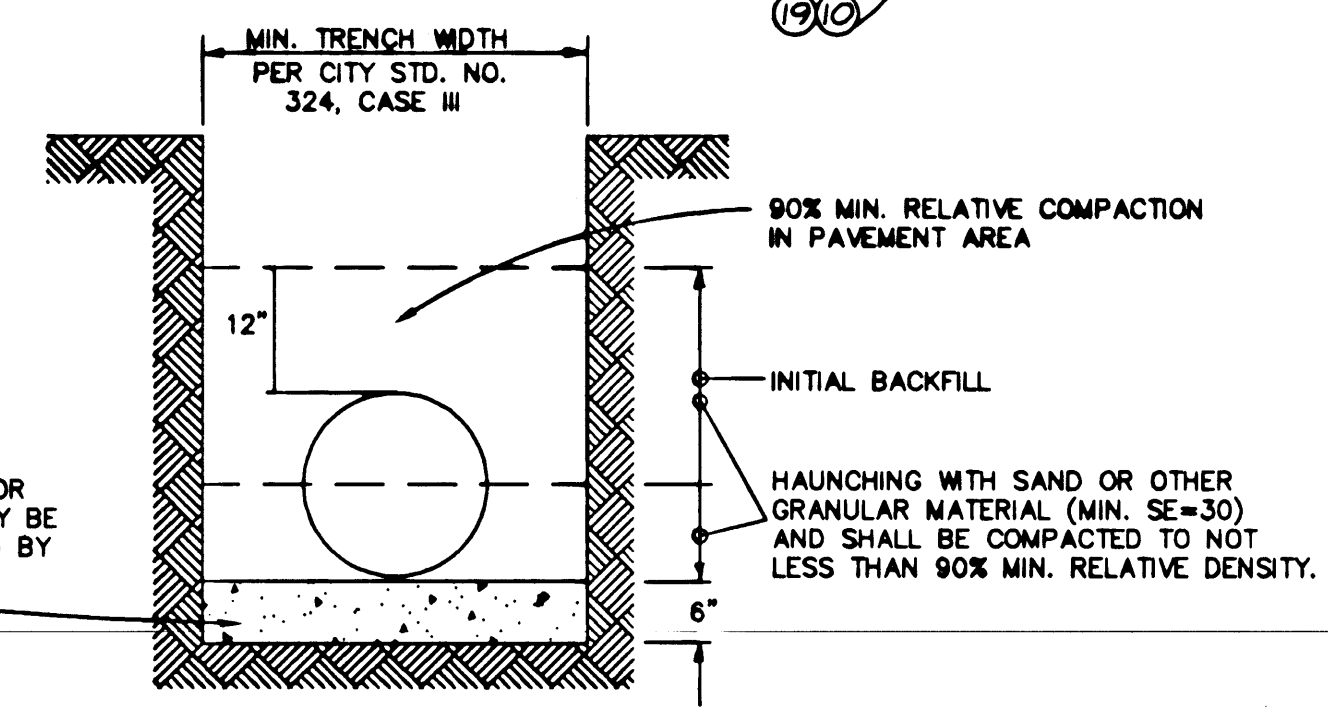
**CONSTRUCTION NOTES**

- (10) CONSTRUCT 18" RCP (2000-D)
- (16) CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. PLAN NO. 311
- (17) CONSTRUCT 24" x 24" PRECAST CONCRETE CATCH BASIN BROOKS PRODUCT #2424 WITH TRAFFIC RATED GRATE INLET (REFER TO DETAIL A, SHEET 5 FOR MODIFICATIONS TO GRATED INLET)
- (19) INSTALL R.C.P. BEDDING PER CITY OF CYPRESS STD. NO. 324 CASE III AND DETAIL "B", SHEET 4
- (20) NOT USED
- (21) PROTECT IN PLACE

**STORM DRAIN CURVE TABLE:**

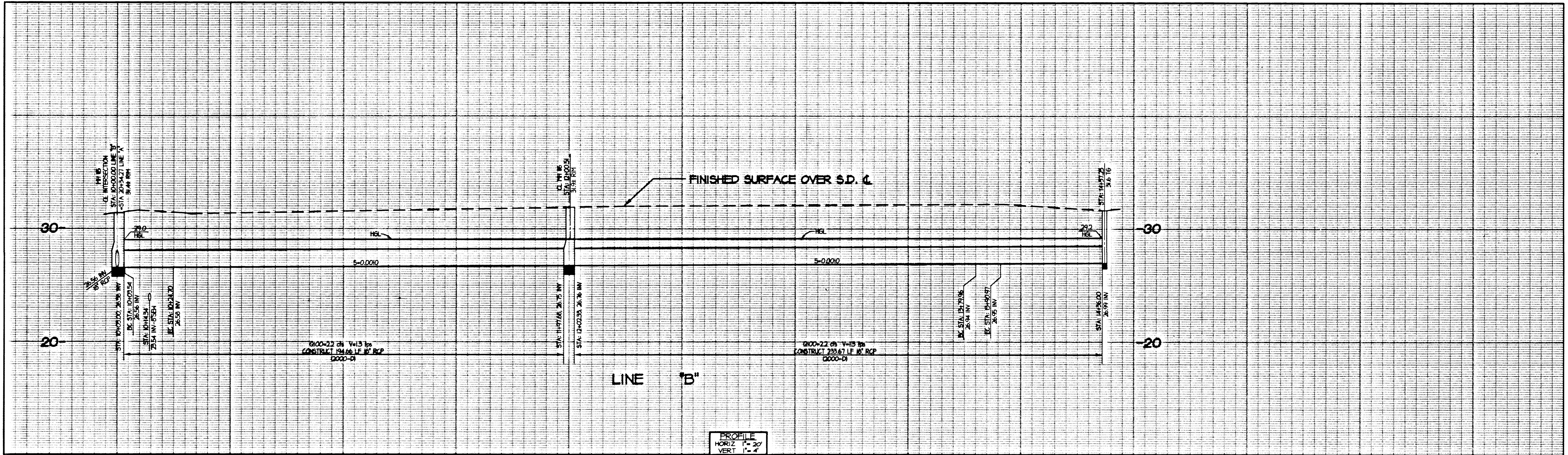
Δ	R	L	T
69°59'36"	15.00'	23.56'	15.00'

**FUSCOE ENGINEERING**  
 16735 Von Karman, Ste. 100  
 Irvine, California 92614  
 Phone (714) 474-1080  
 FAX (714) 474-5315

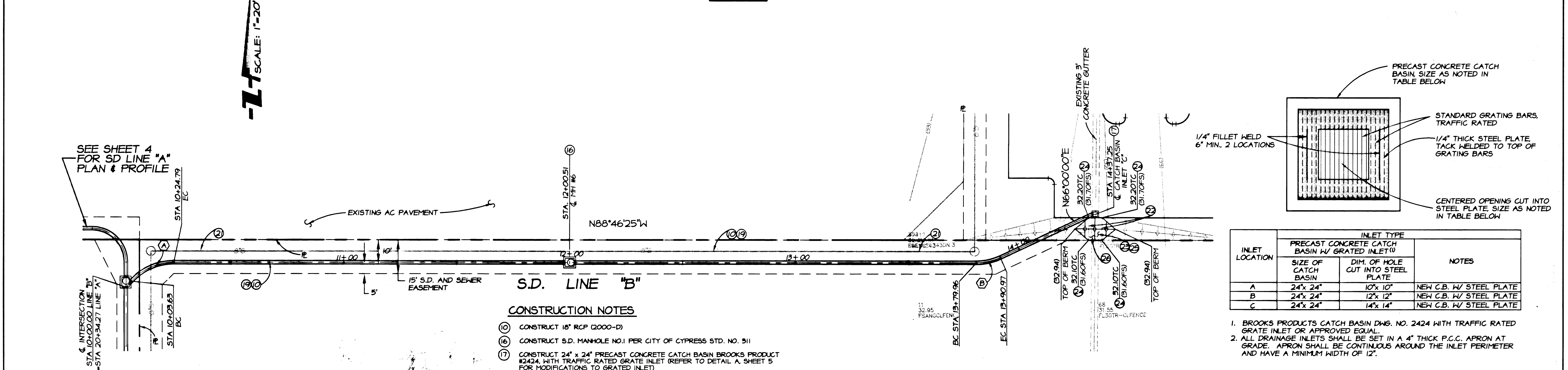


<b>REVISIONS</b>				<b>REFERENCES</b>				<b>SCALES</b>				<b>APPROVED BY THE CITY OF CYPRESS</b>				<b>CITY OF CYPRESS</b>				<b>SHEET 4 OF 5</b>			
																<b>DEPARTMENT OF PUBLIC WORKS</b>				<b>PROJECT NO.</b>			
																<b>CYPRESS BUSINESS AND PROFESSIONAL CENTER</b>				<b>9743</b>			
																<b>STORM DRAIN IMPROVEMENT PLAN</b>				<b>FILE NO.</b>			
																<b>FOR</b>				<b>D-96021.4</b>			
																<b>WINNERS CIRCLE</b>							





10+00 11+00 12+00 13+00 14+00 15+00



STORM DRAIN CURVE TABLE:				
O	Δ	R	L	T
(A)	48°30'10"	25.00'	21.16'	11.26'
(B)	25°13'35"	25.00'	11.01'	5.59'

CONSTRUCTION NOTES			
(1)	CONSTRUCT 18" RCP (2000-D)		
(2)	CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. NO. 311		
(3)	CONSTRUCT 24" x 24" PRECAST CONCRETE CATCH BASIN BROOKS PRODUCT #2424, WITH TRAFFIC RATED GRATE INLET (REFER TO DETAIL A, SHEET 5 FOR MODIFICATIONS TO GRATED INLET)		
(4)	INSTALL RCP BEDDING PER CITY OF CYPRESS STD. NO. 324, CASE III, AND DETAIL "B", SHEET 4		
(5)	PROTECT IN PLACE		
(6)	REMOVE EXIST. 6" CURB		
(7)	REMOVE EXIST. A.C.		
(8)	CONSTRUCT 6" CURB PER CITY OF CYPRESS STD. NO. 203		
(9)	REMOVE EXIST. RIBBON GUTTER		
(10)	GRADE BERM PER PLAN ELEVATION AND LOCATION		

INLET TYPE			
INLET LOCATION	PRECAST CONCRETE CATCH BASIN W/ GRATED INLET <sup>(1)</sup>		NOTES
	SIZE OF CATCH BASIN	DIM. OF HOLE CUT INTO STEEL PLATE	
A	24" x 24"	10" x 10"	NEW C.B. W/ STEEL PLATE
B	24" x 24"	12" x 12"	NEW C.B. W/ STEEL PLATE
C	24" x 24"	14" x 14"	NEW C.B. W/ STEEL PLATE

1. BROOKS PRODUCTS CATCH BASIN DWG. NO. 2424 WITH TRAFFIC RATED GRATE INLET OR APPROVED EQUAL.  
2. ALL DRAINAGE INLETS SHALL BE SET IN A 4" THICK P.C.C. APRON AT GRADE. APRON SHALL BE CONTINUOUS AROUND THE INLET PERIMETER AND HAVE A MINIMUM WIDTH OF 12".

**FUSCOE ENGINEERING**  
16735 Von Karman, Ste. 100  
Irvine, California 92614  
Phone (714) 474-1960  
FAX (714) 474-5315

**REVISIONS**

No.	Date	Initials	Description	Date	App'd

**REFERENCES**

Bench Mark: 1B-84-74 ELEV. 25.362  
4000 FEET WESTERLY ALONG KATELLA AVENUE FROM ITS INTERSECTION WITH LEXINGTON DRIVE; 59.5 FEET NORTHERLY OF THE CENTERLINE OF THE AVENUE; 6.8 FEET NORTHERLY OF A POWER POLE NUMBER 1360380E; 4 FEET NORTHERLY OF THE NORTH EDGE OF A CATCH BASIN; 17.5 FEET EAST SOUTHEAST OF A FIRE HYDRANT; SET AT THE EAST END OF A 6 INCH BY 5.5 FEET CONCRETE HEADWALL ABOUT 1.5 FEET BELOW THE TOP OF THE CURB.

Plans:  
Field Book:

**SCALES**

HORIZ: 1"=20'  
VERT: 1"=4'

PLANS PREPARED UNDER THE SUPERVISION OF:

DESIGNED BY: *DC* DATE: 1/16/92  
DRAWN BY: *JS* DATE: 1/16/92  
CHECKED BY: *DC* DATE: 1/16/92

APPROVED BY THE CITY OF CYPRESS

*Mark Christoffels* 1/16/92  
MARK CHRISTOFFELS  
CITY ENGINEER, P.E.  
RCE 40586 EXP 3/31/98

**CITY OF CYPRESS**  
DEPARTMENT OF PUBLIC WORKS

**CYPRESS BUSINESS AND PROFESSIONAL CENTER**  
STORM DRAIN IMPROVEMENT PLAN  
FOR  
WINNERS CIRCLE

**SHEET 5 OF 5**  
**PROJECT NO.**  
9743  
**FILE NO.**  
D-96021.5



# **ATTACHMENT D**

**Hydrologic Design Criteria**

**CITY OF CYPRESS****INTERIM DRAINAGE CRITERIA****FINAL****LOS ALAMITOS RACE COURSE/CYPRESS GOLF COURSE AREA**

**AREA BOUNDARY:** Lexington St on the west, Cerritos Ave. on the north  
Walker St. on the east and Katella Ave. on the south.

**A. BACKGROUND:**

1. The historical city policy for the subject area has been to contain storm waters on site, only allowing minimal discharges offsite.
2. The 1994 "Master Plan of Storm drains" did not propose drainage facilities for the subject area because of the proposed on-site storage policy.
3. The former east-west railroad right-of-way bisects the area into two major drainage sub areas. In general the north area is tributary to existing storm drain systems in Cerritos Ave. and Lexington St. The South area is tributary to existing storm drain systems in Katella Ave. and Walker St.
4. Current runoff to Katella Ave., Cerritos Ave. or Lexington Drive from both the north and south areas is minimal due to existing on-site detention systems.
5. The historical drainage conditions and criteria for the area have been documented in numerous reports, hydrology studies topographic maps, photos and development plans on record with the city.
6. The existing off-site drainage systems in Katella, Lexington and Cerritos have very limited capacity to handle runoff from the areas.
7. The possibility of additional off-site drainage facilities being constructed in the foreseeable future is considered very remote if not non-existent due to costs and City boundaries.
8. A report prepared by Fuscoe Engineering entitled "Master Plan of Drainage for Los Alamitos Race Course and Cypress Golf Course South Drainage Area," dated June 23, 2003, proposed 100-yr storm on-site detention basins and limited or controlled off-site discharged for the various parcels within the area.

FINAL

**B. GENERAL CRITERIA:**

1. It is the goal of the City to not worsen existing drainage conditions downstream of the subject area. Historically, drainage runoff from the area up to and including a 100-year frequency storm has been controlled by a series of retention basins and drainage systems that limits the off area discharge to the capacity of the existing street and storm drain systems.
2. Based on historic conditions and lacking a suitable downstream storm drain system, the drainage concept for the subject area is to continue to detain all 100-year storm water runoff onsite except for the capacity of the existing storm drain(s) as described later in this criteria.
3. Alternate drainage criteria for the site has been considered, such as
  - A. Raising sites to protect from 100-yr runoff and allowing runoff to drain to adjacent streets.
  - B. Construct relief storm drain from Coyote Creek in Katella Avenue to site.

These alternates were rejected as non-conforming to historical drainage conditions, city goals/policy for the area and/or excessive costs.

4. The primary objective for the subject area is to develop an area wide drainage and detention system master plan based on the "highest and best" land use. The goal of the master plan will be to detain the ultimate development 100-year runoff amount that exceeds what has historically left the area in existing storm drain and street systems. To accomplish this a cooperative effort between the City and property owners will be required. The city will actively work toward this goal.
5. Prior to completion of the area wide master plan referenced in Item 4 above, individual development sites shall meet the following interim criteria:
  - a. Control the fully developed 100-year runoff by using a combination of on-site detention and existing off-site stormdrain capacity (See D, E & F below)  
- OR -
  - b. Study and determine 100-year runoff generated by the site under existing (or historic development) conditions. Also determine the amount of runoff currently detained. Upon approval of the City Engineer this detained amount will be the detention requirement under the developed condition.

FINAL

**C. DETENTION CRITERIA:**

1. Preferred method of detention is underground pipes/vaults, landscape areas or separate detention basin. All reasonable efforts should be taken to minimize detention in required parking areas.
2. Parking areas may be used for detention subject to approval of City and special conditions such as:
  - Must be in least used locations farthest from main activity areas
  - Maximum retention/detention depth of two feet
  - Signing and marking requirements
3. All detention facilities are subject to operation and maintenance reporting and hold harmless agreement with the City.

**D. AREA TRIBUTARY TO KATELLA AVE:**

1. Utilize full capacity of existing storm drain in Katella Ave. Capacity to be the flowing full capacity at Lexington Ave. (45 cfs)
2. The existing unused street capacity of Katella Avenue is considered negligible for use by future developments; therefore, future development shall not be permitted to drain surface flow onto Katella Avenue.
3. The maximum 100-year runoff allowed to be discharged from the area south of the railroad to the existing storm drain will be 45 cfs.
4. The maximum 100-year runoff allowed to be discharged from any individual site will be determined by the ratio of site acres to entire drainage area acres (146 ac) times 45 cfs.

**E. AREA TRIBUTARY TO CERRITOS AVENUE:**

1. Utilize that portion of the existing Cerritos Ave Storm drain allocated to the existing laterals serving the subject area (\_\_\_\*\_\_\_cfs).
2. The existing unused street capacity of Cerritos Avenue is considered negligible for use by future developments; therefore, future development shall not be permitted to drain surface flow onto Cerritos Avenue.
3. The maximum 100 yr runoff allowed to be discharged from the existing North Golf Course, Race Track and developed areas to the east (approximately 88ac) will be \_\_\_\*\_\_\_cfs.



4. The maximum 100-yr runoff allowed to be discharge from any individual site will be determine by the ratio of site acres to entire drainage area acres (88ac) times \_\_\_\_ \* \_\_\_\_ cfs.

\* To be determined upon review of available data.

***F. AREA TRIBUTARY TO THE EXISTING STORM DRAIN JUST NORTH OF FORMER RAILROAD AT LEXINGTON DRIVE:***


1. Extend existing storm drain to east to serve portion of north area.
2. Utilize full capacity of storm drain at Lexington/City Boundary ( \_\_\_\_ \* \_\_\_\_ cfs).
3. The maximum 100 yr runoff allowed to be discharged from the existing stable/grandstand area (55ac) will be \_\_\_\_ \* \_\_\_\_ cfs.
4. The maximum 100 yr runoff allowed to be discharged from any individual site will be determine by the ratio of site acres to entire drainage area acres (55ac) times \_\_\_\_ \* \_\_\_\_ cfs.




\* To be determined upon review of available data.


***G. OTHER CRITERIA:***




1. Allocated flows from each site into the existing storm drains shall be controlled by a method approved by the City Engineer.
2. Allocated flow to the streets shall be surface flow.
3. Control structures are subject to maintenance and hold harmless agreement with the City.
4. Drainage facility discharges are subject to City NPDES Best Management Practices.




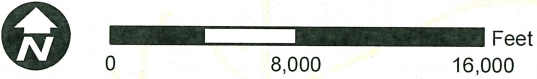
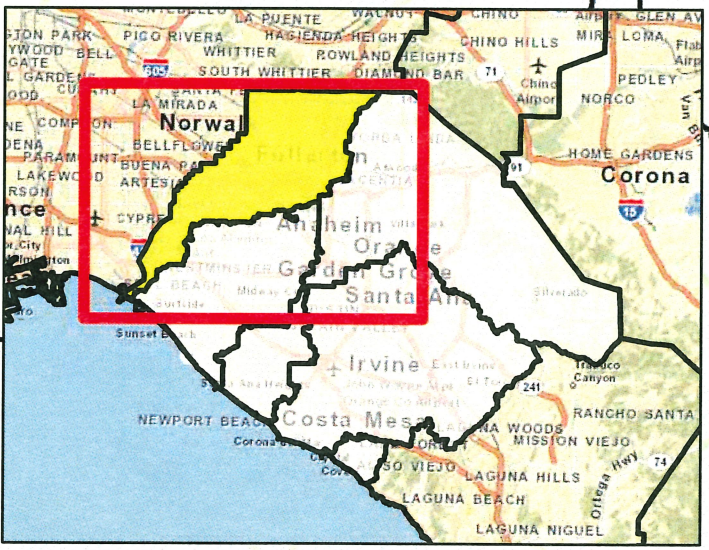
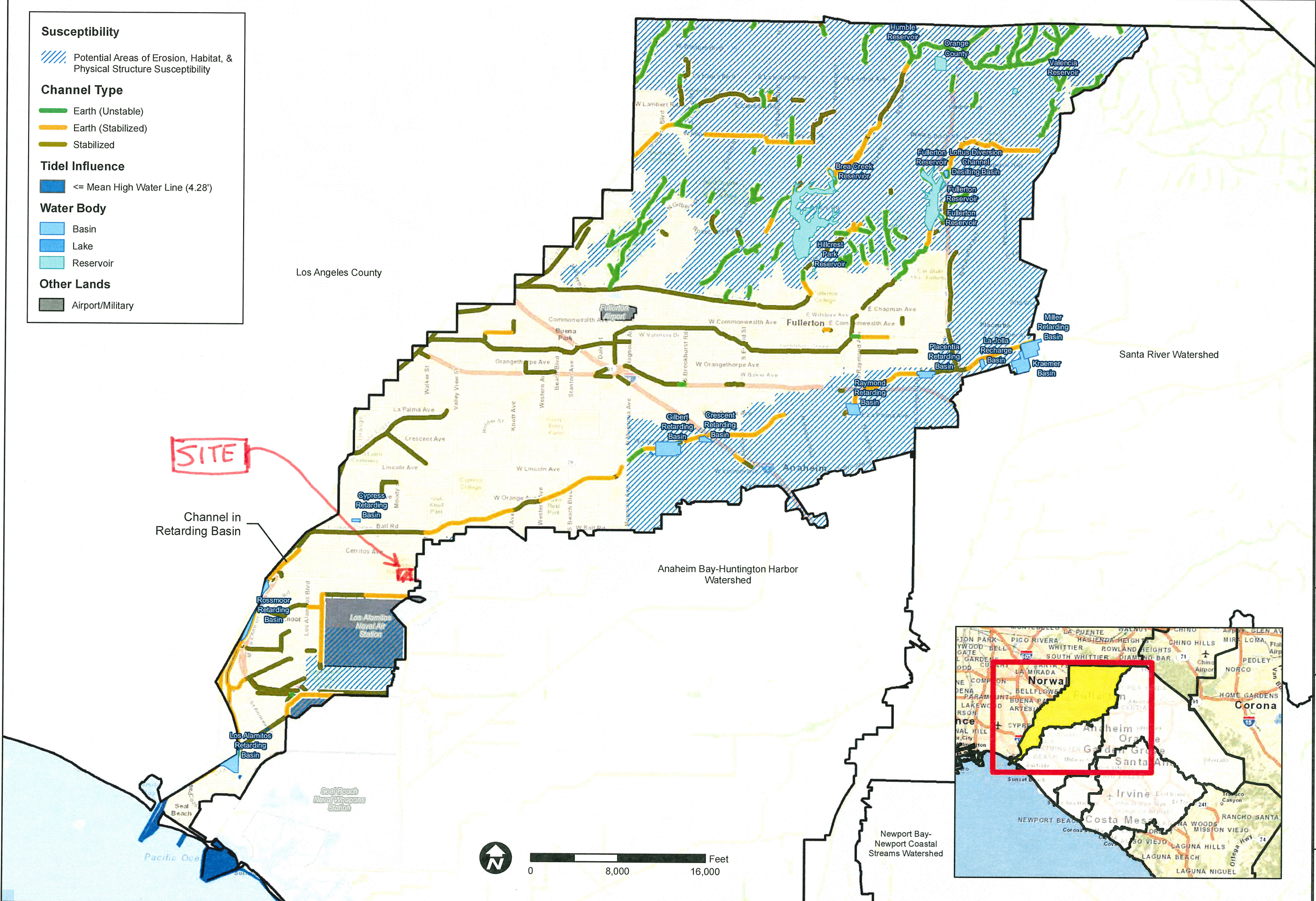
**Susceptibility**  
 Potential Areas of Erosion, Habitat, & Physical Structure Susceptibility

**Channel Type**  
 Earth (Unstable)  
 Earth (Stabilized)  
 Stabilized

**Tidel Influence**  
 <= Mean High Water Line (4.28')

**Water Body**  
 Basin  
 Lake  
 Reservoir

**Other Lands**  
 Airport/Military



TITLE

SUSCEPTIBILITY ANALYSIS  
SAN GABRIEL-COYOTE CREEK

JOB

ORANGE COUNTY  
WATERSHED  
MASTER PLANNING

CA

ORANGE CO.

SCALE 1" = 8000'

DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/20/10
JOB NO.	9526-E



**PACE**  
Advanced Water Engineering

1





## APPENDIX H

# NOISE ANALYSIS RESULTS



**This page intentionally left blank**

TABLE Existing-01  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard

NOTES: Cypress Town Center Project - Existing

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22200      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	106.6	225.0	482.6

TABLE Existing-02  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to  
Bloomfield Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25660      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	95.1	199.6	427.5

TABLE Existing-03  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26255      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.0	118.6	251.3	539.4

---

TABLE Existing-04  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27365      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
71.5	147.1	313.5	673.8

---



TABLE Existing-05  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30485      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.3	157.8	336.8	724.0

---

TABLE Existing-06  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27125      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.4	147.3	312.0	669.7

---

TABLE Existing-07  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 21190      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
61.7	124.7	264.7	568.3

---

TABLE Existing-08  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 17390      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	79.5	156.9	331.0

---

TABLE Existing-09  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25125      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	97.5	198.5	422.0

TABLE Existing-10  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 33830      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
62.7	116.2	240.7	513.8

---

TABLE Existing-11  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 35980      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.4	120.6	250.5	535.3

---

TABLE Existing-12  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12950      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	76.4	158.0	337.3

---



TABLE Existing-13  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 11990      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DAY ---	DISTRIBUTION EVENING -----	PERCENTAGES NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	73.0	150.3	320.5

---

TABLE Existing-14  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Denni Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 7660      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	90.4	191.7

---

TABLE Existing-15  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 4825      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	65.5	140.5

---

TABLE Existing-16  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Moody Street north Cerritos Avenue  
NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 10410      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	67.1	137.2	291.9

---

TABLE Existing-17  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Walker Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 15900      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	86.5	180.7	386.6

---

TABLE Existing-18  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 19850      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	99.4	209.1	448.0

---

TABLE Existing-19  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37440      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
90.4	182.3	386.5	829.7

---

TABLE Existing-20  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38235      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
91.5	184.7	391.9	841.4

---



TABLE Existing-21  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 51485      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
108.7	223.8	477.2	1025.7

---

TABLE Existing-22  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 42570      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
97.3	197.9	420.8	903.7

---

TABLE Existing-23  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 49955      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
90.2	181.8	385.4	827.4

---

TABLE Existing-24  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 44415      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
84.5	168.6	356.6	765.1

---

TABLE Existing-25  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38980      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.8	155.2	327.2	701.5

---

TABLE Existing-26  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37135      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.8	150.6	317.0	679.3

TABLE Existing-27  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to  
Cottonwood Way

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37390      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.1	151.2	318.4	682.4

---

TABLE Existing-28  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37940      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.7	152.6	321.5	689.0

---



TABLE Existing-29  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Siboney Street to Winners Circle

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37460      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.2	151.4	318.8	683.2

---

TABLE Existing-30  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37610      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.3	151.8	319.6	685.0

---

TABLE Existing-31  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 43675      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
98.7	201.2	428.0	919.3

---

TABLE Existing-32  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30070      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.2	158.5	334.5	717.1

---

TABLE Existing-33  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 3130      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	68.6

---

TABLE Existing-34  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Winners Circle north of Katella Avenue

NOTES: Cypress Town Center Project - Existing

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 1960      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

---

Project-01

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22200      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	106.6	225.0	482.6

---

Project-02

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to  
Bloomfield Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved  
Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25660      SPEED (MPH): 35      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	95.1	199.6	427.5

---



Project-03

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26255      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.0	118.6	251.3	539.4

---

Project-04

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27365      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
71.5	147.1	313.5	673.8

---

Project-05

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30685      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.6	158.5	338.2	727.1

Project-06

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27275      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.6	147.8	313.2	672.2

---

Project-07

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 21290      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
61.8	125.1	265.5	570.1

---

Project-08

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 17590      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	80.0	158.1	333.5

---

Project-09

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25325      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	98.0	199.5	424.2

---

Project-10

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 33980      SPEED (MPH): 35      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
62.8	116.5	241.4	515.4

---



Project-11

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 36180      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.6	121.0	251.5	537.3

---

Project-12

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 13150      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	77.1	159.6	340.8

---

Project-13

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12190      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	73.7	151.9	324.1

---

Project-14

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Denni Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 7860      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	91.9	195.0

---

Project-15

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 5125      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	68.1	146.3

---

Project-16

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Moody Street north Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 10610      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	67.9	138.9	295.6

---

Project-17

TABLE Existing Plus Previously Approved  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 16100      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	87.2	182.2	389.8

Project-18

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 20550      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	101.5	213.9	458.4

---



Project-19

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37840      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
91.0	183.5	389.2	835.6

---

Project-20

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38635      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.0	186.0	394.6	847.2

---

Project-21

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 51885      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
109.2	225.0	479.7	1031.0

---

Project-22

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 42970      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
97.8	199.1	423.4	909.4

---

Project-23

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 50555      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
90.8	183.1	388.5	834.0

---

Project-24

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 45015      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
85.1	170.1	359.8	772.0

---

Project-25

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39930      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.8	157.6	332.5	712.8

---

Project-26

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive  
NOTES: Cypress Town Center Project - Existing Plus Previously Approved  
Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38435      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.2	153.9	324.2	695.0

---



Project-27

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to Cottonwood Way

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39190      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.0	155.8	328.4	704.0

---

Project-28

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39840      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.7	157.4	332.0	711.8

---

Project-29

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Siboney Streeet to Winners Circle

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37460      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.2	151.4	318.8	683.2

---

Project-30

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39610      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.5	156.8	330.7	709.0

---

Project-31

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 44875      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
100.3	204.8	435.7	936.0

---

Project-32

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30470      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.8	159.8	337.4	723.5

---

Project-33

TABLE Existing Plus Previously Approved

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 5130      SPEED (MPH): 25      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	90.8

---

Project-34

TABLE Existing Plus Previously Approved  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Winners Circle north of Katella Avenue  
NOTES: Cypress Town Center Project - Existing Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 3960      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	72.5

---



TABLE Existing Plus Modified Project-01  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22200      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	106.6	225.0	482.6

---

TABLE Existing Plus Modified Project-02  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to  
Bloomfield Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25660      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	95.1	199.6	427.5

TABLE Existing Plus Modified Project-03  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26255      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.0	118.6	251.3	539.4

---

TABLE Existing Plus Modified Project-04  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27365      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	-----	-----
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
71.5	147.1	313.5	673.8

---

TABLE Existing Plus Modified Project-05  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30565      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
76.4	158.1	337.4	725.2

---

TABLE Existing Plus Modified Project-06  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27285      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.6	147.8	313.3	672.3

TABLE Existing Plus Modified Project-07  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 21350      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
61.9	125.3	266.0	571.1

---

TABLE Existing Plus Modified Project-08  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 17580      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	80.0	158.0	333.3

---



TABLE Existing Plus Modified Project-09  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 25300      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	97.9	199.4	423.9

---

TABLE Existing Plus Modified Project-10  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 34070      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
62.9	116.7	241.8	516.3

TABLE Existing Plus Modified Project-11  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 36220      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.6	121.1	251.6	537.7

TABLE Existing Plus Modified Project-12  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 13030      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	76.7	158.7	338.7

---

TABLE Existing Plus Modified Project-13  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12070      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	73.2	151.0	322.0

---

TABLE Existing Plus Modified Project-14  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Denni Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 7740      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	91.0	193.0

---

TABLE Existing Plus Modified Project-15  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 4950      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	66.6	142.9

---

TABLE Existing Plus Modified Project-16  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Moody Street north Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 10490      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	67.4	137.9	293.4



TABLE Existing Plus Modified Project-17  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 16060      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	87.1	181.9	389.1

---

TABLE Existing Plus Modified Project-18  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 20295      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	100.7	212.1	454.6

---

TABLE Existing Plus Modified Project-19  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37770      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
90.9	183.3	388.8	834.6

---

TABLE Existing Plus Modified Project-20  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38565      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
91.9	185.7	394.2	846.2

TABLE Existing Plus Modified Project-21  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 51965      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
109.3	225.2	480.2	1032.0

TABLE Existing Plus Modified Project-22  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 43050      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
97.9	199.4	423.9	910.5

---

TABLE Existing Plus Modified Project-23  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 50750      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
91.0	183.6	389.5	836.1

---

TABLE Existing Plus Modified Project-24  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 45215      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
85.3	170.5	360.9	774.3



TABLE Existing Plus Modified Project-25  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40185      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.1	158.2	333.9	715.9

TABLE Existing Plus Modified Project-26  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38465      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.3	153.9	324.4	695.3

TABLE Existing Plus Modified Project-27  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to Cottonwood Way

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38930      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.7	155.1	327.0	700.9

TABLE Existing Plus Modified Project-28  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39525      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.4	156.6	330.2	708.0

---

TABLE Existing Plus Modified Project-29  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Siboney Streeet to Winners Circle

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39105      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.9	155.5	327.9	703.0

---

TABLE Existing Plus Modified Project-30  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39230      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.1	155.9	328.6	704.5

TABLE Existing Plus Modified Project-31  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 44810      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
100.2	204.6	435.3	935.1

---

TABLE Existing Plus Modified Project-32  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30400      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.7	159.6	336.9	722.4



TABLE Existing Plus Modified Project-33  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 3810      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	76.4

TABLE Existing Plus Modified Project-34  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Winners Circle north of Katella Avenue

NOTES: Cypress Town Center Project - Existing Plus Modified Project

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 2950      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	59.7

TABLE Opening Year 2021-01  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 23370      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	110.1	232.8	499.3

---

TABLE Opening Year 2021-02  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to  
Bloomfield Street  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26480      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	97.0	203.8	436.6

---

TABLE Opening Year 2021-03  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27085      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.1	121.0	256.6	550.7

---

TABLE Opening Year 2021-04  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street

NOTES: Cypress Town Center Project - Opening Year 2021

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28405      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.1	150.7	321.4	690.7

TABLE Opening Year 2021-05  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 31680      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.1	161.8	345.5	742.7

---

TABLE Opening Year 2021-06  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28065      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.8	150.5	319.1	685.0

---



TABLE Opening Year 2021-07  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22050      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.1	127.9	271.7	583.5

---

TABLE Opening Year 2021-08  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 17940      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	80.8	160.0	337.8

---

TABLE Opening Year 2021-09  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26190      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	99.9	203.9	433.8

---

TABLE Opening Year 2021-10  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 34605      SPEED (MPH): 35      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.3	117.8	244.3	521.6

---

TABLE Opening Year 2021-11  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 36790      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.1	122.2	254.2	543.3

---

TABLE Opening Year 2021-12  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 13230      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DAY ---	DISTRIBUTION EVENING -----	PERCENTAGES NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	77.4	160.3	342.2

---

TABLE Opening Year 2021-13  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12260      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DAY ---	DISTRIBUTION EVENING -----	PERCENTAGES NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	73.9	152.5	325.3

---

TABLE Opening Year 2021-14  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Denni Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 8390      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	95.8	203.6

---



TABLE Opening Year 2021-15  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 5850      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	74.4	159.7

---

TABLE Opening Year 2021-16  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Moody Street north Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 10860      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	68.8	141.0	300.2

---

TABLE Opening Year 2021-17  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Walker Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 16440      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	88.3	184.7	395.2

---

TABLE Opening Year 2021-18  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 20645      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	101.8	214.5	459.8

---

TABLE Opening Year 2021-19  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38760      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.2	186.3	395.5	849.1

---

TABLE Opening Year 2021-20  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39625      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
93.4	189.0	401.3	861.6

---

TABLE Opening Year 2021-21  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 53000      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
110.6	228.1	486.5	1045.7

---

TABLE Opening Year 2021-22  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 43810      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
98.9	201.6	428.8	921.2

---



TABLE Opening Year 2021-23  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 51410      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
91.7	185.1	392.8	843.3

---

TABLE Opening Year 2021-24  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Opening Year 2021

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 45780      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
85.9	171.9	363.8	780.7

TABLE Opening Year 2021-25  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40260      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.2	158.4	334.3	716.7

---

TABLE Opening Year 2021-26  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 38610      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.4	154.3	325.2	697.1

---

TABLE Opening Year 2021-27  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to  
Cottonwood Way

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39535      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.4	156.6	330.3	708.1

---

TABLE Opening Year 2021-28  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40305      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.2	158.5	334.5	717.3

---

TABLE Opening Year 2021-29  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Siboney Street to Winners Circle

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40185      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.1	158.2	333.9	715.9

---

TABLE Opening Year 2021-30  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40250      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.2	158.4	334.2	716.6

---



TABLE Opening Year 2021-31  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 45915      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
101.6	207.8	442.4	950.4

---

TABLE Opening Year 2021-32  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue east of Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 30950      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.4	161.4	340.9	731.0

---

TABLE Opening Year 2021-33  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 3540      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	73.3

---

TABLE Opening Year 2021-34  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Winners Circle north of Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 2150      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-01

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 23370      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	110.1	232.8	499.3

TABLE Opening Year 2021 Plus Previously  
Approved Project-02  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to  
Bloomfield Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26480      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	97.0	203.8	436.6

TABLE Opening Year 2021 Plus Previously  
Approved Project-03  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27085      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	-----	-----
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.1	121.0	256.6	550.7

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-04  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28405      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.1	150.7	321.4	690.7

---



TABLE Opening Year 2021 Plus Previously  
Approved Project-05

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 31880      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.4	162.5	346.9	745.9

TABLE Opening Year 2021 Plus Previously  
Approved Project-06  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28265      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.1	151.2	320.6	688.3

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-07  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22250      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.4	128.7	273.4	587.1

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-08  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 18140      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	81.3	161.2	340.3

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-09  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26390      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	100.3	204.9	435.9

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-10  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 34805      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.5	118.2	245.2	523.6

TABLE Opening Year 2021 Plus Previously  
Approved Project-11  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 36990      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.3	122.7	255.1	545.2

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-12  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 13430      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	78.1	161.8	345.6

---



TABLE Opening Year 2021 Plus Previously  
Approved Project-13  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12460      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	74.6	154.1	328.8

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-14  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Denni Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 8590      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	97.3	206.7

---

TABLE Opening Year 2021 Plus Previously  
 Approved Project-15  
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
 ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue  
 NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
 Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 6150      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	76.9	165.2

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-16

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Moody Street north Cerritos Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 11060      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	69.6	142.7	303.8

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-17

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Walker Street north of Cerritos Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 16640      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	89.0	186.2	398.4

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-18  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 21350      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	104.0	219.3	470.2

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-19  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39160      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.7	187.6	398.2	854.9

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-20  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40025      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
93.9	190.2	404.0	867.4

---



TABLE Opening Year 2021 Plus Previously  
Approved Project-21

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 53400      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
111.1	229.2	488.9	1050.9

TABLE Opening Year 2021 Plus Previously  
Approved Project-22  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 44210      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
99.4	202.8	431.4	926.8

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-23

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 52010      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.3	186.5	395.8	849.9

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-24  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 46380      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
86.6	173.3	367.0	787.5

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-25  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield  
Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41265      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.2	160.9	339.7	728.6

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-26  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39915      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.8	157.6	332.4	712.7

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-27

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to  
Cottonwood Way

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40885      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.8	160.0	337.7	724.1

TABLE Opening Year 2021 Plus Previously  
Approved Project-28  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41755      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	-----	-----
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.7	162.1	342.4	734.3

---



TABLE Opening Year 2021 Plus Previously  
Approved Project-29  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Siboney Streeet to Winners Circle  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 40185      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.1	158.2	333.9	715.9

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-30  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 42265      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	-----	-----
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
82.3	163.4	345.2	740.3

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-31  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 47125      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
103.2	211.4	450.1	967.0

---

TABLE Opening Year 2021 Plus Previously  
Approved Project-32  
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue east of Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 31350      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
82.0	162.7	343.8	737.3

TABLE Opening Year 2021 Plus Previously  
Approved Project-33

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 5540      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	95.1

TABLE Opening Year 2021 Plus Previously  
Approved Project-34

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Winners Circle north of Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Previously  
Approved Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 4150      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	74.8

Project-01

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue west of Los Alamitos Boulevard  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 23370      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	110.1	232.8	499.3

---

Project-02

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Los Alamitos Boulevard to Bloomfield Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26480      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	97.0	203.8	436.6

---



Project-03

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue from Bloomfield Street and Denni Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 27085      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.1	121.0	256.6	550.7

---

Project-04

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue from Denni Street and Moody Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28405      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.1	150.7	321.4	690.7

---

Project-05

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Moody Street and Walker Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 31760      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.2	162.1	346.1	744.0

---

Project-06

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Cerritos Avenue from Walker Street and Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 28220      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.0	151.1	320.3	687.6

---

Project-07

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Cerritos Avenue east of Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 22210      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.3	128.5	273.0	586.4

---

Project-08

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 18110      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	81.3	161.0	339.9

---

Project-09

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 26360      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	100.3	204.7	435.6

---

Project-10

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 34850      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.5	118.3	245.4	524.1

---



Project-11

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Los Alamitos Boulevard south of Farquhar Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 37030      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.3	122.7	255.3	545.6

---

Project-12

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Bloomfield Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 13310      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	77.7	160.9	343.5

---

Project-13

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Bloomfield Street from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 12345      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DAY ---	DISTRIBUTION EVENING -----	PERCENTAGES NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	74.2	153.2	326.8

---

Project-14

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Denni Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 8470      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	96.4	204.8

---

Project-15

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Lexington Drive from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 5970      SPEED (MPH): 35      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	75.4	161.9

---

Project-16

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Moody Street north Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 10940      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	69.1	141.6	301.7

---

Project-17

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Walker Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 16600      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	88.9	185.9	397.8

---

Project-18

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Walker Street from Cerritos Avenue to Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 21085      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	103.2	217.5	466.3

---



Project-19

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street north of Cerritos Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39070      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.6	187.3	397.6	853.6

---

Project-20

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Valley View Street from Cerritos Avenue to Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39940      SPEED (MPH): 45      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
93.8	190.0	403.4	866.2

---

Project-21

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street from Katella Avenue to Orangewood Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 53485      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
111.2	229.5	489.5	1052.0

---

Project-22

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Valley View Street south of Orangewood Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 44300      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
99.5	203.1	432.0	928.0

---

Project-23

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from I-605 Ramps to Wallingsford Road

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 52205      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
92.5	187.0	396.8	852.0

---

Project-24

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Wallingsford Road to Los Alamitos Road

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 46575      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
86.8	173.8	368.0	789.7

---

Project-25

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Los Alamitos Road to Bloomfield Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41470      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.4	161.4	340.9	731.0

---

Project-26

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Bloomfield Street to Denni  
Street/Lexington Drive  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified  
Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 39940      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.8	157.6	332.5	713.0

---



Project-27

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Denni Street/Lexington Drive to Cottonwood Way

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41290      SPEED (MPH): 40      GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.2	161.0	339.9	728.9

---

Project-28

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Cottonwood Way to Siboney Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41875      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.9	162.4	343.1	735.7

---

Project-29

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue from Siboney Streeet to Winners Circle  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41820      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.8	162.3	342.8	735.1

---

Project-30

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Winners Circle to Walker Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 41865      SPEED (MPH): 40      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.9	162.4	343.0	735.6

---

Project-31

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Katella Avenue from Walker Street to Valley View Street

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 47040      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
103.1	211.1	449.5	965.8

---

Project-32

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Katella Avenue east of Valley View Street  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 31270      SPEED (MPH): 45      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
81.9	162.5	343.2	736.0

---

Project-33

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019

ROADWAY SEGMENT: Siboney Street north of Katella Avenue

NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 4210      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	80.9

---

Project-34

TABLE Opening Year 2021 Plus Modified

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 07/17/2019  
ROADWAY SEGMENT: Winners Circle north of Katella Avenue  
NOTES: Cypress Town Center Project - Opening Year 2021 Plus Modified Project

---

\* \* ASSUMPTIONS \* \*

AVERAGE DAILY TRAFFIC: 3130      SPEED (MPH): 25      GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6      SITE CHARACTERISTICS: SOFT

---

\* \* CALCULATED NOISE LEVELS \* \*

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	62.1

---





## APPENDIX I

### PUBLIC SERVICES AND UTILITIES PROVIDERS CORRESPONDENCE



**This page intentionally left blank**



## APPENDIX I

### ANAHEIM UNION HIGH SCHOOL DISTRICT CORRESPONDENCE



**This page intentionally left blank**



CARLSBAD  
FRESNO  
IRVINE  
LOS ANGELES  
PALM SPRINGS  
POINT RICHMOND  
RIVERSIDE  
ROSEVILLE  
SAN LUIS OBISPO

December 3, 2019

Dr. Jennifer Root  
Assistant Superintendent, Business Services  
Anaheim Union High School District  
501 North Crescent Way  
Anaheim, CA 92801

Subject: Cypress City Center Environmental Impact Report, City of Cypress

Dear Dr. Root:

This letter has been sent to you as part of an environmental review process being conducted pursuant to the California Environmental Quality Act (CEQA). The City of Cypress (City) has determined that preparation of an Environmental Impact Report (EIR) is necessary to adequately analyze the environmental effects of the Cypress City Center project (proposed project). The City is the Lead Agency, and LSA Associates, Inc. (LSA) has been retained by the City to prepare the environmental analysis required for the proposed project.

The proposed project would be located on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California. The project site is currently an undeveloped paved parking lot. Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course and periodic temporary truck parking two to three times per year. The project site is bounded by vacant land and surface parking lots associated with the Los Alamitos Race Course to the north, Katella Avenue to the south, Winners Circle to the east, and Siboney Street to the west. The location of the project site is shown in Figure 1.

The proposed project involves the construction and operation of a mixed-use development on the project site. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the property within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1.

The project site is within the boundaries of the Cypress Business and Professional Center Specific Plan (Specific Plan), and specifically occupies a portion of Planning Area 5, which is designated for Professional Office uses. Required discretionary actions associated with the project include the following: certification of the EIR; approval of a Development Agreement between SP Acquisition, LLC and the City of Cypress; approval of a Specific Plan Amendment to create a new mixed-use land

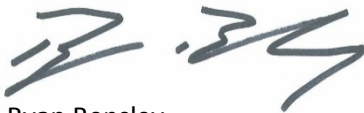
use district for the project site to allow residential and hotel uses; approval of a Tentative Parcel Map required for the subdivision of the project site; approval of Conditional Use Permits for the hotel, theater, commercial, and restaurant/alcohol uses; and approval of a Design Review Permit.

LSA is seeking information on how the proposed project would affect the Anaheim Union High School District's ability to provide services and whether the project would require new or expanded facilities. To assist with this effort, a questionnaire has been enclosed with specific questions relating to services near the project area. It would be helpful to the analysis for us to receive a response by Friday, December 13, 2019. Please email your response to [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net).

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

Sincerely,

**LSA Associates, Inc.**

A handwritten signature in black ink, appearing to read 'R. Bensley', is positioned above the printed name.

Ryan Bensley  
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map  
School Services Questionnaire

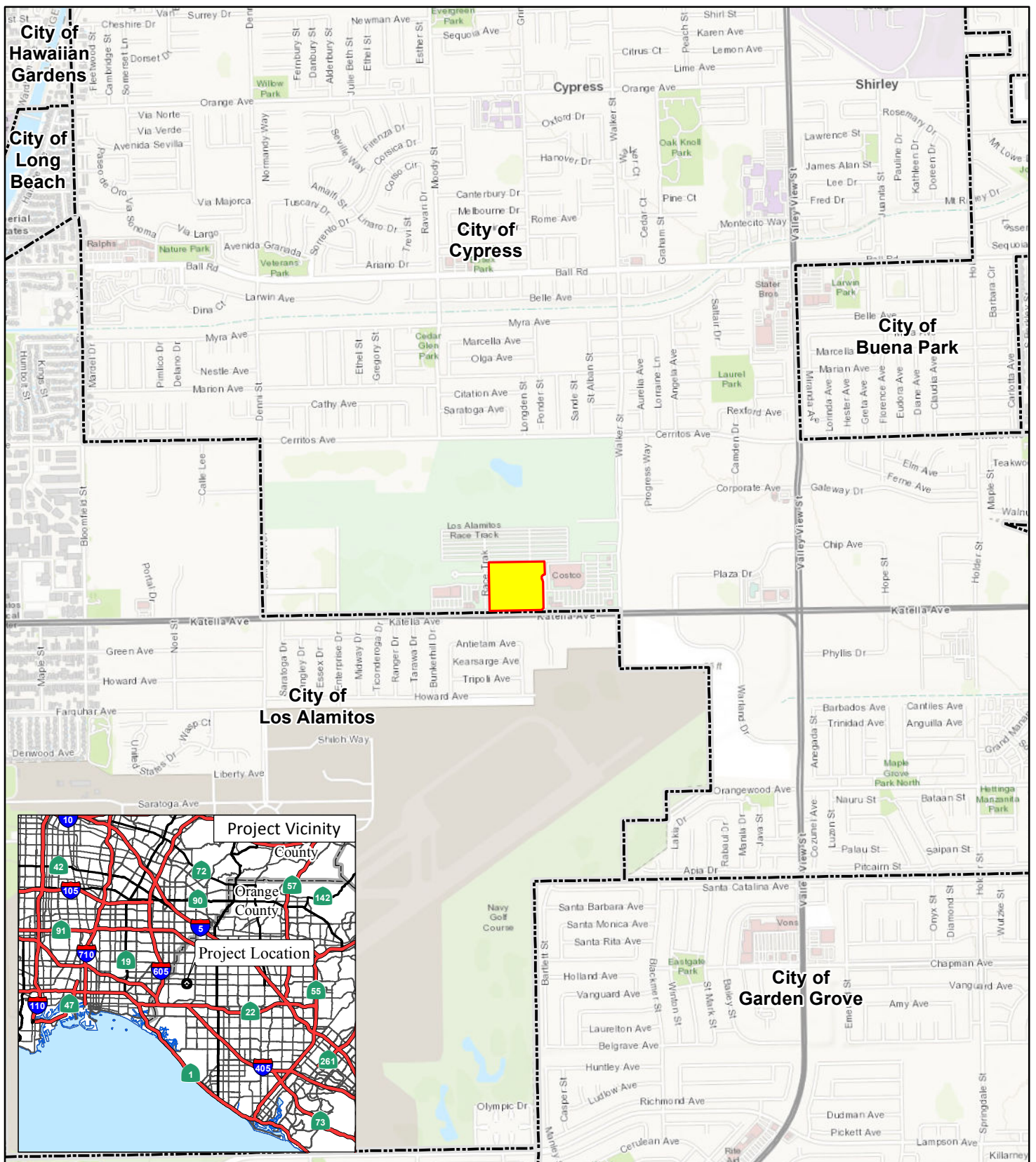


FIGURE 1

LSA



0 1000 2000  
FEET

SOURCE: ArcGIS Online Topographic Map

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

*Cypress City Center*  
Regional and Project Location

## SCHOOL QUESTIONNAIRE

For your convenience, LSA has provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. Please email your responses [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net). We would appreciate a response by **December 13, 2019**.

**1. Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Cypress School District (CSD) serves the City's kindergarten through sixth-grade students. Anaheim Union High School District (AUHSD) serves the City's junior high and high school students (grades 7 through 12).

The AUHSD encompasses 46 square miles and has schools in Anaheim, Cypress, Buena Park, La Palma, and Stanton. AUHSD is composed of 10 junior high and 12 high schools. AUHSD's enrollment totaled 30,292 students in the 2018–2019 school year.<sup>1</sup>

The project site is within the attendance boundaries of the following schools: Frank Vessels Elementary (0.7 mile northeast of the site), Lexington Junior High (1.5 mile northwest of the site), and Cypress High School (1.2 mile northeast of the site).

The California Office of Public School Construction has published general student yield factors for elementary, secondary (middle/high school), and unified school districts in California (May 2009). These student generation rates were used to estimate the number of elementary and secondary school students that could be generated as a result of project implementation. Based on these generation factors, it is estimated that the proposed project's 251 residential units could generate approximately 126 elementary school students and 50 middle/high school students (refer to Table A, Projected School Enrollment).

**Table A: Projected School Enrollment**

Grade Levels	Student Generation Factor	Projected Enrollment
Elementary School	0.5 student/unit	126 students
Middle/High School	0.2 student/unit	50 students
<b>Total</b>	<b>--</b>	<b>176 students</b>

Source: State of California, Office of Public School Construction. January 2019. School Facility Program Handbook. Website: [https://www.dgs.ca.gov/-/media/Divisions/OPSC/Services/Guides-and-Resources/SFP\\_Hdbk\\_ADA.ashx?la=en&hash=14D0F03EABD3AF437F3F4E2FDE1A602AFDFEE6C2](https://www.dgs.ca.gov/-/media/Divisions/OPSC/Services/Guides-and-Resources/SFP_Hdbk_ADA.ashx?la=en&hash=14D0F03EABD3AF437F3F4E2FDE1A602AFDFEE6C2) (accessed December 1, 2019).

Note: The projected enrollment is based on 251 residential units.

According to the CSD's Facilities Master Plan adopted in February 2019, the current Development Impact Fees for projects within the AUHSD's jurisdictional boundaries were \$3.80 per square foot of enclosed residential floor space and \$0.61 per square foot of enclosed commercial/industrial floor space; however, these fees are reviewed and adjusted from time to time.<sup>2</sup>

<sup>1</sup> California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: <https://dq.cde.ca.gov/dataquest/> (accessed December 1, 2019).

<sup>2</sup> Cypress School District. Facilities Master Plan 2018/19. Revised February 2019. Website: <https://4.files.edl.io/308b/02/16/19/180111-3ad0439e-1cfc-474b-ac14-dc7bbb000524.pdf> (accessed December 1, 2019).



**2. Are there any current plans for expansion of school facilities? If yes, please briefly describe.**

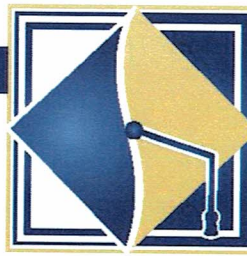
**3. Please provide any additional information that may be helpful in preparing an environmental analysis of the proposed project.**

Prepared by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_



December 20, 2019

Mr. Ryan Bensley, Project Manager, AICP  
LSA Associates, Inc.  
20 Executive Park, Suite 200  
Irvine, CA 92614

**Re: Cypress City Center (EIR, City of Cypress)**

Dear Mr. Bensley,

This letter is in response to your notification regarding the impact on student enrollment within our school district as a result of the proposed project. The information provided indicates that this project falls within the boundaries of the Anaheim Union High School District for students in grades 7-12. Students living in this area would attend the following schools:

Grades 7-8  
Lexington Junior High School  
4351 Orange Avenue  
Cypress, CA 90630  
(714) 220-4201

Grades 9-12  
Cypress High School  
9801 Valley View Street  
Cypress, CA 90630  
(714) 220-4144

Currently, transportation services are only available to our special education students.

Presently, both schools are operating beyond their existing capacities and are severely over-crowded. The project will have a severe and significant impact on the Anaheim Union High School District. Payment of appropriate developer fees as required by law will not adequately mitigate the impacts of the project and will be insufficient to adequately address the overcrowded school facilities available to the new residents of the project. Also, please refer to the attached comments.

If you have any questions or concerns regarding this matter, please contact my office at your earliest convenience.

Respectfully,

Patricia Neely, AIA  
Director, Planning, Design and Construction

## SCHOOL QUESTIONNAIRE

For your convenience, LSA has provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. Please email your responses [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net). We would appreciate a response by **December 13, 2019**.

**1. Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Cypress School District (CSD) serves the City's kindergarten through sixth-grade students. Anaheim Union High School District (AUHSD) serves the City's junior high and high school students (grades 7 through 12).

The AUHSD encompasses 46 square miles and has schools in Anaheim, Cypress, Buena Park, La Palma, and Stanton. AUHSD is composed of 10 junior high and 12 high schools. AUHSD's enrollment totaled 30,292 students in the 2018–2019 school year.<sup>1</sup>

The project site is within the attendance boundaries of the following schools: Frank Vessels Elementary (0.7 mile northeast of the site), Lexington Junior High (1.5 mile northwest of the site), and Cypress High School (1.2 mile northeast of the site).

The California Office of Public School Construction has published general student yield factors for elementary, secondary (middle/high school), and unified school districts in California (May 2009). These student generation rates were used to estimate the number of elementary and secondary school students that could be generated as a result of project implementation. Based on these generation factors, it is estimated that the proposed project's 251 residential units could generate approximately 126 elementary school students and 50 middle/high school students (refer to Table A, Projected School Enrollment).

**Table A: Projected School Enrollment**

Grade Levels	Student Generation Factor	Projected Enrollment
Elementary School	0.5 student/unit	126 students
Middle/High School	0.2 student/unit	50 students
<b>Total</b>	<b>--</b>	<b>176 students</b>

Source: State of California, Office of Public School Construction. January 2019. School Facility Program Handbook. Website: [https://www.dgs.ca.gov/-/media/Divisions/OPSC/Services/Guides-and-Resources/SFP\\_Hdbk\\_ADA.ashx?la=en&hash=14D0F03EABD3AF437F3F4E2FDE1A602AFDFEE6C2](https://www.dgs.ca.gov/-/media/Divisions/OPSC/Services/Guides-and-Resources/SFP_Hdbk_ADA.ashx?la=en&hash=14D0F03EABD3AF437F3F4E2FDE1A602AFDFEE6C2) (accessed December 1, 2019).

Note: The projected enrollment is based on 251 residential units.

According to the CSD's Facilities Master Plan adopted in February 2019, the current Development Impact Fees for projects within the AUHSD's jurisdictional boundaries were \$3.80 per square foot of enclosed residential floor space and \$0.61 per square foot of enclosed commercial/industrial floor space; however, these fees are reviewed and adjusted from time to time.<sup>2</sup>

<sup>1</sup> California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: <https://dq.cde.ca.gov/dataquest/> (accessed December 1, 2019).

<sup>2</sup> Cypress School District. Facilities Master Plan 2018/19. Revised February 2019. Website: <https://4.files.edl.io/308b02/16/19/180111-3ad0439e-1cfc-474b-ac14-dc7bbb000524.pdf> (accessed December 1, 2019).

2. Are there any current plans for expansion of school facilities? If yes, please briefly describe.

YES. PLEASE REFER TO FACILITIES  
MASTER PLAN.

3. Please provide any additional information that may be helpful in preparing an environmental analysis of the proposed project.

Prepared by:

Title:

Date:

Phone:

Patricia Neely  
DIRECTOR, Facilities Planning, Design  
& Construction  
12/20/19  
714-999-3505



## APPENDIX I

### ORANGE COUNTY FIRE AUTHORITY CORRESPONDENCE



**This page intentionally left blank**





CARLSBAD  
FRESNO  
IRVINE  
LOS ANGELES  
PALM SPRINGS  
POINT RICHMOND  
RIVERSIDE  
ROSEVILLE  
SAN LUIS OBISPO

December 3, 2019

Orange County Fire Authority  
Attn: Fire Prevention Department  
1 Fire Authority Road  
Irvine, CA 92602

Subject: Cypress City Center Environmental Impact Report, City of Cypress

To Whom It May Concern:

This letter has been sent to you as part of an environmental review process being conducted pursuant to the California Environmental Quality Act (CEQA). The City of Cypress (City) has determined that preparation of an Environmental Impact Report (EIR) is necessary to adequately analyze the environmental effects of the Cypress City Center project (proposed project). The City is the Lead Agency, and LSA Associates, Inc. (LSA) has been retained by the City to prepare the environmental analysis required for the proposed project.

The proposed project would be located on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California. The project site is currently an undeveloped paved parking lot. Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course and periodic temporary truck parking two to three times per year. The project site is bounded by vacant land and surface parking lots associated with the Los Alamitos Race Course to the north, Katella Avenue to the south, Winners Circle to the east, and Siboney Street to the west. The location of the project site is shown in Figure 1.

The proposed project involves the construction and operation of a mixed-use development on the project site. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Refer to Figure 2 (attached) for the Conceptual Site Plan. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the property within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1.

The project site is within the boundaries of the Cypress Business and Professional Center Specific Plan (Specific Plan), and specifically occupies a portion of Planning Area 5, which is designated for Professional Office uses. Required discretionary actions associated with the project include the following: certification of the EIR; approval of a Development Agreement between SP Acquisition, LLC and the City of Cypress; approval of a Specific Plan Amendment to create a new mixed-use land

use district for the project site to allow residential and hotel uses; approval of a Tentative Parcel Map required for the subdivision of the project site; approval of Conditional Use Permits for the hotel, theater, commercial, and restaurant/alcohol uses; and approval of a Design Review Permit.

LSA is seeking information on how the proposed project would affect the Orange County Fire Authority's ability to provide services and whether the project would require new or expanded facilities. To assist with this effort, a questionnaire has been enclosed with specific questions relating to services near the project area. It would be helpful to the analysis for us to receive a response by Friday, December 13, 2019. Please email your response to [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net).

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

Sincerely,

**LSA Associates, Inc.**

A handwritten signature in dark ink, appearing to read 'R. Bensley', written over a horizontal line.

Ryan Bensley  
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map  
Figure 2: Conceptual Site Plan  
Fire Protection Questionnaire



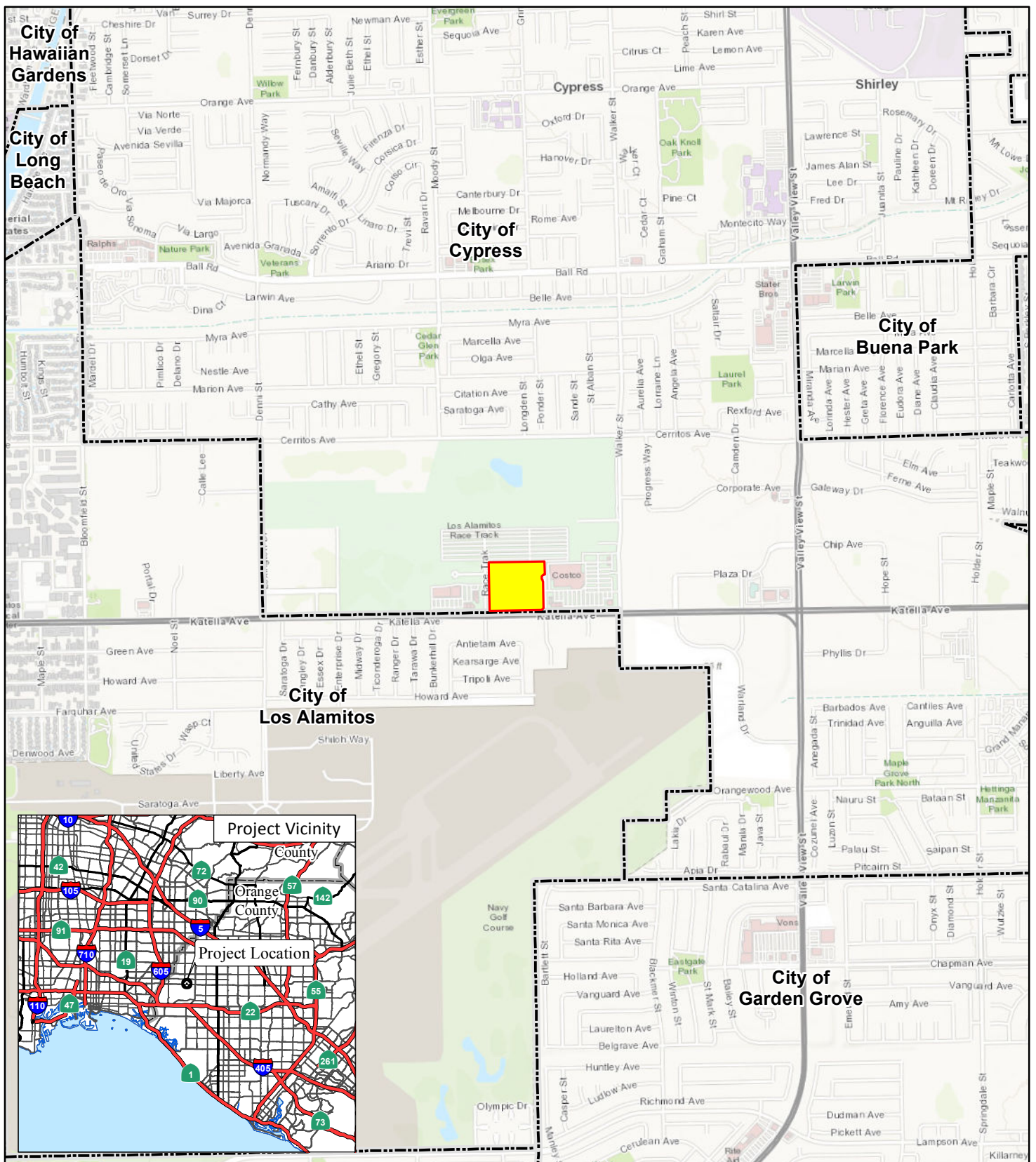


FIGURE 1

LSA



0 1000 2000  
FEET

SOURCE: ArcGIS Online Topographic Map

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

*Cypress City Center*  
Regional and Project Location

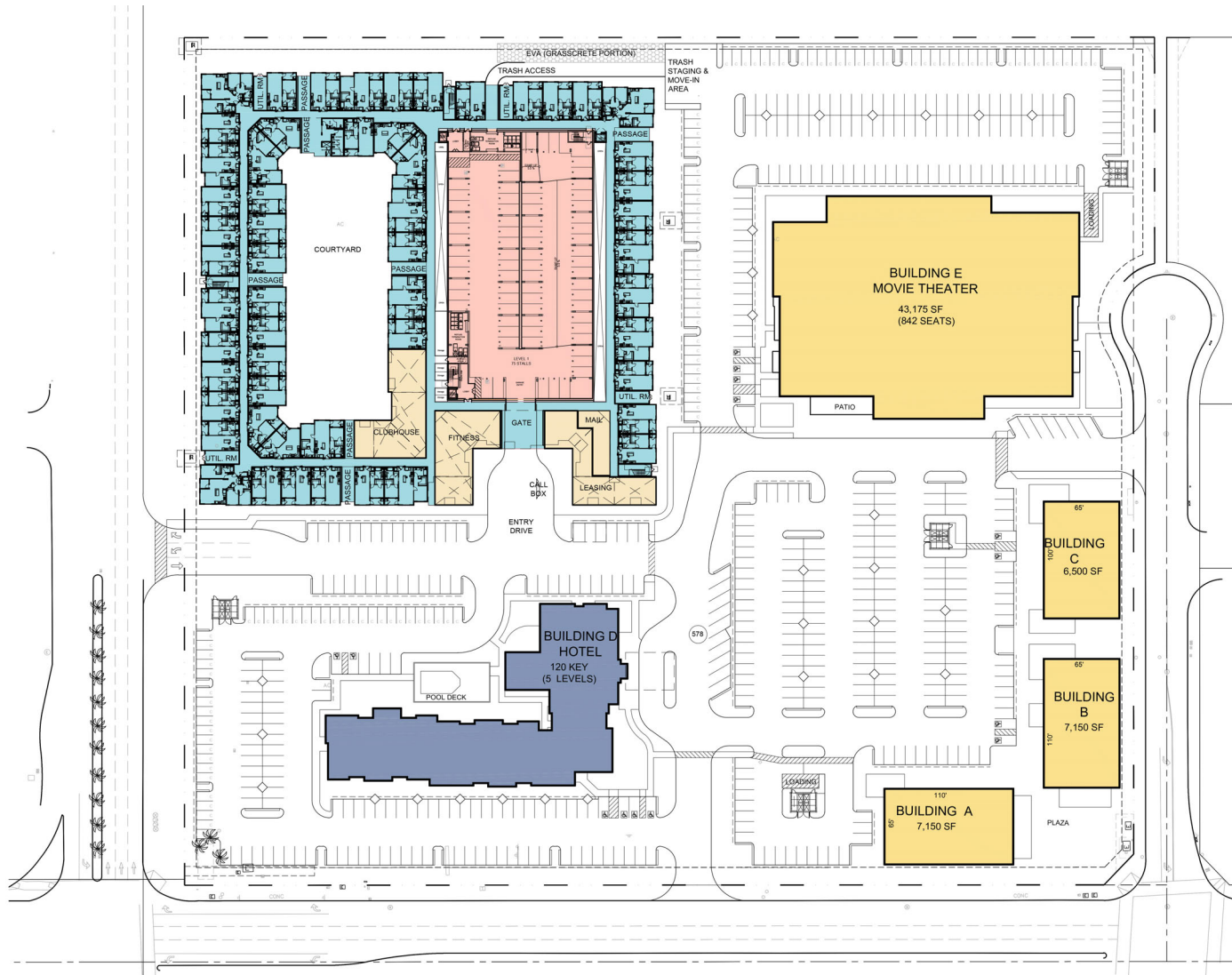


FIGURE 2

LSA



0 70 140  
FEET

SOURCE: Architects Orange

I:\SHO1901\G\Site Plan-Modified Project.cdr (7/18/2019)

Cypress City Center  
Conceptual Site Plan

## ORANGE COUNTY FIRE AUTHORITY QUESTIONNAIRE

For your convenience, we have provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. We would appreciate a response by **December 13, 2019**. Please return the completed questionnaire via email to [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net).

**1. Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Orange County Fire Authority (OCFA) is a Joint Powers Authority responsible for reducing loss of life and property from fire, medical, and environmental emergencies. The OCFA is a regional fire service agency that serves 24 cities in Orange County (County) and all unincorporated areas in the County. The OCFA protects over 1,984,758 residents from its 79 fire stations located throughout the County. In addition, OCFA Reserve Firefighters work 10 stations throughout the County<sup>1</sup>.

In addition to providing fire suppression, emergency medical services, hazardous materials response, wildland firefighting, technical rescue, and airport rescue firefighting services, the OCFA provides a variety of public services, including the following:

- Receiving and dispatching emergency calls;
- Providing public education programs to schools, businesses, community associations, childcare providers and other members of the community;
- Administering a Reserve Firefighter Program;
- Adopting and enforcing codes and ordinances relative to fire and life safety issues associated with commercial, industrial, and residential development;
- Maintaining a firefighting helicopter used for emergency responses throughout the year;
- Coordinating the inspection of all commercial buildings, investigating all fires, and enforcing hazardous materials regulations;
- Working with developers and jurisdictional planning departments on development projects impacting fire protection services, from conception through planning process approval;
- Conducting new construction inspections, fire safety inspections, and State Fire Marshal-required inspections (including high rise, jail, board and care, and day care inspections), and enforcing applicable fire codes and ordinances;
- Interacting with developers, architects, and engineers to meet the fire protection requirements for buildings and developments by reviewing all architectural blue prints, development plans, and proposals submitted in OCFA's jurisdiction;
- Conducting an inventory program of hazardous materials stored, handled, and used within OCFA's jurisdiction, and maintaining related information on a data base accessible to all emergency response agencies in the event of a major emergency;

---

<sup>1</sup> Orange County Fire Authority. Website: <https://www.ocfa.org/aboutus/PartnerCities.aspx>

- Conducting Uniform Fire Code inspections, assists in reducing risks associated with the use of hazardous materials in the community, and administering the State-mandated Risk Management and Prevention program;
- Investigating fires to determine their cause, preparing arson and hazardous materials cases for the district attorney, and initiating actions to recover costs for negligently caused fires; and
- Developing and maintaining a fire-safe corridor between the wildland and community developments through fuel modifications and inspections.

The City of Cypress is located in Operations Division 7, which serves the cities of Buena Park, Cypress, La Palma, and Stanton along with portions of several unincorporated communities.<sup>1</sup>

There is one OCFA fire station in the City (Fire Station No. 17, at 4991 Cerritos Avenue in Cypress). Fire Station No. 17 would be the first to the project site in the event of an emergency and would thus be designated as the “first-in” station. Fire Station No. 17 is staffed by six captains, six engineers, six firefighter/paramedics, and six firefighters and is equipped with a fire truck and paramedic engine. Fire Station No. 17 was substantially rebuilt and expanded in 2012 with added capacity to accommodate the existing and future fire protection and paramedic needs in the service area and has the equipment to handle fires in five-story buildings. In 2018, the City of Cypress generated 3,218 calls for service.<sup>2</sup>

“Second call” stations are fire stations that support the “first-in” station. Fire Stations No. 2 and 84 would be designated as the “second call” stations to support Fire Station No. 17. Fire Station No. 2, at 3642 Green Avenue in Los Alamitos, is approximately 3.0 mi southwest of the project site and is staffed by three captains, three engineers, and three firefighters. Fire Station No. 2 is equipped with a paramedic assessment unit engine. Fire Station No. 84, at 12191 Valley View Street in Garden Grove, is approximately 1.5 mi southeast of the project site and is staffed by three captains, three engineers, six firefighters, and six emergency trauma technicians. Fire Station No. 84 is equipped with an ambulance and an engine.

According to the City’s General Plan, Safety Element, it is the OCFA’s goal to have the first responding company for a fire call to reach emergency scene within 8 minutes and paramedics to reach the scene within 5 minutes, at least 90 percent of the time. In Fiscal Year 2017–2018, OCFA responded to emergency calls within 7 minutes and 58 seconds 80 percent of the time across all service areas.<sup>3</sup> The shortfall is due to a sustained decrease of OCFA’s firefighter-to-resident ratio covering the prior 10 years (on average 0.6 percent per year) and a 72 percent increase in call load.<sup>4</sup>

## **2. Are there any current plans for expansion of Fire Department facilities, services, or staff or to construct a new facility? If yes, please explain.**

<sup>1</sup> Orange County Fire Authority, Operations Directory: <https://www.ocfa.org/aboutus/Departments/OperationsDirectory/Division7.aspx> (accessed December 1, 2019).

<sup>2</sup> Orange County Fire Authority, Station Statistics: <https://www.ocfa.org/Uploads/Transparency/OCFA%20Annual%20Report%202018.pdf> (accessed December 1, 2019).

<sup>3</sup> Orange County Fire Authority, Fiscal Year 2018/2019 Adopted Budget. Website: <https://www.ocfa.org/Uploads/Transparency/OCFA%202018-2019%20Adopted%20Budget.pdf> (accessed December 1, 2019).

<sup>4</sup> Ibid.



- 
3. **It is LSA's understanding that fire flow requirements are based on building types and floor area and range from 1,000 to 8,000 gallons per minute at 20 pounds per square inch, based on Attachment 23 of the *Fire Master Plans for Commercial & Residential Development*. Can you provide an estimate of the fire flow requirements for the proposed project?**
  
  4. **Would the project substantially increase response times or create a substantial increase in demand for staff, facilities, equipment, or Fire or other emergency services (e.g., as a result of a potential increased call volume)?**
  
  5. **Can you please provide current (2018, if possible) incident information for Fire Station No. 2, 17, and 84 including basic life support calls, advanced life support calls, and fire services?**

**6. Will the OCFA be able to adequately serve the existing community and the proposed project? If not, can you recommend any measures for mitigating project impacts that might be incorporated into the project?**

**7. Please provide any additional comments or questions you would like to see addressed in the environmental analysis for this project.**

Prepared by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

## ORANGE COUNTY FIRE AUTHORITY QUESTIONNAIRE

For your convenience, we have provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. We would appreciate a response by **December 13, 2019**. Please return the completed questionnaire via email to [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net).

**1. Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Orange County Fire Authority (OCFA) is a Joint Powers Authority responsible for reducing loss of life and property from fire, medical, and environmental emergencies. The OCFA is a regional fire service agency that serves 24 cities in Orange County (County) and all unincorporated areas in the County. The OCFA protects over 1,984,758 residents from its 79 fire stations located throughout the County. In addition, OCFA Reserve Firefighters work 10 stations throughout the County<sup>1</sup>.

In addition to providing fire suppression, emergency medical services, hazardous materials response, wildland firefighting, technical rescue, and airport rescue firefighting services, the OCFA provides a variety of public services, including the following:

- Receiving and dispatching emergency calls;
- Providing public education programs to schools, businesses, community associations, childcare providers and other members of the community;
- Administering a Reserve Firefighter Program;
- Adopting and enforcing codes and ordinances relative to fire and life safety issues associated with commercial, industrial, and residential development;
- Maintaining a firefighting helicopter used for emergency responses throughout the year;
- Coordinating the inspection of all commercial buildings, investigating all fires, and enforcing hazardous materials regulations;
- Working with developers and jurisdictional planning departments on development projects impacting fire protection services, from conception through planning process approval;
- Conducting new construction inspections, fire safety inspections, and State Fire Marshal-required inspections (including high rise, jail, board and care, and day care inspections), and enforcing applicable fire codes and ordinances;
- Interacting with developers, architects, and engineers to meet the fire protection requirements for buildings and developments by reviewing all architectural blue prints, development plans, and proposals submitted in OCFA's jurisdiction;
- Conducting an inventory program of hazardous materials stored, handled, and used within OCFA's jurisdiction, and maintaining related information on a data base accessible to all emergency response agencies in the event of a major emergency;

---

<sup>1</sup> Orange County Fire Authority. Website: <https://www.ocfa.org/aboutus/PartnerCities.aspx>

- Conducting ~~Uniform~~ California Fire Code inspections, assists in reducing risks associated with the use of hazardous materials in the community, and administering the State-mandated Risk Management and Prevention program;
- Investigating fires to determine their cause, preparing arson and hazardous materials cases for the district attorney, and initiating actions to recover costs for negligently caused fires; and
- Developing and maintaining a fire-safe corridor between the wildland and community developments through fuel modifications and inspections.

The City of Cypress is located in Operations Division 7, which serves the cities of Buena Park, Cypress, La Palma, and Stanton along with portions of several unincorporated communities.<sup>1</sup>

There is one OCFA fire station in the City (Fire Station No. 17, at 4991 Cerritos Avenue in Cypress). Fire Station No. 17 would be the first to the project site in the event of an emergency and would thus be designated as the “first-in” station. Fire Station No. 17 is staffed by six captains, six engineers, six firefighter/paramedics, and six firefighters and is equipped with a fire truck and paramedic engine. Fire Station No. 17 was substantially rebuilt and expanded in 2012 with added capacity to accommodate the existing and future fire protection and paramedic needs in the service area and has the equipment to handle fires in five-story buildings. In 2018, the City of Cypress generated 3,218 calls for service.<sup>2</sup>

“Second call” stations are fire stations that support the “first-in” station. Fire Stations No. 2 and 84 would be designated as the “second call” stations to support Fire Station No. 17. Fire Station No. 2, at 3642 Green Avenue in Los Alamitos, is approximately 3.0 mi southwest of the project site and is staffed by three captains, three engineers, and three firefighters. Fire Station No. 2 is equipped with a paramedic assessment unit engine. Fire Station No. 84, at 12191 Valley View Street in Garden Grove, is approximately 1.5 mi southeast of the project site and is staffed by three captains, three engineers, six firefighters, and six emergency trauma technicians. Fire Station No. 84 is equipped with an ambulance and an engine.

According to the City’s General Plan, Safety Element, it is the OCFA’s goal to have the first responding company for a fire call to reach emergency scene within 8 minutes and paramedics to reach the scene within 5 minutes, at least 90 percent of the time. In Fiscal Year 2017–2018, OCFA responded to emergency calls within 7 minutes and 58 seconds 80 percent of the time across all service areas.<sup>3</sup> The shortfall is due to a sustained decrease of OCFA’s firefighter-to-resident ratio covering the prior 10 years (on average 0.6 percent per year) and a 72 percent increase in call load.<sup>4</sup>

## **2. Are there any current plans for expansion of Fire Department facilities, services, or staff or to construct a new facility? If yes, please explain.**

<sup>1</sup> Orange County Fire Authority, Operations Directory: <https://www.ocfa.org/aboutus/Departments/OperationsDirectory/Division7.aspx> (accessed December 1, 2019).

<sup>2</sup> Orange County Fire Authority, Station Statistics: <https://www.ocfa.org/Uploads/Transparency/OCFA%20Annual%20Report%202018.pdf> (accessed December 1, 2019).

<sup>3</sup> Orange County Fire Authority. Fiscal Year 2018/2019 Adopted Budget. Website: <https://www.ocfa.org/Uploads/Transparency/OCFA%202018-2019%20Adopted%20Budget.pdf> (accessed December 1, 2019).

<sup>4</sup> Ibid.



At this time there are no plans for expanded services or facilities near the project area.

3. It is LSA's understanding that fire flow requirements are based on building types and floor area and range from **1,500** to 8,000 gallons per minute at 20 pounds per square inch **for 2-4 hours**, based on Attachment 23 of the *Fire Master Plans for Commercial & Residential Development*. Can you provide an estimate of the fire flow requirements for the proposed project?

This is determined by varying construction details which include: number of stories, construction material (wood/concrete/steel) and occupancy plans. The building types in the projects will be evaluated individually for fire flow demand. From the information provided in the attachment it is estimated that these buildings will be approximately 3,000-4,000 gpm for 3 hours.

4. Would the project substantially increase response times or create a substantial increase in demand for staff, facilities, equipment, or Fire or other emergency services (e.g., as a result of a potential increased call volume)?

Any project which increases population can potentially increase workload. All projects are cumulative and OCFA uses a fair share approach to mitigate fire service response impacts and facility/equipment needs.

Mitigation: Prior to approval of any subdivision or comprehensive plan approval for the project, the designated site developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority.

5. Can you please provide current (2018, if possible) incident information for Fire Station No. 2, 17, and 84 including basic life support calls, advanced life support calls, and fire services? **Fire Station 84 did not transition to OCFA until August of 2019**

#### Incidents by Type in the City of Cypress

City	Total	Fire	Rupture	EMS	Hazardous Condition	Service Call	Good Intent	False Alarm	Other
Cypress	3,218	40	3	2,588	34	137	288	123	5

#### Incidents by First Due

First Due	Total	Fire	Rupture	EMS	Hazardous Condition	Service Call	Good Intent	False Alarm	Other
ORC02	1,603	15	1	1,251	27	62	171	75	1
ORC17	2,077	22	2	1,646	24	78	220	81	4
Total	3,680	37	3	2,897	51	140	391	156	5

#### Response Count by Unit

Unit	Fires	Ruptures	EMS	Hazardous Condition	Service Call	Good Intent	False Alarms	Others	Total
E17	31	1	1,246	15	28	90	26	0	1,437
T17	76	5	422	46	108	300	100	3	1,060
E2	40	4	1,730	37	89	275	80	1	2,256
Total	101	9	3,202	70	204	589	179	4	4,358

**6. Will the OCFA be able to adequately serve the existing community and the proposed project? If not, can you recommend any measures for mitigating project impacts that might be incorporated into the project?**

**The following are items we would address in the environmental documents to mitigate impacts on emergency response services**

- *Prior to approval of any subdivision or comprehensive plan approval for a project, the designated site developer may be required to enter into a Secured Fire Protection Agreement with the Orange County Fire Authority.*
  - *This Agreement shall specify the developer's pro-rata fair share funding of capital improvements necessary to establish adequate fire protection facilities and equipment, and/or personnel. Said agreement shall be reached as early as possible in the planning process, preferably for each phase or land use sector of the project, rather than on a parcel by parcel basis. The obligation must be satisfied prior to the issuance of the first building permit.*
- The project is subject to review by the City and the OCFA for various construction document plan checks for the applicable fire life safety codes and regulations. The project will be subject to the current editions of the CBC, CFC and related codes.
- Structures of this size and occupancy are required to have automatic fire sprinkler systems designed per NFPA 13 as required in the current CBC, CFC.
- A water supply system to supply fire hydrants and automatic fire sprinkler systems is required. Fire flow and hydrant spacing shall meet the minimums identified in the codes. Please refer to the California Fire Code Appendix section. These tables are also located in OCFA Guideline B09, Attachment 23.
- Fire department access shall be provided all around the building
- If the project scope includes or requires the installation of traffic signals on public access ways, these improvements shall include the installation of optical preemption devices.
- Attic spaces shall be fully sprinklered.
- It is unlawful to occupy any portions of this apartment building until City building department and OCFA have conducted final inspection and sign off

In addition, we would like to point out that all standard conditions with regard to development, including water supply, built in fire protection systems, road grades and width, access, building materials, and the like will be applied to this project at the time of plan submittal

**7. Please provide any additional comments or questions you would like to see addressed in the environmental analysis for this project.**

Please see comments in item 6

Prepared by: Tamera Rivers

Title: Management Analyst

Date: December 09, 2019

Phone: 714-573-6199



## APPENDIX I

### ORANGE COUNTY PUBLIC LIBRARY CORRESPONDENCE



**This page intentionally left blank**



CARLSBAD  
FRESNO  
IRVINE  
LOS ANGELES  
PALM SPRINGS  
POINT RICHMOND  
RIVERSIDE  
ROSEVILLE  
SAN LUIS OBISPO

December 3, 2019

Mr. Richard Vuong  
Planning Division  
OC Public Works Service Area/ OC Development Services  
PO Box 4048  
Santa Ana, CA 92702-4048

Subject: Cypress City Center Environmental Impact Report, City of Cypress

Dear Mr. Vuong:

This letter has been sent to you as part of an environmental review process being conducted pursuant to the California Environmental Quality Act (CEQA). The City of Cypress (City) has determined that preparation of an Environmental Impact Report (EIR) is necessary to adequately analyze the environmental effects of the Cypress City Center project (proposed project). The City is the Lead Agency, and LSA Associates, Inc. (LSA) has been retained by the City to prepare the environmental analysis required for the proposed project.

The proposed project would be located on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California. The project site is currently an undeveloped paved parking lot. Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course and periodic temporary truck parking two to three times per year. The project site is bounded by vacant land and surface parking lots associated with the Los Alamitos Race Course to the north, Katella Avenue to the south, Winners Circle to the east, and Siboney Street to the west. The location of the project site is shown in Figure 1.

The proposed project involves the construction and operation of a mixed-use development on the project site. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the property within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1.

The project site is within the boundaries of the Cypress Business and Professional Center Specific Plan (Specific Plan), and specifically occupies a portion of Planning Area 5, which is designated for Professional Office uses. Required discretionary actions associated with the project include the following: certification of the EIR; approval of a Development Agreement between SP Acquisition, LLC and the City of Cypress; approval of a Specific Plan Amendment to create a new mixed-use land

use district for the project site to allow residential and hotel uses; approval of a Tentative Parcel Map required for the subdivision of the project site; approval of Conditional Use Permits for the hotel, theater, commercial, and restaurant/alcohol uses; and approval of a Design Review Permit.

LSA is seeking information on how the proposed project would affect the Orange County Public Library's ability to provide services and whether the project would require new or expanded facilities. To assist with this effort, a questionnaire has been enclosed with specific questions relating to services near the project area. It would be helpful to the analysis for us to receive a response by Friday, December 13, 2019. Please email your response to [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net).

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

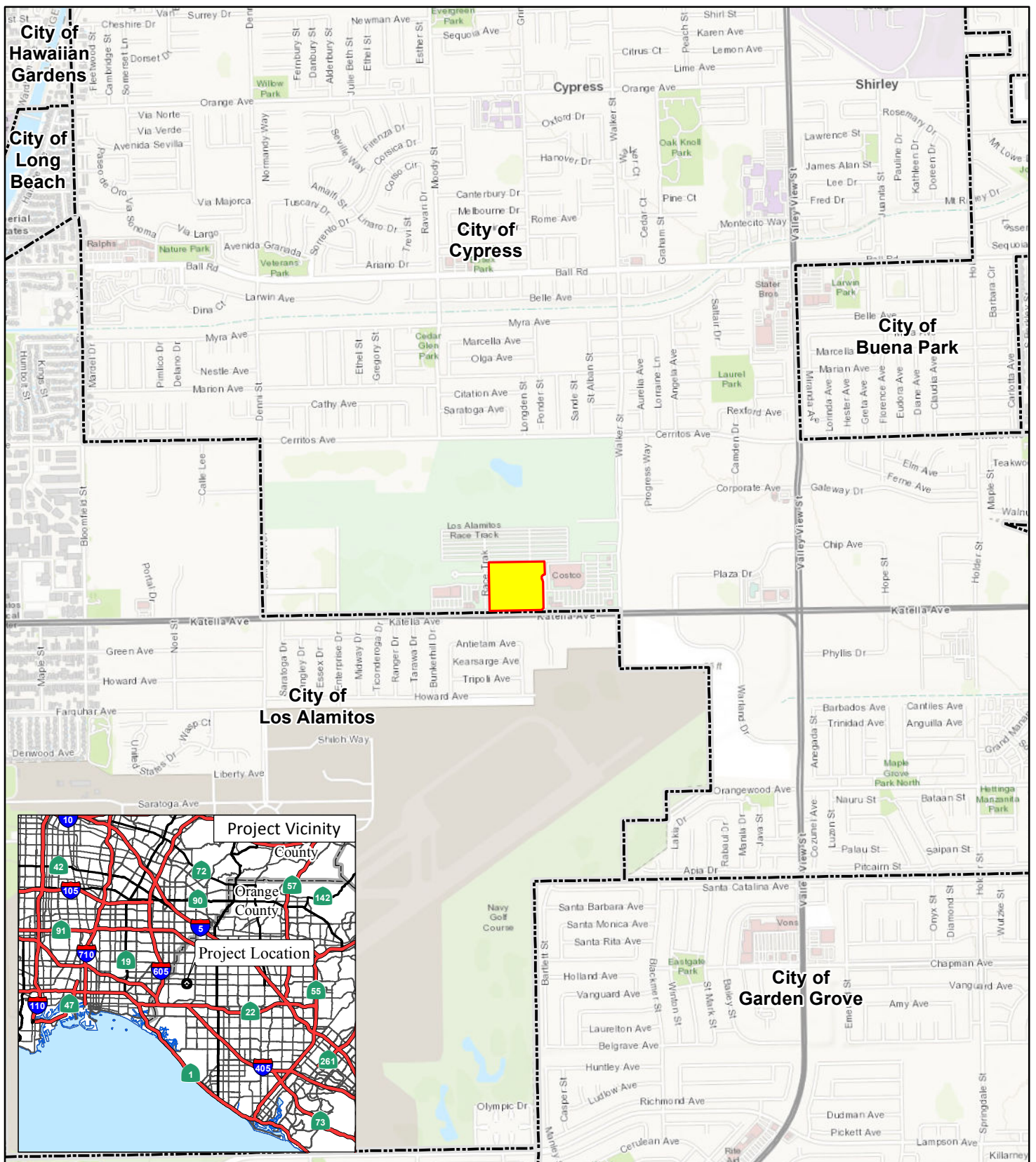
Sincerely,

**LSA Associates, Inc.**

A handwritten signature in black ink, appearing to read 'R. Bensley', written over a horizontal line.

Ryan Bensley  
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map  
Library Services Questionnaire



**LSA**

**LEGEND**

- Project Site
- City Boundary



0 1000 2000  
FEET

SOURCE: ArcGIS Online Topographic Map

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

**FIGURE 1**

*Cypress City Center*  
**Regional and Project Location**



## LIBRARY SERVICES QUESTIONNAIRE

For your convenience, LSA has provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. Please email your responses [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net). We would appreciate a response by **December 13, 2019**.

**1. Please confirm the following information regarding County library facilities:**

The Orange County Public Library (OCPL) system provides library services to the County, including the City. OCPL operates 33 library branches across the County, including the Cypress Library at 5331 Orange Avenue, approximately 1.5 mi northeast of the project site.

**2. According to the Growth Management Element of the Orange County General Plan (2012), the County's standards for library service are one 10,000 sf branch library facility per 50,000 residents, or if appropriate, one 15,000 sf regional library per 75,000 residents. This translates into 0.2 square foot of library space per capita. Please confirm that OCPL is still using this service standard for square footage per capita.**

**3. Based on our previous experience in Orange County, OCPL's adopted service standard is 1.5 volumes of books per capita. Please confirm that OCPL is still using this service standard or provide updated information.**

**4. What are the square footage and resource capacity (ie. books and other resources) of the Cypress Library?**



---

**5. Please provide any additional information that may be helpful in preparing an environmental analysis of the proposed project.**

Prepared by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

## LIBRARY SERVICES QUESTIONNAIRE

For your convenience, LSA has provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. Please email your responses [ryan.bensley@lsa.net](mailto:ryan.bensley@lsa.net). We would appreciate a response by **December 13, 2019**.

**1. Please confirm the following information regarding County library facilities:**

The Orange County Public Library (OCPL) system provides library services to the County, including the City. OCPL operates 33 library branches across the County, including the Cypress Library at 5331 Orange Avenue, approximately 1.5 mi northeast of the project site.

**2. According to the Growth Management Element of the Orange County General Plan (2012), the County's standards for library service are one 10,000 sf branch library facility per 50,000 residents, or if appropriate, one 15,000 sf regional library per 75,000 residents. This translates into 0.2 square foot of library space per capita. Please confirm that OCPL is still using this service standard for square footage per capita.**

The above service standards are no longer used by the State American Library Association or the County of Orange. Set standards no longer exist as Libraries in Orange County, are usually built by the City, and administered by the County to meet the needs of the specific community.

**3. Based on our previous experience in Orange County, OCPL's adopted service standard is 1.5 volumes of books per capita. Please confirm that OCPL is still using this service standard or provide updated information.**

The above service standard is no longer used by the State American Library Association or the County of Orange. With the advent of electronic access to Library services this standard is obsolete. The collections are built based on use, need, availability and budget.

**4. What are the square footage and resource capacity (ie. books and other resources) of the Cypress Library?**

Cypress Library is approximately 15,000 sq. ft. and is at full capacity. Over the past few years, the City has approved numerous projects that include the building of homes, apartments and townhomes which affect Library use.

**5. Please provide any additional information that may be helpful in preparing an environmental analysis of the proposed project.**

Adding housing has a direct impact on Library services. Consideration should be given to implementing a development fee to mitigate the impact on the Library and its services to the community.

Prepared by: Julie Oakley  
Title: Administrative Manager  
Date: 12/2019  
Phone: 714 566-3024



## APPENDIX J

# TRAFFIC IMPACT ANALYSIS



**This page intentionally left blank**

# **TRAFFIC IMPACT ANALYSIS**

**CYPRESS CITY CENTER  
CYPRESS, CALIFORNIA**



December 2019

# **TRAFFIC IMPACT ANALYSIS**

## **CYPRESS CITY CENTER CYPRESS, CALIFORNIA**

Submitted to:

City of Cypress  
5275 Orange Avenue  
Cypress, CA 90630

Prepared by:

LSA  
20 Executive Park, Suite 200  
Irvine, CA 92614-4731  
(949) 553-0666

Project No. SHO1902



December 2019

## TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND ACRONYMS .....	iii
<b>INTRODUCTION .....</b>	<b>1</b>
<b>ANALYSIS METHODOLOGY .....</b>	<b>4</b>
Study Area .....	4
Intersection Level of Service Methodologies .....	4
Threshold of Significance .....	5
<b>EXISTING CONDITIONS .....</b>	<b>6</b>
Existing Circulation System .....	6
Pedestrian Circulation .....	7
Bicycle Circulation .....	7
Transit Services.....	9
Existing Traffic Volumes and Level of Service .....	9
<b>PROJECT CONDITIONS.....</b>	<b>9</b>
Description of the Project .....	9
Trip Generation .....	9
Trip Distribution and Assignment.....	13
Existing Plus Project Conditions .....	13
Opening Year Conditions.....	17
Opening Year Plus Project Condition .....	25
<b>ANALYSIS OF STATE HIGHWAY FACILITIES .....</b>	<b>28</b>
Intersection Analysis .....	28
Intersection Significance Threshold .....	28
Analysis of Peak-Hour Operations on State Highway Facilities.....	28
<b>ORANGE COUNTY CONGESTION MANAGEMENT PROGRAM.....</b>	<b>29</b>
<b>CONCLUSIONS .....</b>	<b>32</b>
<b>REFERENCES .....</b>	<b>33</b>

## APPENDICES

- A: SCOPE OF WORK
- B: EXISTING TRAFFIC VOLUMES
- C: ICU WORKSHEETS
- D: HCM WORKSHEETS

## FIGURES AND TABLES

### FIGURES

Figure 1: Project Location and Study Area Intersections .....	2
Figure 2: Project Conceptual Site Plan .....	3
Figure 3: Existing Geometrics .....	8
Figure 4: Existing Peak-Hour Volumes.....	10
Figure 5: Project Trip Distribution—Residential.....	14
Figure 6: Project Trip Distribution—Retail .....	15
Figure 7: Project Trip Assignment .....	16
Figure 8: Existing Plus Project Peak-Hour Volumes.....	18
Figure 9: Locations of Cumulative Projects .....	21
Figure 10: Cumulative Projects Peak-Hour Volumes.....	22
Figure 11: Opening Year Peak-Hour Volumes .....	23
Figure 12: Opening Year Plus Project Peak-Hour Volumes .....	26
Figure 13: County of Orange CMP Highway System .....	30
Figure 14: CMP Study Area Determination—.....	31

### TABLES

Table A: Existing Intersection Level of Service Summary .....	11
Table B: Project Trip Generation Summary.....	12
Table C: Existing Plus Project Intersection Level of Service Summary .....	19
Table D: Summary of Cumulative Projects .....	20
Table E: Opening Year Level of Service Summary .....	24
Table F: Opening Year Plus Project Intersection Level of Service Summary .....	27
Table G: Summary of Intersection Operation, I-605 Northbound Ramps/Katella Avenue.....	29



## LIST OF ABBREVIATIONS AND ACRONYMS

ADT	average daily trips
Caltrans	California Department of Transportation
City	City of Cypress
CMP	Congestion Management Program
HCM	Highway Capacity Manual
I	Interstate
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
LOS	level of service
mph	miles per hour
OCTA	Orange County Transportation Authority
project	Cypress City Center Project
sf	square foot/feet
TIA	Traffic Impact Analysis
v/c	volume to capacity

## TRAFFIC IMPACT ANALYSIS CYPRESS CITY CENTER

### INTRODUCTION

The purpose of this Traffic Impact Analysis (TIA) is to identify the potential traffic impacts associated with the proposed Cypress City Center Project (project) in Cypress, California. The project proposes to construct retail, residential, hotel, and theater uses on the project site, which is currently a 13-acre vacant parcel. The project would be completed in 2021.

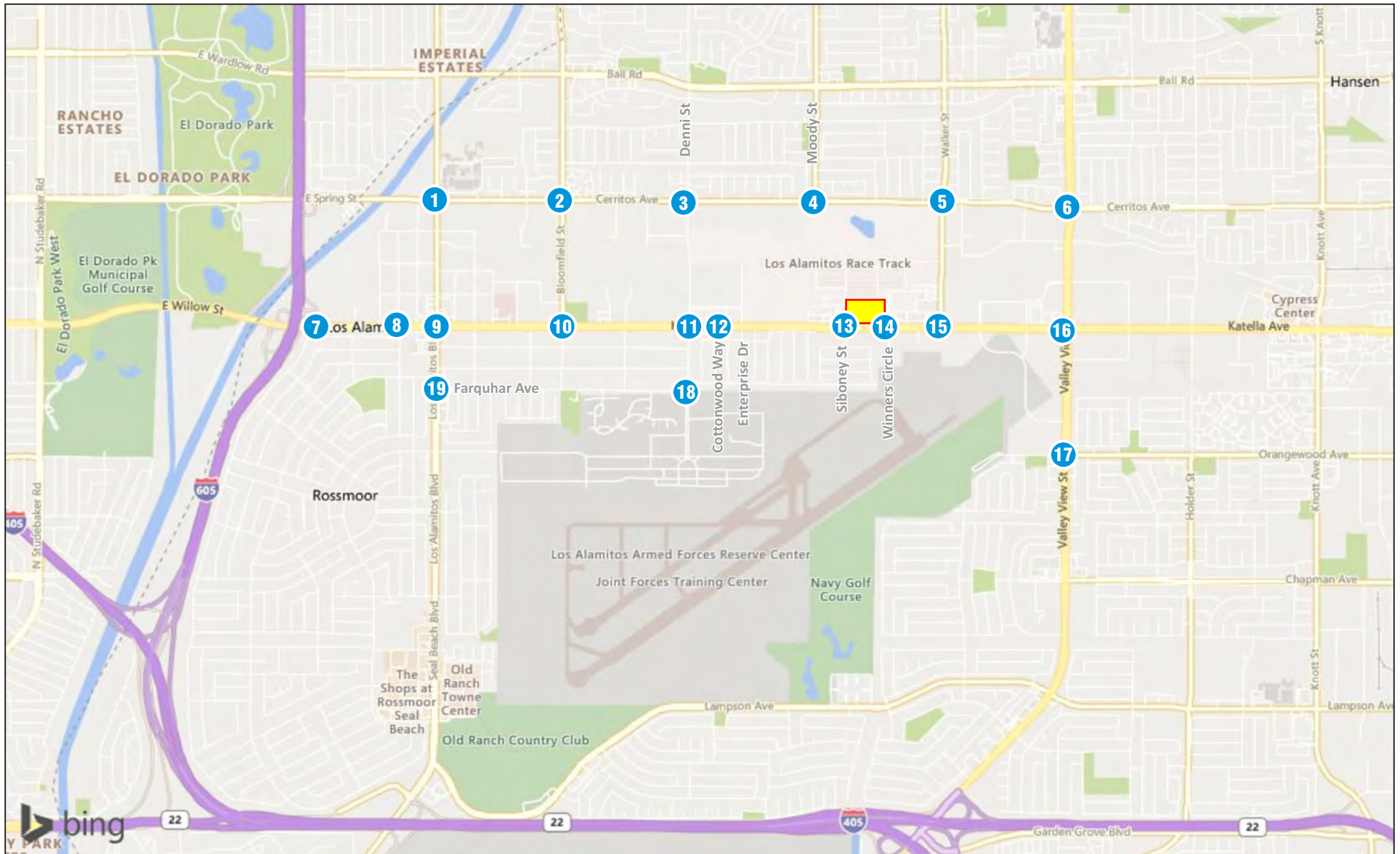
The project site is generally bounded by Katella Avenue to the south, Siboney Street to the west, Winners Circle to the east, and the Los Alamitos Race Course to the north. The project includes 20,800 sf of retail use, 251 dwelling units of residential use (apartments), a 120-room hotel, and a 10-screen movie theater. Access to the project site would be provided via Siboney Street (and the existing traffic signal at Siboney Street/Katella Avenue), Winners Circle (and the existing traffic signal at Winners Circle/Katella Avenue), and a right-turn-in/out-only driveway directly on Katella Avenue. A project vicinity map is presented on Figure 1. Figure 2 illustrates the conceptual site plan of the project.

A scope of work was reviewed by the City Traffic Engineer prior to preparation of the TIA. The City Traffic Engineer provided his concurrence with the approach and analysis methodologies outlined in the letter (Appendix A). Based on this, the TIA will examine the following development scenarios:

1. Existing
2. Existing Plus Project
3. Opening Year (2021)
4. Opening Year Plus Project

The following analysis periods have been evaluated:

- Weekday a.m. peak hour (between 7:00 a.m. and 9:00 a.m.)
- Weekday p.m. peak hour (between 4:00 p.m. and 6:00 p.m.)



LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

#### LEGEND

- Project Site

# - Study Area Intersection

FIGURE 1

*Cypress City Center*  
Project Location and  
Study Area Intersections



FIGURE 2

LSA



0 70 140  
FEET

SOURCE: Architects Orange

I:\SHO1902\G\Site Plan.cdr (7/18/2019)

Cypress City Center  
Conceptual Site Plan



## ANALYSIS METHODOLOGY

This TIA is prepared consistent with the requirements of the City of Cypress, the City of Los Alamitos, and the Orange County Congestion Management Program (CMP) (County of Orange 2017).

### Study Area

Study area locations were selected in consultation with the City of Cypress. The following 19 intersections (5 intersections in Cypress, 6 intersections in both Cypress and Los Alamitos, 7 intersections in Los Alamitos, and 1 California Department of Transportation [Caltrans] intersection) are shown in Figure 1:

- |  |                        |
|--|------------------------|
| 1. Los Alamitos Boulevard/Cerritos Avenue              | (Los Alamitos)         |
| 2. Bloomfield Street/Cerritos Avenue                   | (Los Alamitos)         |
| 3. Denni Street/Cerritos Avenue                        | (Cypress/Los Alamitos) |
| 4. Moody Street/Cerritos Avenue                        | (Cypress)              |
| 5. Walker Street/Cerritos Avenue                       | (Cypress)              |
| 6. Valley View Street/Cerritos Avenue                  | (Cypress)              |
| 7. Interstate (I) 605 northbound ramps/Cerritos Avenue | (Caltrans)             |
| 8. Wallingsford Road–Walnut Street/Katella Avenue      | (Los Alamitos)         |
| 9. Los Alamitos Boulevard/Katella Avenue               | (Los Alamitos)         |
| 10. Bloomfield Street/Katella Avenue                   | (Los Alamitos)         |
| 11. Lexington Drive/Katella Avenue                     | (Cypress/Los Alamitos) |
| 12. Cottonwood Way/Katella Avenue                      | (Cypress/Los Alamitos) |
| 13. Siboney Street/Katella Avenue                      | (Cypress/Los Alamitos) |
| 14. Winners Circle/Katella Avenue                      | (Cypress/Los Alamitos) |
| 15. Walker Street/Katella Avenue                       | (Cypress/Los Alamitos) |
| 16. Valley View Street/Katella Avenue                  | (Cypress)              |
| 17. Valley View Street/Orangewood Avenue               | (Cypress)              |
| 18. Lexington Drive/Farquhar Avenue                    | (Los Alamitos)         |
| 19. Los Alamitos Boulevard/Farquhar Avenue             | (Los Alamitos)         |

### Intersection Level of Service Methodologies

In accordance with the City of Cypress, the City of Los Alamitos, and the Orange County CMP, signalized intersection operation is analyzed using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums up these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The ICU calculations assume a per-lane capacity of 1,700 vehicles per hour with a clearance interval of 0.05.

The resulting ICU is expressed in terms of level of service (LOS), where LOS A represents free-flow operation and LOS F represents overcapacity operation. The relationship between LOS and the ICU value (i.e., v/c ratio) is as follows.

Level of Service	Volume-to-Capacity (ICU Methodology)
A	$\leq 0.60$
B	$> 0.60$ and $\leq 0.70$
C	$> 0.70$ and $\leq 0.80$
D	$> 0.80$ and $\leq 0.90$
E	$> 0.90$ and $\leq 1.00$
F	$> 1.00$

ICU = Intersection Capacity Utilization

In addition to the ICU methodology of calculating signalized intersection LOS, the Highway Capacity Manual (HCM), 6<sup>th</sup> Edition (Transportation Resources Board 2016) methodology is used to determine the LOS of the unsignalized intersections and signalized intersections at freeway interchanges (i.e., I-605 northbound ramps/Katella Avenue), as required by Caltrans. The HCM signalized intersection methodology is based on delay (in seconds per vehicle), as opposed to capacity, as the measure of effectiveness. The resulting delay is expressed in terms of LOS, much like the ICU methodology. The following tables illustrate the relationship of delay to LOS for unsignalized and signalized intersections.

Level of Service	Unsignalized Intersection Delay (seconds)
A	$\leq 10.0$
B	$> 10.0$ and $\leq 15.0$
C	$> 15.0$ and $\leq 25.0$
D	$> 25.0$ and $\leq 35.0$
E	$> 35.0$ and $\leq 50.0$
F	$> 50.0$

Source: *Highway Capacity Manual*, 6<sup>th</sup> Edition (Transportation Research Board 2016).

Level of Service	Signalized Intersection Delay (seconds)
A	$\leq 10.0$
B	$> 10.0$ and $\leq 20.0$
C	$> 20.0$ and $\leq 35.0$
D	$> 35.0$ and $\leq 55.0$
E	$> 55.0$ and $\leq 80.0$
F	$> 80.0$

Source: *Highway Capacity Manual*, 6<sup>th</sup> Edition (Transportation Research Board 2016).

It should be noted that since the HCM 6<sup>th</sup> Edition analysis methodology does not support analysis of nonstandard signal phasing or more than one exclusive lane on turning movements, the HCM 2000 analysis methodology was utilized at one location.

### Threshold of Significance

The City of Cypress considers LOS D as the upper limit of satisfactory operations for intersections, except at intersections along Valley View Street, Lincoln Avenue, and Katella Avenue. The City has adopted LOS E as the standard for intersections along these three arterials, as they carry a significant amount of traffic. Also, Valley View Street and Katella Avenue are designated on the Orange County CMP as CMP facilities, and intersections along these roadways must not be below LOS E.

The City of Los Alamitos considers LOS D as the upper limit of satisfactory operations for intersections, except at intersections along Katella Avenue, where LOS E is acceptable.

Based on City of Cypress and the City of Los Alamitos standards, a project traffic impact occurs at an intersection if the project causes an intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS, or if an intersection is already operating at an unacceptable LOS and the project adds 0.01 or more to the peak-hour ICU.

For the purpose of this study, a project impact would occur at an unsignalized intersection if the project adds traffic to a deficient intersection, project traffic results in a deficient intersection, or a traffic signal warrant is met.

## EXISTING CONDITIONS

### Existing Circulation System

The project site is generally bounded by Katella Avenue to the south, Siboney Street to the west, Winners Circle to the east, and the Los Alamitos Race Course to the north. The following provides a description of the existing roadways in the project vicinity.

- **Valley View Street** is a north-south six-lane divided roadway located east of the project site. According to the City of Cypress General Plan Circulation Element (City of Cypress 2000), Valley View Street is classified as a Major Arterial. Valley View Street is designated on the Orange County CMP as a CMP facility. The posted speed limit is 45 miles per hour (mph). Sidewalks are provided on both sides of the street in the vicinity of the project site. On-street parking is not permitted.
- **Walker Street** is a north-south four-lane undivided roadway located east of the project site. According to the City of Cypress General Plan Circulation Element, Walker Street is classified as a Secondary Arterial. The posted speed limit is 40 mph. Sidewalks are provided on both sides of the street. On-street parking is not permitted.
- **Moody Street** is a north-south four-lane divided roadway. Moody Street is located north of the project site and ends at Cerritos Avenue at the Los Alamitos Race Course. According to the City's General Plan Circulation Element, Moody Street is classified as a Primary Arterial. The posted speed limit is 40 mph. On-street bicycle lanes (Class II) and sidewalks are provided on both sides of the street. On-street parking is generally not permitted.
- **Denni Street–Lexington Drive** is a north-south undivided roadway located west of the project site. Lexington Drive is a two-lane roadway located south of Cerritos Avenue, and Denni Street is a four-lane roadway located north of Cerritos Avenue. According to the City of Cypress General Plan Circulation Element, Denni Street is classified as a Secondary Arterial. The posted speed limit is 35 mph. Sidewalks are provided on both sides of Denni Street and on some parts of Lexington Drive. On-street parking is not permitted.
- **Bloomfield Street** is a north-south four-lane divided roadway located west of the project site. According to the City of Cypress and City of Los Alamitos General Plans, Bloomfield Street is

classified as a Secondary Arterial. The posted speed limit is 40 mph. On-street bicycle lanes (Class II) and sidewalks are provided on both sides of the street. On-street parking is permitted in select locations.

- **Los Alamitos Boulevard** is a six-lane divided roadway located west of the project site. According to the City of Los Alamitos General Plan, Los Alamitos Boulevard is classified as a Major Arterial. The posted speed limit is 35 mph. Sidewalks are provided on both sides of the street. On-street parking is permitted in select locations.
- **Katella Avenue** is a six-lane divided roadway located south of the project site. Katella Avenue is located in both City of Cypress and City of Los Alamitos jurisdictions. Katella Avenue is designated as a Major Arterial in the City of Cypress General Plan and as a Smart Street in the City of Los Alamitos General Plan. Katella Avenue is designated on the Orange County CMP as a CMP facility. The posted speed limit is 40 to 45 mph. Sidewalks are provided on both sides of the street. On-street parking is permitted in select locations.
- **Cerritos Avenue** is a four to five-lane divided roadway located north of the project site. According to both the City of Cypress and City of Los Alamitos General Plans, Cerritos Avenue is a Primary Arterial. The posted speed limit is 35 to 45 mph. Sidewalks are provided on both sides of the street, and on-street (Class II) bicycle lanes are provided on both sides between Walker Street and Denni Street. On-street parking is permitted in select locations.
- **Orangewood Avenue** is a four-lane undivided roadway located southeast of the project site. According to the City of Cypress General Plan, Orangewood Avenue is a Secondary Arterial. The posted speed limit is 40 mph. Sidewalks are provided on both sides of the street. On-street parking is not permitted.

All other roadways within the study area are local or collector streets. The existing study area intersection geometrics are shown on Figure 3.

### Pedestrian Circulation

Sidewalks currently exist on both sides of Katella Avenue in the project vicinity. There are pedestrian crosswalks at all signalized intersections in the project vicinity. These facilities provide for pedestrian circulation between the project site and the surrounding areas.

### Bicycle Circulation

On-street (Class II) bicycle lanes are provided on both sides of Cerritos Avenue (between Walker Street and Denni Street) and Bloomfield Street. There is Class I bicycle lane on the south side of Cerritos Avenue between Walker Street and Denni Street. There is no bicycle lane on Katella Avenue.



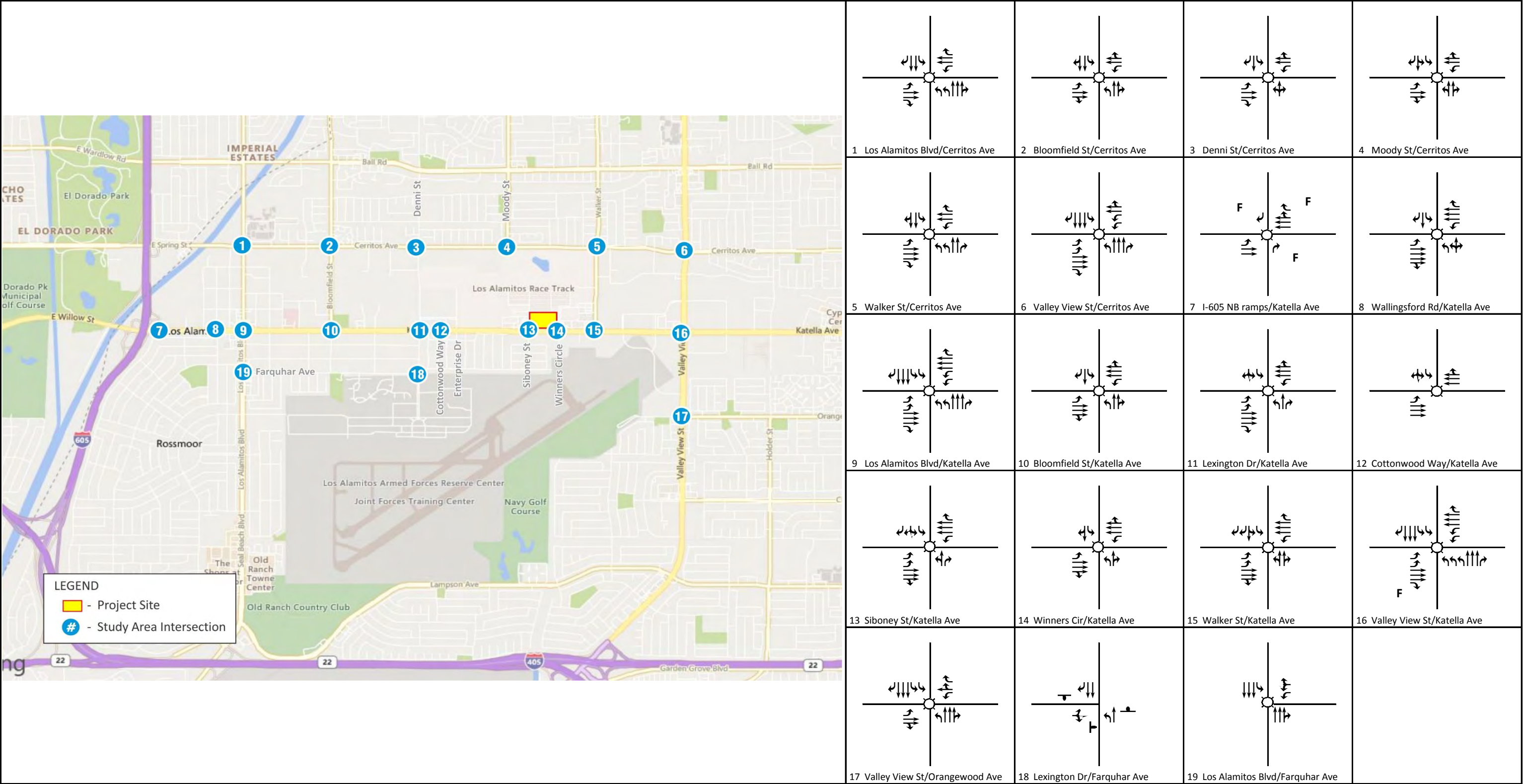


FIGURE 3

Cypress City Center  
Existing Geometrics

## Transit Services

Transit facilities will be accessible to and from the project site. An Orange County Transportation Authority (OCTA) bus stop is provided adjacent to the project site (OCTA Route 50). OCTA Route 50 provides transportation to/from Orange and Long Beach via Katella Avenue. OCTA Route 50 runs at about a 30-minute headway during weekday peak hours. An OCTA bus stop is provided on Valley View Street/Katella Avenue within 1 mile of the project site (OCTA Route 21). OCTA Route 21 provides transportation to/from Buena Park and Sunset Beach via Valley View Street. OCTA Route 21 runs at about a 60-minute headway during weekday peak hours.

## Existing Traffic Volumes and Level of Service

Existing turn movement counts were provided by the City of Cypress for nine of the study intersections (October 2018) and additional turning movement counts were conducted for the remaining 10 study intersections in May of 2019. All counts were conducted by National Data & Surveying Services (NDS). The existing a.m. and p.m. peak-hour turn movement volumes for the study area intersections are shown on Figure 4 and the NDS count sheets are provided in Appendix B.

Table A summarizes the results of the existing peak-hour LOS analysis for the study area intersections. The Existing ICU and HCM worksheets for signalized and unsignalized intersections are contained in Appendices C and D, respectively. As shown in Table A, all study area intersections currently operate at satisfactory LOS during both peak hours.

## PROJECT CONDITIONS

### Description of the Project

The project includes 20,800 sf of retail use, 251 dwelling units of residential use (apartments), a 120-room hotel, and a 10-screen movie theater. Access to the project site would be provided via Siboney Street (and the existing traffic signal at Siboney Street/Katella Avenue), Winners Circle (and the existing traffic signal at Winners Circle/Katella Avenue), and an existing right-turn-in/out-only driveway directly on Katella Avenue.

### Trip Generation

LSA identified the trip generation of the project based on the trip rates in the latest Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10<sup>th</sup> Edition (2017). The project trip generation is shown in Table B.



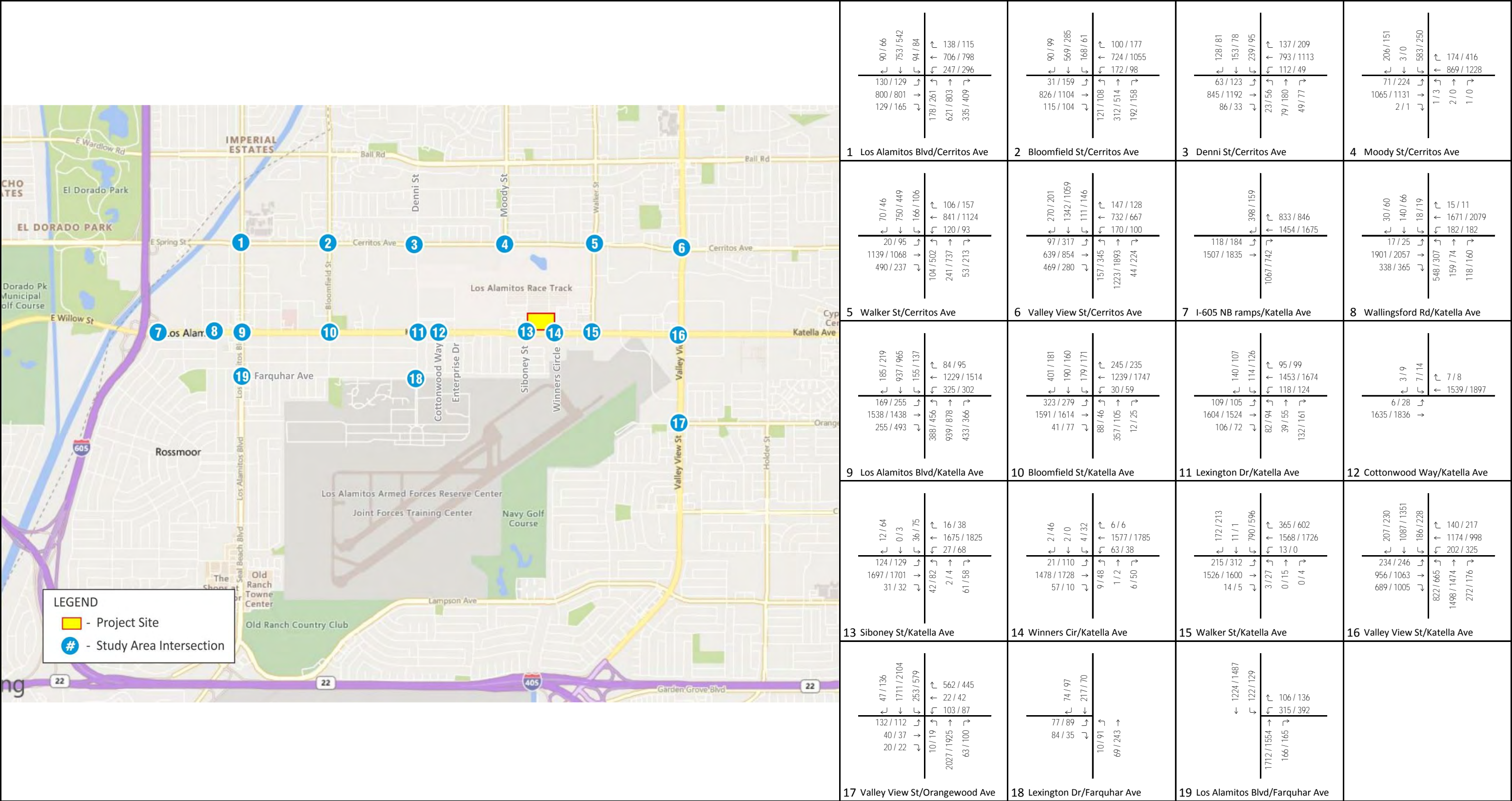


FIGURE 4

LSA

↑

N

LEGEND

xxx / yyy

AM / PM Volume

Cypress City Center  
Existing Peak-Hour Volumes

**Table A: Existing Intersection Level of Service Summary**

Intersection		Control	Peak Hour	Existing	
				ICU/Delay	LOS
1	Los Alamitos Boulevard/Cerritos Avenue	Signal	AM	0.704	C
			PM	0.745	C
2	Bloomfield Street/Cerritos Avenue	Signal	AM	0.693	B
			PM	0.739	C
3	Denni Street/Cerritos Avenue	Signal	AM	0.594	A
			PM	0.751	C
4	Moody Street/Cerritos Avenue	Signal	AM	0.572	A
			PM	0.756	C
5	Walker Street/Cerritos Avenue	Signal	AM	0.681	B
			PM	0.730	C
6	Valley View Street/Cerritos Avenue	Signal	AM	0.731	C
			PM	0.834	D
7	I-605 northbound ramps/Katella Avenue	Signal	AM	0.493	A
			PM	0.590	A
8	Wallingsford Road – Walnut Street/Katella Avenue	Signal	AM	0.811	D
			PM	0.711	C
9	Los Alamitos Boulevard/Katella Avenue	Signal	AM	0.745	C
			PM	0.745	C
10	Bloomfield Street/Katella Avenue	Signal	AM	0.819	D
			PM	0.742	C
11	Lexington Drive/Katella Avenue	Signal	AM	0.579	A
			PM	0.592	A
12	Cottonwood Way/Katella Avenue	Signal	AM	0.371	A
			PM	0.447	A
13	Siboney Street/Katella Avenue	Signal	AM	0.461	A
			PM	0.524	A
14	Winners Circle/Katella Avenue	Signal	AM	0.396	A
			PM	0.521	A
15	Walker Street/Katella Avenue	Signal	AM	0.658	B
			PM	0.687	B
16	Valley View Street/Katella Avenue	Signal	AM	0.723	C
			PM	0.749	C
17	Valley View Street/Orangewood Avenue	Signal	AM	0.784	C
			PM	0.826	D
18	Lexington Drive/Farquhar Avenue	AWSC	AM	8.8	A
			PM	9.7	A
19	Los Alamitos Boulevard/ Farquhar Avenue	Signal	AM	0.614	B
			PM	0.618	B

ICU = Intersection Capacity Utilization

Delay is reported in seconds.

LOS = level of service

AWSC = all-way stop control

**Table B: Project Trip Generation Summary**

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates <sup>1</sup>									
Shopping Center		TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Multifamily Housing (Mid-Rise)		du	5.44	0.09	0.27	0.36	0.27	0.17	0.44
Hotel		rooms	8.36	0.28	0.19	0.47	0.31	0.29	0.60
Multiplex Movie Theater		screens	220.00	-	-	-	7.00	6.73	13.73
Project Trip Generation									
Shopping Center	20.800	TSF	785	12	8	20	38	41	79
Multifamily Housing (Mid-Rise)	251	du	1,365	23	67	90	68	42	110
Hotel	120	rooms	1,003	34	22	56	37	35	72
Multiplex Movie Theater	10	screens	2,200	0	0	0	70	67	137
Gross Trip Generation			5,353	69	97	166	213	185	398
Internal Capture Reduction <sup>2</sup>			(375)	(1)	(1)	(2)	(26)	(26)	(52)
Shopping Center Pass-By Trip Reduction (PM-34%) <sup>3</sup>			0	0	0	0	(11)	(12)	(23)
Net Trip Generation			4,978	68	96	164	176	147	323

<sup>1</sup> Trip rates referenced from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 10th Edition (2017).

Land Use Code 820 - Shopping Center

Land Use Code 221 - Multifamily Housing (Mid-Rise)

Land Use Code 310 - Hotel

Land Use Code 445 - Multiplex Movie Theater has been used for PM trip rates. Multiplex Movie Theater rate was not available for daily. Land Use Code 444 - Movie Theater has been used for daily rate. The movie theater is assumed to be closed in the AM peak hour.

<sup>2</sup> Internal capture referenced from NCHRP 684 Internal Trip Capture Estimation Tool (AM 1%, PM 13%). Internal capture for daily is the average of internal capture for AM and PM (7%).

<sup>3</sup> Pass-by percentages are based on the ITE *Trip Generation* Handbook, 3rd Edition.

ADT = average daily trips

TSF = thousand square feet

du = dwelling units

Trips for the retail use were generated using trip rates from Land Use Code 820 (Shopping Center), trips for the residential use were generated using trip rates from Land Use Code 221 (Multifamily Housing – Mid-Rise), trips for the hotel use were generated using trip rates from Land Use Code 310 (Hotel), and trips for the theater use were generated using trip rates from Land Use Codes 444 and 445 (Movie Theater and Multiplex Movie Theater). As Table B indicates, the project has the potential to generate approximately 4,978 ADT, including 164 trips (68 inbound and 96 outbound) in the a.m. peak hour and 323 trips (176 inbound and 147 outbound) in the p.m. peak hour.

### **Trip Distribution and Assignment**

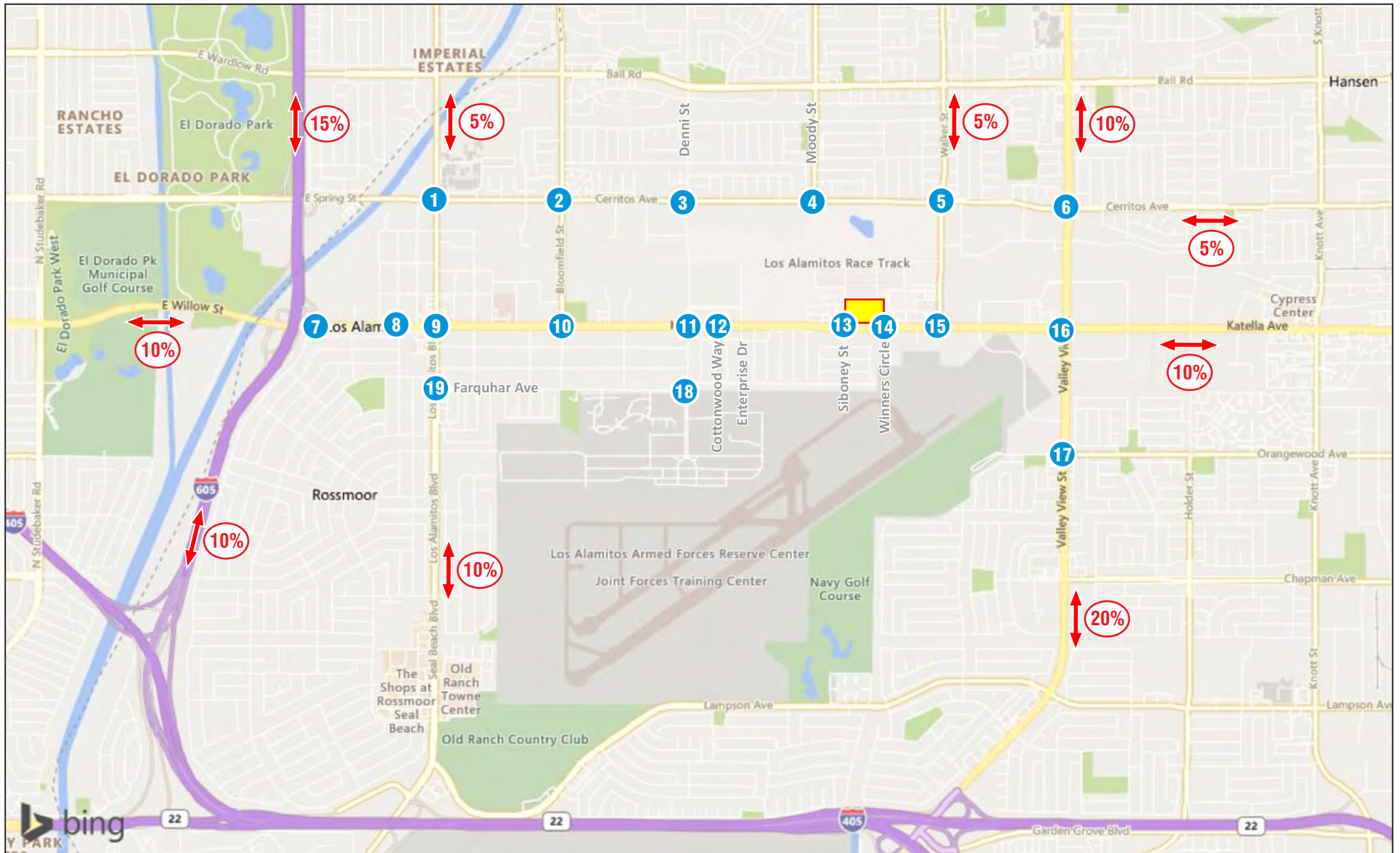
Trip distribution for the project is based on the location of the project, logical travel corridors, minimum time paths, and previously approved studies within the study area. Project peak-hour traffic volumes entering/exiting the project site were assigned to the adjacent street system based on the locations of project driveways and project components. Trip distribution assumptions during the a.m. and p.m. peak hours for the residential and the retail components are shown on Figures 5 and 6, respectively. Trips were distributed separately for the retail and residential components. Residential trips were assumed to be more regional, and retail trips were assumed to be more local. Figure 7 shows the total (combined residential and retail) trip assignment for the project.

### **Existing Plus Project Conditions**

To determine the Existing Plus Project conditions, the net traffic generated by the project was added to existing traffic volumes at the study area intersections. Figure 8 shows the resulting Existing Plus Project peak-hour traffic volumes.

Table C summarizes the results of the Existing Plus Project peak-hour LOS analysis for the study area intersections. The Existing Plus Project ICU and HCM worksheets for signalized and unsignalized intersections are contained in Appendices C and D, respectively. As shown in Table C, with the addition of the project, all study area intersections would continue to operate at satisfactory LOS during both peak hours. Therefore, the project could be implemented with no significant peak-hour impacts in the existing conditions.





LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

LEGEND

- Project Site

# - Study Area Intersection

XX% - Project Trip Distribution Percentage

FIGURE 5

*Cypress City Center*  
Project Trip Distribution - Residential

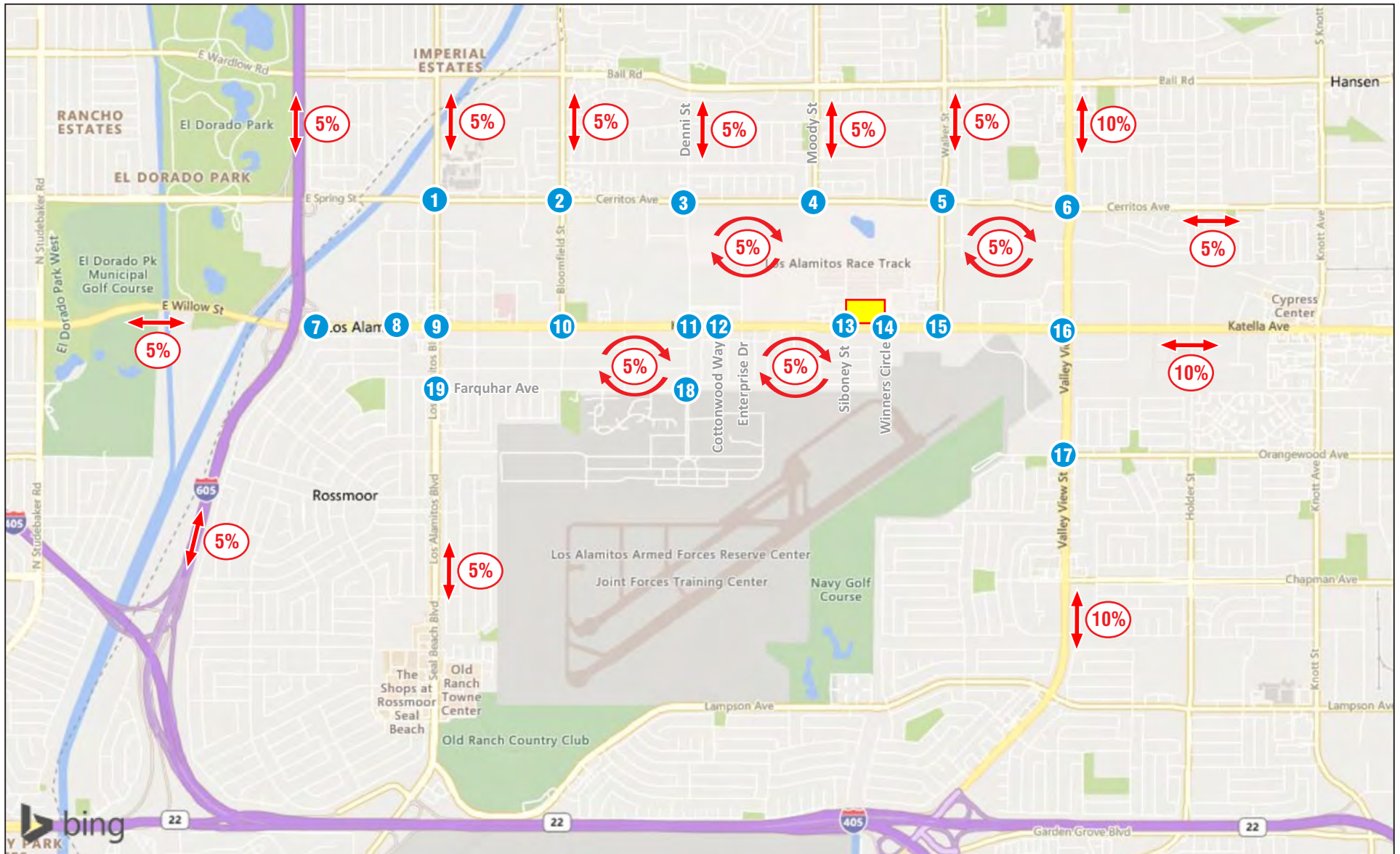


FIGURE 6

LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

LEGEND

■ - Project Site

# - Study Area Intersection

ⓧ% - Project Trip Distribution Percentage

Cypress City Center  
Project Trip Distribution - Retail



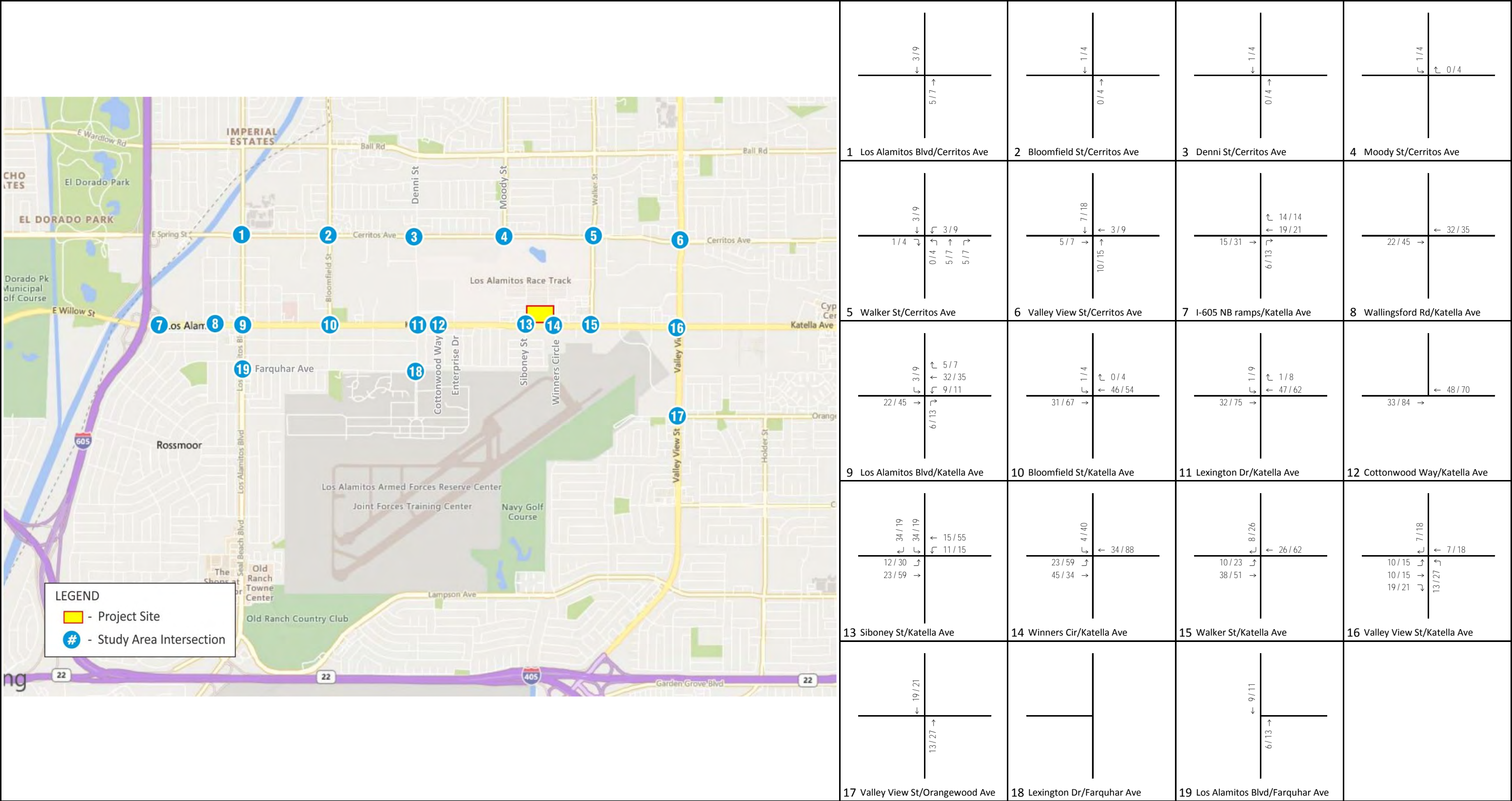


FIGURE 7

LSA  
N  
LEGEND  
xxx / yyy  
AM / PM Volume

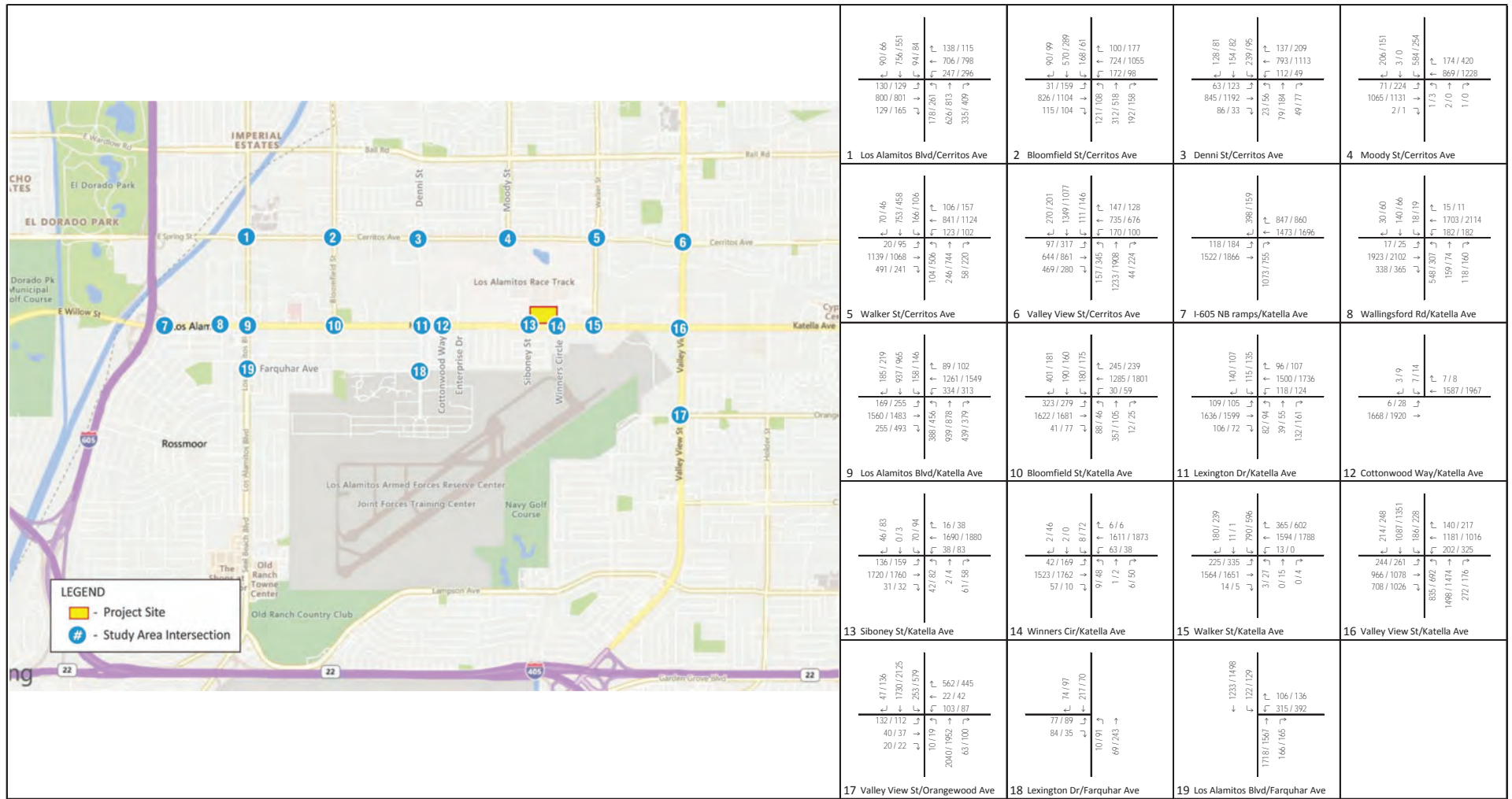


FIGURE 8

Cypress City Center  
Existing plus Project Peak-Hour Volumes

**Table C: Existing Plus Project  
Intersection Level of Service Summary**

	Intersection	Control	Peak Hour	Existing		Existing Plus Project		Project Impact	
				ICU/Delay	LOS	ICU/Delay	LOS	Δ ICU/Delay	Yes/No
1	Los Alamitos Boulevard/Cerritos Avenue	Signal	AM	0.704	C	0.705	C	0.001	No
			PM	0.745	C	0.747	C	0.002	No
2	Bloomfield Street/Cerritos Avenue	Signal	AM	0.693	B	0.693	B	0.000	No
			PM	0.739	C	0.741	C	0.002	No
3	Denni Street/Cerritos Avenue	Signal	AM	0.594	A	0.594	A	0.000	No
			PM	0.751	C	0.754	C	0.003	No
4	Moody Street/Cerritos Avenue	Signal	AM	0.572	A	0.572	A	0.000	No
			PM	0.756	C	0.757	C	0.001	No
5	Walker Street/Cerritos Avenue	Signal	AM	0.681	B	0.684	B	0.003	No
			PM	0.730	C	0.734	C	0.004	No
6	Valley View Street/Cerritos Avenue	Signal	AM	0.731	C	0.733	C	0.002	No
			PM	0.834	D	0.840	D	0.006	No
7	I-605 northbound ramps/Katella Avenue	Signal	AM	0.493	A	0.498	A	0.005	No
			PM	0.590	A	0.599	A	0.009	No
8	Wallingsford Road – Walnut Street/Katella Avenue	Signal	AM	0.811	D	0.815	D	0.004	No
			PM	0.711	C	0.718	C	0.007	No
9	Los Alamitos Boulevard/Katella Avenue	Signal	AM	0.745	C	0.752	C	0.007	No
			PM	0.745	C	0.756	C	0.011	No
10	Bloomfield Street/Katella Avenue	Signal	AM	0.819	D	0.828	D	0.009	No
			PM	0.742	C	0.755	C	0.013	No
11	Lexington Drive/Katella Avenue	Signal	AM	0.579	A	0.585	A	0.006	No
			PM	0.592	A	0.608	B	0.016	No
12	Cottonwood Way/Katella Avenue	Signal	AM	0.371	A	0.377	A	0.006	No
			PM	0.447	A	0.460	A	0.013	No
13	Siboney Street/Katella Avenue	Signal	AM	0.461	A	0.480	A	0.019	No
			PM	0.524	A	0.551	A	0.027	No
14	Winners Circle/Katella Avenue	Signal	AM	0.396	A	0.405	A	0.009	No
			PM	0.521	A	0.591	A	0.070	No
15	Walker Street/Katella Avenue	Signal	AM	0.658	B	0.666	B	0.008	No
			PM	0.687	B	0.691	B	0.004	No
16	Valley View Street/Katella Avenue	Signal	AM	0.723	C	0.730	C	0.007	No
			PM	0.749	C	0.758	C	0.009	No
17	Valley View Street/Orangewood Avenue	Signal	AM	0.784	C	0.786	C	0.002	No
			PM	0.826	D	0.832	D	0.006	No
18	Lexington Drive/Farquhar Avenue	AWSC	AM	8.8	A	8.8	A	0.0	No
			PM	9.7	A	9.7	A	0.0	No
19	Los Alamitos Boulevard/ Farquhar Avenue	Signal	AM	0.614	B	0.615	B	0.001	No
			PM	0.618	B	0.621	B	0.003	No

ICU = Intersection Capacity Utilization

Delay is reported in seconds.

LOS = level of service

AWSC = all-way stop control

## Opening Year Conditions

A future, near-term scenario corresponding to the project opening year (2021) was analyzed. To develop the project opening year volumes, an ambient growth rate of 0.5 percent per year (1.5 percent for 3 years) was applied to existing counts. Application of a 0.5 percent per year growth rate to the existing traffic volumes is considered conservative and would account for any additional future development beyond that described below in the project vicinity. This growth rate was referenced from other traffic studies prepared in Cypress.

In addition to the ambient growth, cumulative project traffic volumes from approved but not built and/pending development projects in the vicinity of the project site were included in the Project Opening Year conditions. Information regarding cumulative projects was requested from the cities of Cypress and Los Alamitos and from other surrounding cities, including the cities of Garden Grove, Stanton, La Palma, Buena Park, and Hawaiian Gardens. Trip generation estimates for the cumulative projects were obtained from the available approved traffic studies or from calculations based on the ITE trip generation rates. Table D summarizes the list of cumulative projects and their trip generation estimates. Trip distribution for the cumulative projects is based on the available approved traffic studies or has been estimated by LSA. Figure 9 shows the locations of the cumulative projects. Figure 10 shows the cumulative project trips at the study intersections.

The ambient growth and cumulative project trips at the study intersections were added to the existing peak-hour volumes to develop the Project Opening Year conditions. Figure 11 shows the Project Opening Year peak-hour volumes. Table E summarizes the results of the Project Opening Year LOS analysis for the study area intersections. The Project Opening Year ICU and HCM worksheets for signalized and unsignalized intersections are contained in Appendices C and D, respectively. As shown in Table E, all study area intersections are forecast to operate at satisfactory LOS during both peak hours in the Project Opening Year conditions.



Table D: Summary of Cumulative Projects

Project No.	Project Name	Project Address	Project Description	ADT	AM			PM		
					In	Out	Total	In	Out	Total
City of Cypress										
1	Barton Place Mixed-Use (Ovation) <sup>1</sup>	Northeast corner of Katella and Enterprise	244 du Senior Housing 35,600 sf Retail 11,376 sf Restaurant	1,954	65	60	125	61	48	109
2	SRM Cypress (Westmont)	Northeast corner of Katella and Enterprise	129 bed Assisted Living 13,700 sf Retail	852	23	14	37	38	48	86
3	Bonanni Development	4620 Lincoln Ave	67 du Apartments	364	6	18	24	18	11	29
4	Sports Park	Southeast corner of Lexington and Cerritos	9 acre Soccer Field (6 Soccer Fields)	428	4	2	6	65	34	99
City of Los Alamitos										
5	Residential Development <sup>2</sup>	10845 Cherry St	1 Duplex	15	0	1	1	1	0	1
6	Los Alamitos Luxury Apartments <sup>3</sup>	3342 Cerritos Ave	107 du Apartments	783	11	38	49	38	22	60
7	Residential Development	10922 Walnut St	4 du Apartments	29	0	1	1	1	1	2
8	Residential Development	3751 Farquhar Ave	4 du Condominiums	29	0	1	1	1	1	2
9	Cottonwood Church Site Residential Development <sup>4</sup>	3311 Sausalito St	50 du Condominiums	291	4	18	22	17	9	26
10	Residential Development	4071 Farquhar Ave	5 du Condominiums	37	1	2	3	2	1	3
11	Residential Development	4061 Farquhar Ave	5 du Condominiums	37	1	2	3	2	1	3
12	Residential Development <sup>2</sup>	10700 Regan St	1 Duplex	15	0	1	1	1	0	1
13	Commercial Development	5250 Katella Ave	2,400 sf Coffee Shop 2,800 sf Restaurant	2,283	124	118	242	69	62	131
14	Hotel Development	10650 Los Alamitos Blvd	107 room Hotel	895	30	20	50	33	31	64
City of Garden Grove										
15	Mixed Use Development	12101 - 12111 Valley View St	4,241 sf Automatic Car Wash 1,870 sf Drive-through Restaurant 2,700 sf Sit-down Restaurant 2,846 sf Movie Theater	1,707	53	49	102	95	70	165
City of Stanton										
16	Commercial Development	10580 - 10600 Beach Blvd	4,100 sf Retail 850 sf Warehouse	156	2	1	3	8	8	16
17	Residential Development	7320 Katella Ave	6 unit Townhouses	44	1	2	3	2	1	3
Total				9,919	325	348	673	452	348	800

note:

<sup>1</sup> At the time of preparation of this traffic study, 40% of the project was completed, and 60% was incomplete. Trips show the incomplete part of the total project trips (60%).<sup>2</sup> Trips for duplex were estimated as 2 apartment units.<sup>3</sup> Trip generation referenced from the Los Alamitos Luxury Apartments Initial Study (2018).<sup>4</sup> Trip generation referenced from the Cottonwood Church Site Residential Development Traffic Impact Study (2017).

ADT = average daily trips

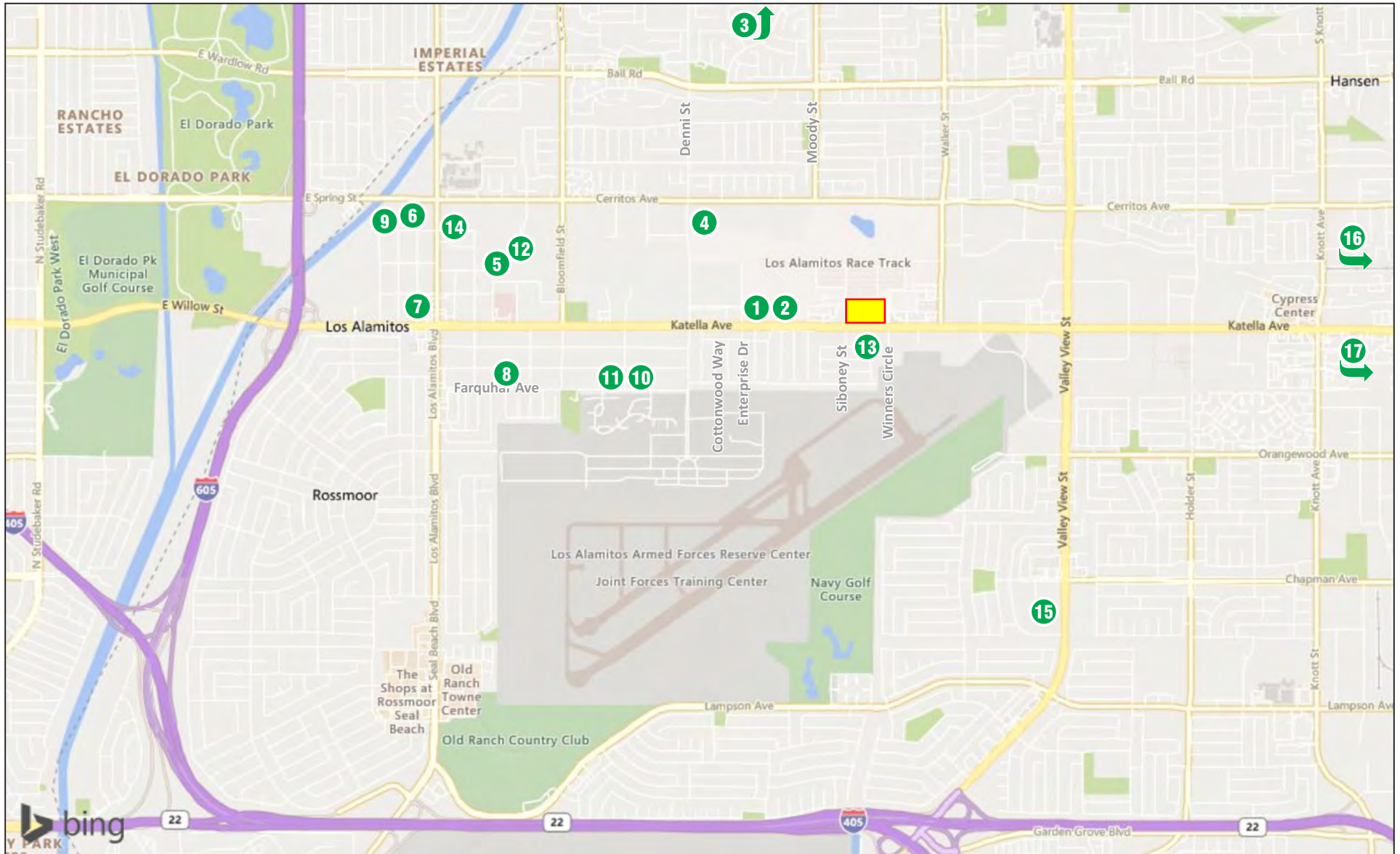


FIGURE 9

LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

- LEGEND
- Project Site
  - Cumulative Projects

Cypress City Center  
Locations of Cumulative Projects



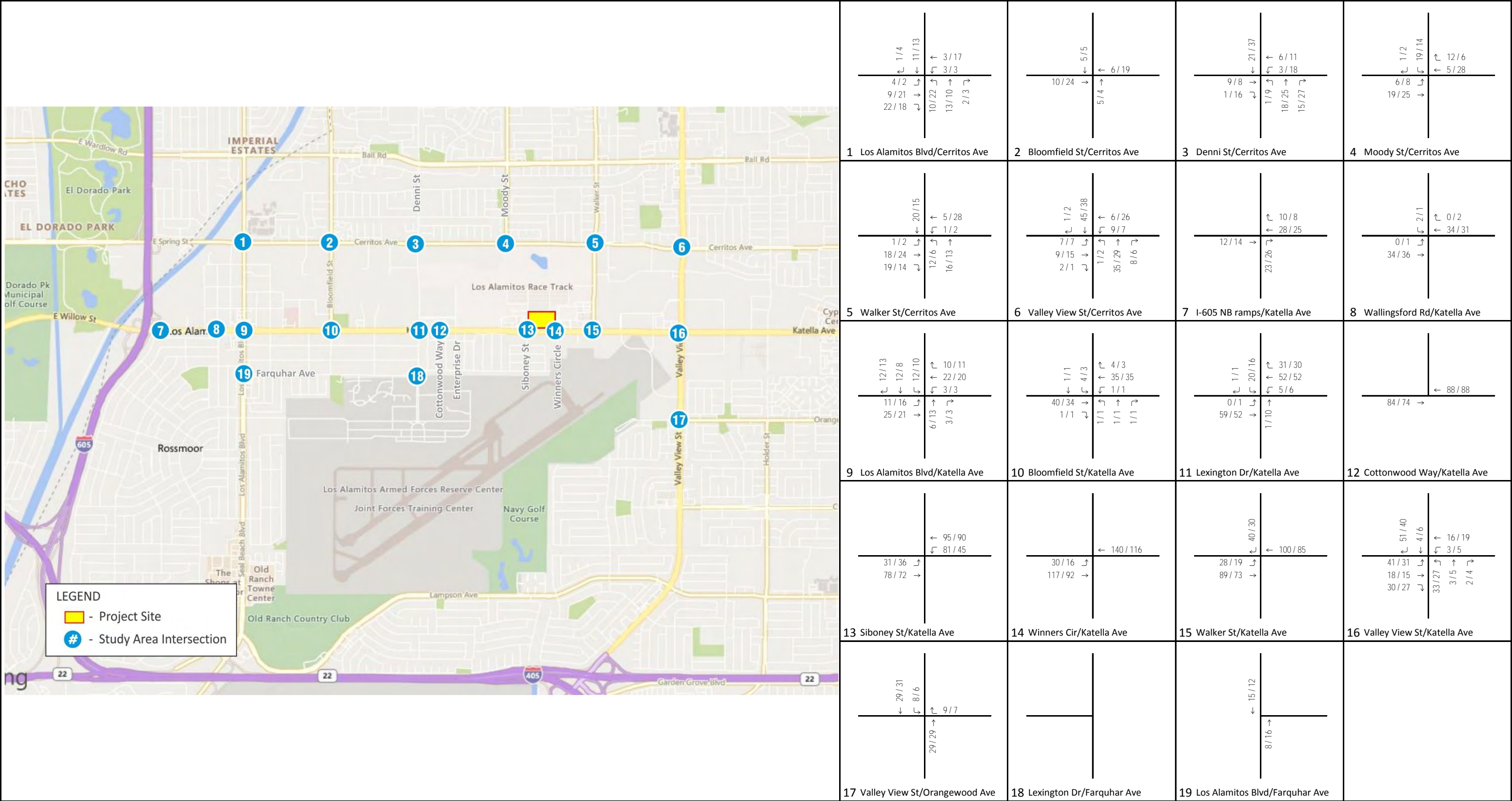


FIGURE 10

LSA  
N  
LEGEND  
xxx / yyy  
AM / PM Volume

Cypress City Center  
Cumulative Projects Peak-Hour Volumes



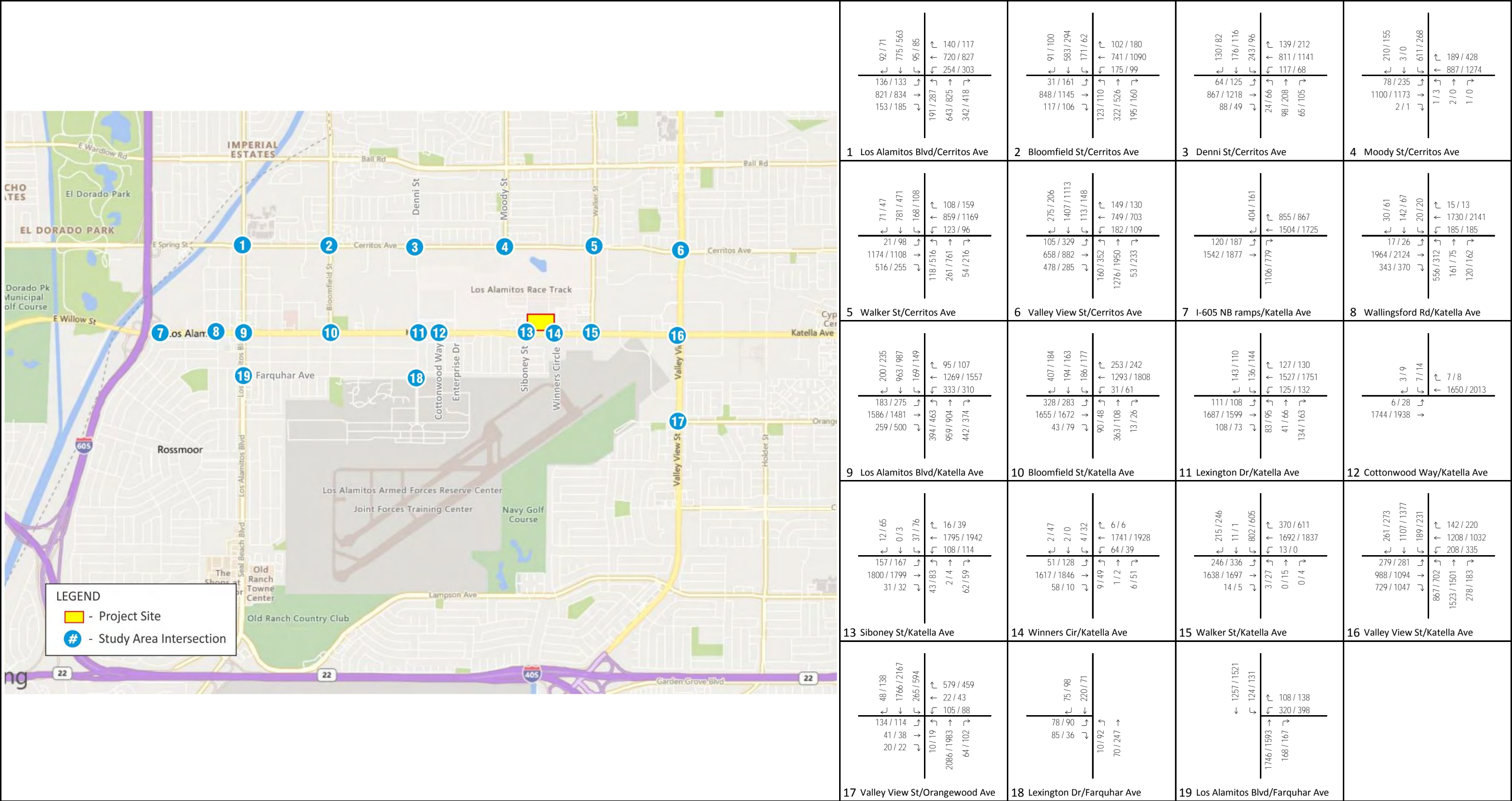


FIGURE 11

LSA

↑

N

LEGEND

xxx / yyy

AM / PM Volume

Cypress City Center  
Opening Year Peak-Hour Volumes



**Table E: Opening Year Level of Service Summary**

Intersection		Control	Peak Hour	Opening Year	
				ICU/Delay	LOS
1	Los Alamitos Boulevard/Cerritos Avenue	Signal	AM	0.725	C
			PM	0.770	C
2	Bloomfield Street/Cerritos Avenue	Signal	AM	0.707	C
			PM	0.757	C
3	Denni Street/Cerritos Avenue	Signal	AM	0.626	B
			PM	0.812	D
4	Moody Street/Cerritos Avenue	Signal	AM	0.594	A
			PM	0.782	C
5	Walker Street/Cerritos Avenue	Signal	AM	0.711	C
			PM	0.755	C
6	Valley View Street/Cerritos Avenue	Signal	AM	0.755	C
			PM	0.861	D
7	I-605 northbound ramps/Katella Avenue	Signal	AM	0.503	A
			PM	0.602	B
8	Wallingsford Road – Walnut Street/Katella Avenue	Signal	AM	0.828	D
			PM	0.726	C
9	Los Alamitos Boulevard/Katella Avenue	Signal	AM	0.764	C
			PM	0.766	C
10	Bloomfield Street/Katella Avenue	Signal	AM	0.838	D
			PM	0.762	C
11	Lexington Drive/Katella Avenue	Signal	AM	0.613	B
			PM	0.623	B
12	Cottonwood Way/Katella Avenue	Signal	AM	0.392	A
			PM	0.470	A
13	Siboney Street/Katella Avenue	Signal	AM	0.520	A
			PM	0.556	A
14	Winners Circle/Katella Avenue	Signal	AM	0.424	A
			PM	0.560	A
15	Walker Street/Katella Avenue	Signal	AM	0.695	B
			PM	0.703	C
16	Valley View Street/Katella Avenue	Signal	AM	0.756	C
			PM	0.771	C
17	Valley View Street/Orangewood Avenue	Signal	AM	0.805	D
			PM	0.848	D
18	Lexington Drive/Farquhar Avenue	AWSC	AM	8.8	A
			PM	9.8	A
19	Los Alamitos Boulevard/ Farquhar Avenue	Signal	AM	0.624	B
			PM	0.630	B

ICU = Intersection Capacity Utilization

Delay is reported in seconds.

LOS = level of service

AWSC = all-way stop control

### Opening Year Plus Project Condition

To determine the Opening Year Plus Project conditions, the net traffic generated by the project was added to the Opening Year traffic volumes at the study area intersections. Figure 12 shows the resulting Opening Year Plus Project peak-hour traffic volumes.

Table F summarizes the results of the Opening Year Plus Project peak-hour LOS analysis for the study area intersections. The Opening Year Plus Project ICU and HCM worksheets for signalized and unsignalized intersections are contained in Appendices C and D, respectively. As shown in Table F, with the addition of the project, all study area intersections are forecast to operate at satisfactory LOS during both peak hours. Therefore, a significant project impact is not expected to occur at any study area intersection in the Opening Year (2021) conditions.

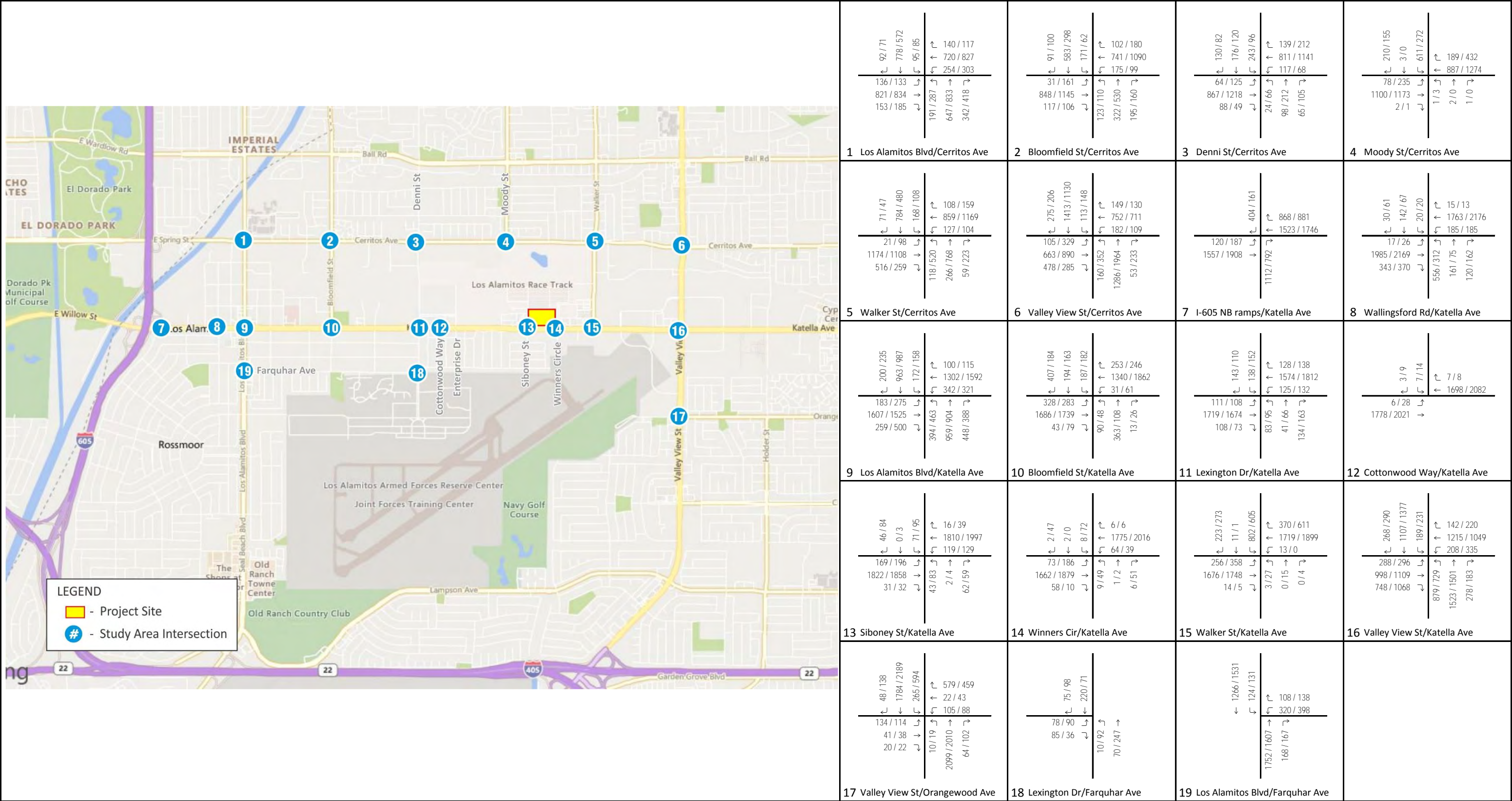


FIGURE 12

LSA

↑

N

LEGEND

xxx / yyy

AM / PM Volume

Cypress City Center  
Opening Year plus Project Peak-Hour Volumes

**Table F: Opening Year Plus Project  
Intersection Level of Service Summary**

	Intersection	Control	Peak Hour	Opening Year		Opening Year Plus Project		Project Impact	
				ICU/Delay	LOS	ICU/Delay	LOS	Δ ICU/Delay	Yes/No
1	Los Alamitos Boulevard/Cerritos Avenue	Signal	AM	0.725	C	0.726	C	0.001	No
			PM	0.770	C	0.770	C	0.000	No
2	Bloomfield Street/Cerritos Avenue	Signal	AM	0.707	C	0.707	C	0.000	No
			PM	0.757	C	0.758	C	0.001	No
3	Denni Street/Cerritos Avenue	Signal	AM	0.626	B	0.626	B	0.000	No
			PM	0.812	D	0.817	D	0.005	No
4	Moody Street/Cerritos Avenue	Signal	AM	0.594	A	0.594	A	0.000	No
			PM	0.782	C	0.784	C	0.002	No
5	Walker Street/Cerritos Avenue	Signal	AM	0.711	C	0.714	C	0.003	No
			PM	0.755	C	0.759	C	0.004	No
6	Valley View Street/Cerritos Avenue	Signal	AM	0.755	C	0.756	C	0.001	No
			PM	0.861	D	0.866	D	0.005	No
7	I-605 northbound ramps/Katella Avenue	Signal	AM	0.503	A	0.508	A	0.005	No
			PM	0.602	B	0.611	B	0.009	No
8	Wallingsford Road – Walnut Street/Katella Avenue	Signal	AM	0.828	D	0.831	D	0.003	No
			PM	0.726	C	0.733	C	0.007	No
9	Los Alamitos Boulevard/Katella Avenue	Signal	AM	0.764	C	0.770	C	0.006	No
			PM	0.766	C	0.773	C	0.007	No
10	Bloomfield Street/Katella Avenue	Signal	AM	0.838	D	0.848	D	0.010	No
			PM	0.762	C	0.776	C	0.014	No
11	Lexington Drive/Katella Avenue	Signal	AM	0.613	B	0.620	B	0.007	No
			PM	0.623	B	0.630	B	0.007	No
12	Cottonwood Way/Katella Avenue	Signal	AM	0.392	A	0.399	A	0.007	No
			PM	0.470	A	0.484	A	0.014	No
13	Siboney Street/Katella Avenue	Signal	AM	0.520	A	0.543	A	0.023	No
			PM	0.556	A	0.584	A	0.028	No
14	Winners Circle/Katella Avenue	Signal	AM	0.424	A	0.450	A	0.026	No
			PM	0.560	A	0.629	B	0.069	No
15	Walker Street/Katella Avenue	Signal	AM	0.695	B	0.703	C	0.008	No
			PM	0.703	C	0.722	C	0.019	No
16	Valley View Street/Katella Avenue	Signal	AM	0.756	C	0.762	C	0.006	No
			PM	0.771	C	0.779	C	0.008	No
17	Valley View Street/Orangewood Avenue	Signal	AM	0.805	D	0.808	D	0.003	No
			PM	0.848	D	0.853	D	0.005	No
18	Lexington Drive/Farquhar Avenue	AWSC	AM	8.8	A	8.8	A	0.0	No
			PM	9.8	A	9.8	A	0.0	No
19	Los Alamitos Boulevard/ Farquhar Avenue	Signal	AM	0.624	B	0.625	B	0.001	No
			PM	0.630	B	0.633	B	0.003	No

ICU = Intersection Capacity Utilization

Delay is reported in seconds.

LOS = level of service

AWSC = all-way stop control

## ANALYSIS OF STATE HIGHWAY FACILITIES

### Intersection Analysis

Intersections on State highway facilities (I-605 northbound ramps/Katella Avenue) is also analyzed using the HCM methodology, as required by the *Caltrans Guide for the Preparation of Traffic Impact Studies* (December 2002). A description of each LOS based on delay according to the HCM, 6<sup>th</sup> Edition (Transportation Resources Board 2016) is provided below.

Level of Service	Signalized Intersection Delay (seconds)	Description
A	≤10.0	EXCELLENT—No vehicle waits longer than one red light and no approach phase is fully used.
B	>10.0 and ≤20.0	VERY GOOD—An occasional approach phase is fully utilized; drivers begin to feel somewhat restricted within groups of vehicles.
C	>20.0 and ≤35.0	GOOD—Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>35.0 and ≤55.0	FAIR—Delays may be substantial during portions of the rush hours, but enough lower-volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>55.0 and ≤80.0	POOR—Represents the most vehicles that the intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>80.0	FAILURE—Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Delays occur, with increasing queue lengths.

Source: *Highway Capacity Manual* (Transportation Research Board 2016).

### Intersection Significance Threshold

The *Caltrans Guide for the Preparation of Traffic Impact Studies* does not have published criteria for determination of significant impacts. Caltrans states that it endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities and to maintain the existing LOS in cases where a facility is operating at less than the target LOS. For this TIA, LOS C is considered the target LOS standard and will be utilized to assess the project's impacts at the Caltrans study intersection. A significant project impact at a Caltrans intersection would occur if the addition of the project trips causes the peak-hour LOS to deteriorate from an acceptable LOS (LOS A, B, or C) to an unacceptable LOS (LOS D, E, or F), or causes an intersection that is already operating at an unacceptable LOS to deteriorate to a worse LOS.

### Analysis of Peak-Hour Operations on State Highway Facilities

The intersection of I-605 northbound ramps/Katella Avenue was analyzed for each of the project conditions using the HCM methodology. Table G summarizes the results of the LOS analysis for all conditions. The intersection of I-605 northbound ramps/Katella Avenue currently operates at LOS A during both peak hours and is forecast to continue to do so with the addition of the project during the Existing Plus Project and Opening Year Plus Project conditions.



**Table G: Summary of Intersection Operation, I-605  
Northbound Ramps/Katella Avenue**

Scenario	Peak Hour	Delay	LOS
Existing	AM	2.8	A
	PM	4.1	A
Existing Plus Project Conditions	AM	2.9	A
	PM	4.1	A
Project Opening Year	AM	3.0	A
	PM	4.2	A
Opening Year Plus Project	AM	4.0	A
	PM	4.3	A

I-605 = Interstate 605  
LOS = level of service

## ORANGE COUNTY CONGESTION MANAGEMENT PROGRAM

Figure 13 illustrates the County of Orange CMP Highway System. As shown on Figure 13, the CMP Highway System includes two roadway arterials in the project area: Valley View Street and Katella Avenue. Also, the CMP Highway System includes two intersections within the study area: Valley View Street/Katella Avenue and I-605 northbound ramps/Katella Avenue. These two intersections are both study intersections within the project study area.

Based on the CMP requirements, a TIA is required for CMP purposes if a project would generate 2,400 or more ADT. For projects that would directly access a CMP Highway System roadway (i.e., Katella Avenue), a reduced threshold of 1,600 ADT is applied. The project is forecast to generate 4,978 ADT and would access directly onto Katella Avenue. As such, a TIA is required for CMP purposes for the project.

Based on the County of Orange CMP requirements, the study area of the project should extend far enough to cover any CMP roadway segment on which the project ADT would add 3 percent or more of the CMP roadway segment's LOS E capacity. According to the *Guidance for Administration of the Orange County Master Plan of Arterial Highways* (2017), the LOS E capacity for a six-lane major roadway (i.e., Katella Avenue and Valley View Street) is 56,300 vehicles per day.

Figure 14 demonstrates the project forecast ADT on Katella Avenue and Valley View Street and their capacities at LOS E. The project's ADT on Katella Avenue exceeds the 3 percent threshold on Katella Avenue immediately east and west of the project site. However, the project's ADT is less than the 3 percent threshold on Katella Avenue and Valley View Street at the study area boundaries based on the distribution of project trips throughout the study area.

Therefore, the study area for the project is sufficiently sized to cover all roadway segments adding the 3 percent threshold of the project's ADT to the CMP roadway segment's LOS E capacity. As such, the traffic analysis satisfies the CMP requirements. Furthermore, the project is not expected to result in a significant traffic impact at any CMP intersection. Therefore, this TIA complies with the CMP requirements.

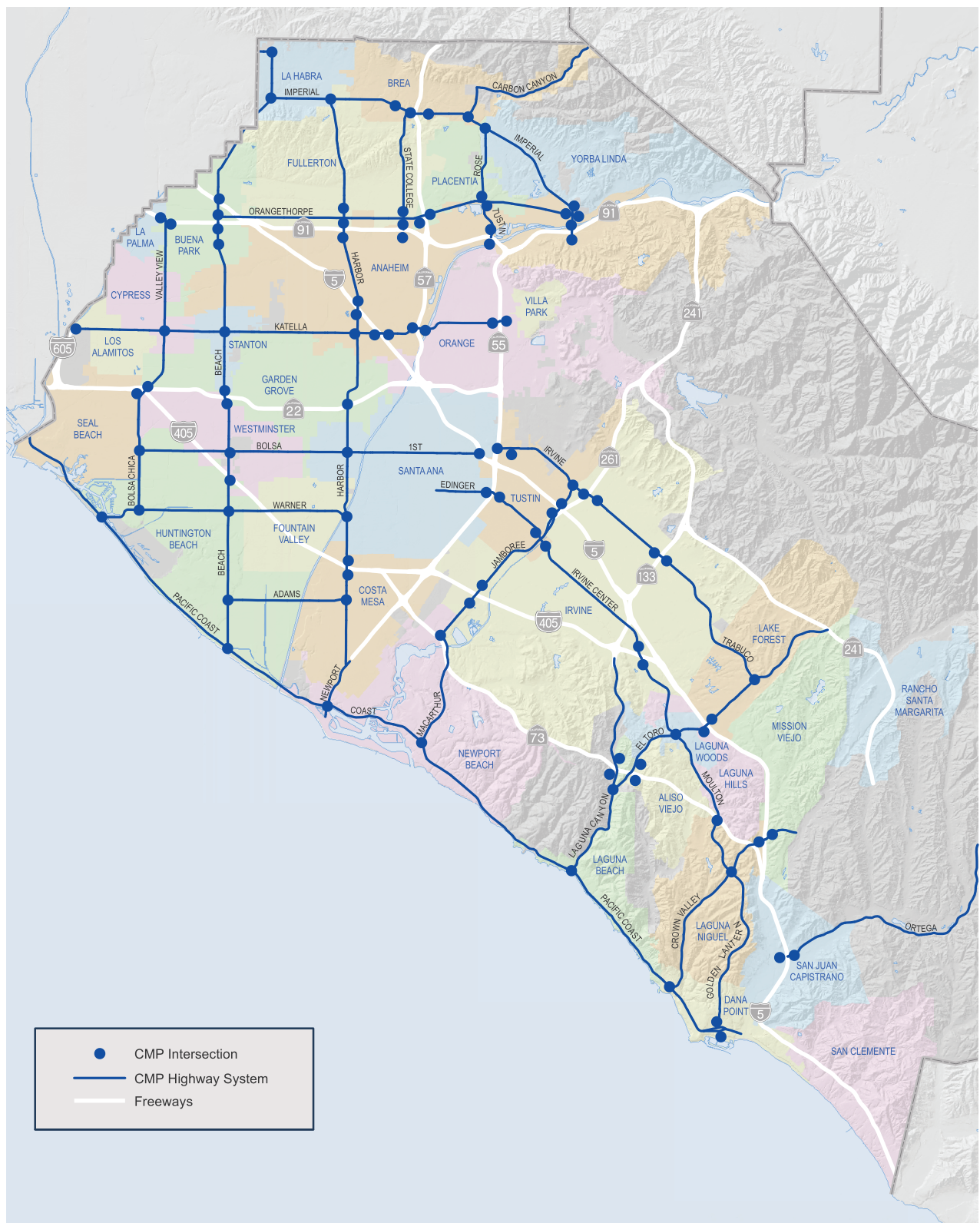
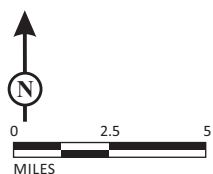


FIGURE 13

LSA



SOURCE: OCTA

I:\SHO1902\G\CMP Highway System.cdr (7/17/2019)

Cypress City Center  
County of Orange CMP Highway System



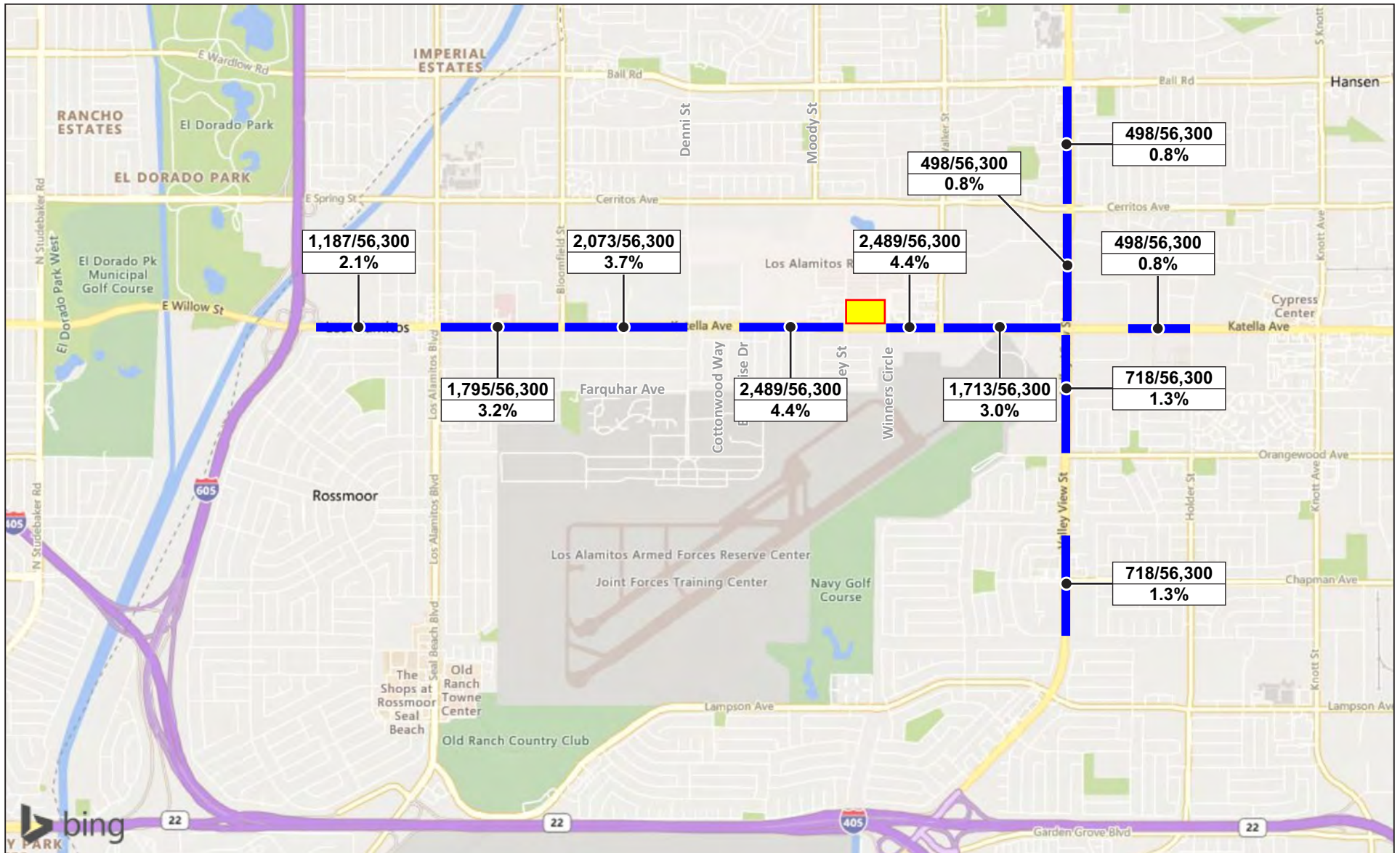


FIGURE 14

LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

LEGEND

- Project Site

**XX/YYY** - Project ADT/LOS E Capacity

**ZZ%** - Project Percentage of LOS E Capacity

Cypress City Center  
CMP Study Area Determination



## CONCLUSIONS

Based on the results of this analysis, implementation of the project is not expected to result in any significant project-related impacts to the surrounding roadway system. The evaluation of the study area intersections shows that the addition of project traffic is not expected to create significant adverse impacts in the existing or build out conditions. The intersection of I-605 northbound ramps/Katella Avenue, which is a Caltrans facility, would continue to operate at LOS A during the peak hours under both Existing Plus Project and Opening Year Plus Project conditions.

The project is not expected to result in a significant impact at any CMP intersection, and this TIA complies with the CMP requirements.

---

## REFERENCES

California Department of Transportation (Caltrans). 2002. *Guide for the Preparation of Traffic Impact Studies*. December.

City of Cypress. 2000. General Plan Circulation Element.

County of Orange. 2017. Orange County Congestion Management Program.

Transportation Resources Board. 2016. Highway Capacity Manual, 6<sup>th</sup> Edition.

---

## **APPENDIX A**

### **SCOPE OF WORK**



CARLSBAD  
FRESNO  
IRVINE  
LOS ANGELES  
PALM SPRINGS  
POINT RICHMOND  
RIVERSIDE  
ROSEVILLE  
SAN LUIS OBISPO

December 5, 2019

Dave Roseman  
City of Cypress, Traffic Engineer  
5275 Orange Avenue  
Cypress, CA 90630

Subject: Cypress City Center Mixed-Use Development – Traffic Impact Analysis Scope of Work

Dear Mr. Roseman:

LSA has prepared the following Traffic Impact Analysis (TIA) Scope of Work for the Cypress City Center mixed-use project (project). The project proposes to construct retail, residential, hotel and theater uses on a 13 acre vacant parcel in the City of Cypress. The project site is generally bounded by Katella Avenue to the south, Siboney Street to the west, Winners Circle to the east and the Los Alamitos Race Track to the north. Figure 1 (attached) shows the project location and proposed study area intersections. Access would be provided via Siboney Street (and existing traffic signal at Siboney/Katella), Winners Circle (and existing traffic signal at Winners Circle/Katella), and a right turn in/out only driveway directly on Katella Avenue.

This scope of work has been developed based on information from traffic studies prepared within close proximity to the site and discussions with Shea Properties and City staff.

### **Trip Generation**

LSA identified the trip generation of the project based on trip rates within the latest Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). Trip reduction credits for internal capture and/or pass-by were identified based on the latest version of the ITE Handbook (3rd Edition). Internal capture was estimated using the NCHRP 684 Trip Capture Estimation Tool, as referenced in the ITE Handbook. The project trip generation is shown in Table A (attached). The NCHRP 684 Trip Capture Estimation Tool worksheets for a.m. and p.m. peak hours are also attached.

As shown in Table A, the project of 20,800 sf of retail use, 251-dwelling unit residential use, 120-room hotel use, and 10-screen movie theater use would generate 4,978 average daily trips, 164 a.m. peak-hour trips (68 in and 96 out), and 323 p.m. peak-hour trips (176 in and 147 out).

### **Trip Distribution**

Project-related trips were distributed through the study area intersections and internal roadways based on expected travel patterns between the project site and local and regional destinations. LSA evaluated the previously approved project for the project site and other local projects within the study area to assist in the overall trip distribution. A separate trip distribution was prepared for the residential component (apartments and hotel) and the retail component (retail and theater use).

Figures 2 and 3 show the project trip distribution for the residential and retail components, respectively.

### Existing Traffic Counts

The study area is comprised of 19 intersections, as shown in Figure 1. LSA has received intersection turn-movement counts (October 2018) from the City for 9 locations. LSA will obtain turn-movement counts for the remaining 10 intersections in the a.m. peak hour (7:00 to 9:00 a.m.) and p.m. peak hour (4:00 to 6:00 p.m.). LSA will also collect geometric and traffic control data at the study area intersections.

### Methodology

The TIA will need to examine the following development scenarios:

1. Existing
2. Existing Plus Project
3. Project Opening Year (2021)
4. Project Opening Year Plus Project

A future, near-term scenario corresponding to the project opening year (2021) will be analyzed. To develop the project opening year volumes, an ambient growth rate of 0.5 percent per year will be applied to existing counts. This growth rate was referenced from other traffic studies prepared in the City. LSA will confirm with the City the ambient growth rate for purposes of this analysis. To determine cumulative traffic conditions, LSA will request from the City Planning Departments for both Cypress and Los Alamitos a current list of approved and/or pending (committed) projects up to the project opening year. LSA will also request the TIAs and/or environmental documents for these projects to develop cumulative baseline traffic volumes. If these documents are not available, LSA staff will assign approved/pending project trips to the study area intersections utilizing the “manual method” of trip assignment.

LSA will analyze the existing a.m. and p.m. peak-hour traffic conditions levels of service (LOS) for the study area intersections using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the Highway Capacity Manual (HCM) methodology for unsignalized intersections. The ICU calculations assume a per-lane capacity of 1,700 vehicles per hour (vph) with a clearance interval of 0.05. The appropriate Caltrans analysis methodology will be applied to study area freeway ramp intersections. Existing transit, bicycle, and pedestrian infrastructure and service will also be described and included in the existing setting analysis.

The City of Cypress and the City of Los Alamitos LOS standard for intersection operation is LOS D, except at intersections along Congestion Management Program (CMP) Highway System (i.e., Katella Avenue and Valley View Street), where LOS E is acceptable. Based on the City of Cypress and City of Los Alamitos standards, a project traffic impact would be considered to be significant if the project causes an intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS, or the

intersection is already operating at an unacceptable LOS and adds 0.01 or more to the peak hour ICU.

LSA will analyze the existing plus project traffic conditions at the study area intersections to determine the ability of the circulation system to provide acceptable LOS when the project is added to existing conditions. The resulting existing plus project traffic volumes will be examined to determine peak-hour intersection LOS. Project impacts will be identified assuming existing roadway and intersection geometrics.

LSA will analyze the project opening year plus project traffic conditions at the study area intersections to determine the ability of the circulation system to provide acceptable LOS when the project is added to near-term conditions. The resulting forecast traffic volumes will be examined to determine peak-hour intersection LOS.

For all of the conditions, project impacts will be based on LOS significance criteria of the City of Cypress (for Cypress intersections) and the City of Los Alamitos (for Los Alamitos intersections).

LSA will review project volumes at the primary access locations to determine the adequacy of the interface with the arterial street system.

A CMP-level analysis is required should the project generate 2,400 or more ADT, or greater than 1,600 ADT directly onto the CMP Highway System (i.e., Katella Avenue and Valley View Street). LSA will evaluate the requirements of the CMP to confirm the study area analyzed in this traffic study. Two CMP monitoring locations are included within the study area (I-605 NB ramps/Katella and Valley View/Katella). As such, these locations will be evaluated against the LOS criteria set forth in the CMP to determine whether the project has any CMP impacts.

Upon the City's approval of this TIA Scope of Work, LSA will proceed with the TIA.

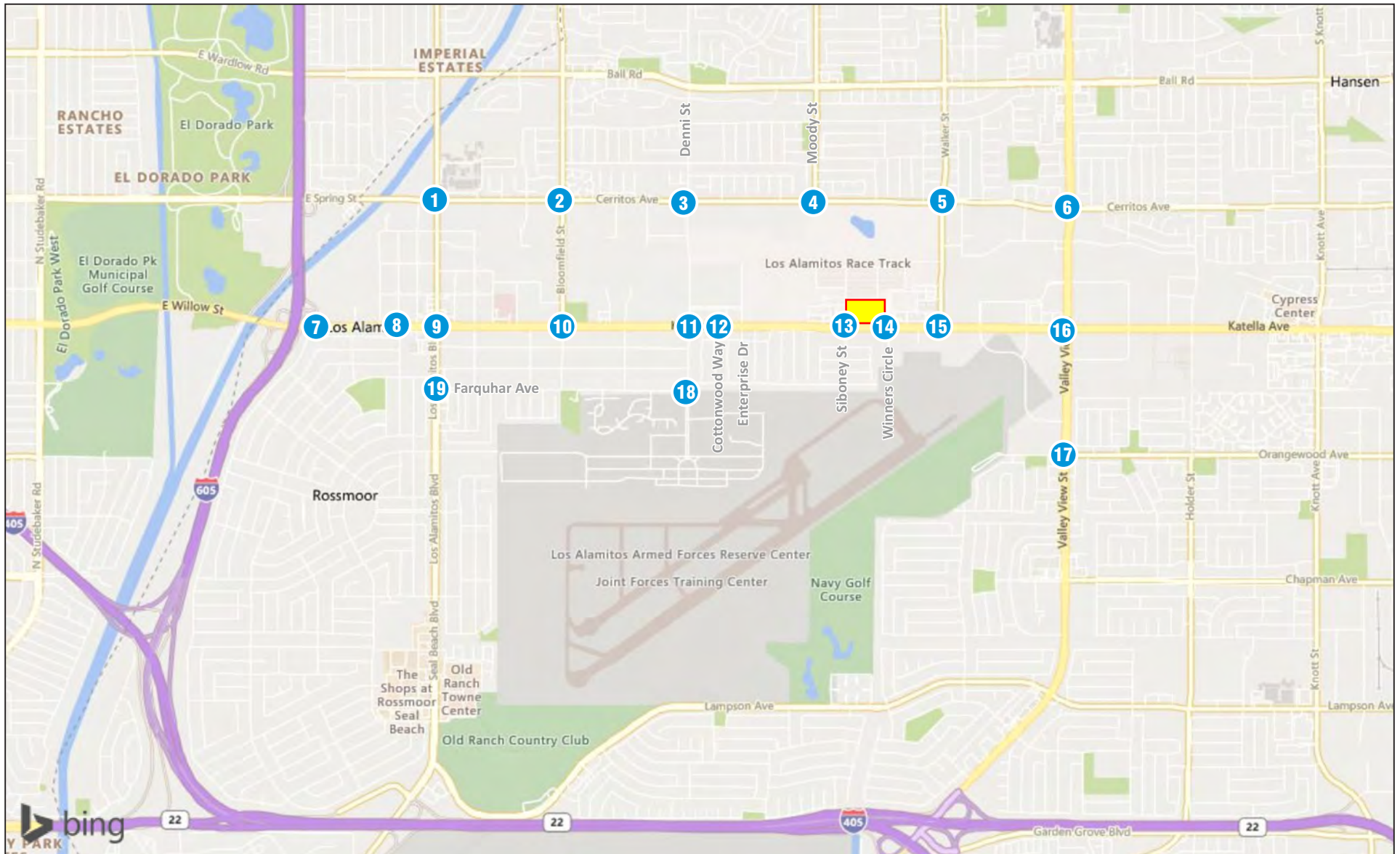
Sincerely,

**LSA Associates, Inc.**



Ken Wilhelm  
Principal

Attachments: Figure 1: Project Location and Study Area Intersections  
Table A: Project Trip Generation  
NCHRP 684 Trip Capture Estimation Tool – a.m. peak hour  
NCHRP 684 Trip Capture Estimation Tool – p.m. peak hour  
Figure 2: Project Trip Distribution – Residential  
Figure 3: Project Trip Distribution – Retail



LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

#### LEGEND

- Project Site

- Study Area Intersection

FIGURE 1

*Cypress City Center*  
Project Location and  
Study Area Intersections

**Table A: Project Trip Generation Summary**

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates <sup>1</sup>									
Shopping Center		TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Multifamily Housing (Mid-Rise)		du	5.44	0.09	0.27	0.36	0.27	0.17	0.44
Hotel		rooms	8.36	0.28	0.19	0.47	0.31	0.29	0.60
Multiplex Movie Theater		screens	220.00	-	-	-	7.00	6.73	13.73
Project Trip Generation									
Shopping Center	20.800	TSF	785	12	8	20	38	41	79
Multifamily Housing (Mid-Rise)	251	du	1,365	23	67	90	68	42	110
Hotel	120	rooms	1,003	34	22	56	37	35	72
Multiplex Movie Theater	10	screens	2,200	0	0	0	70	67	137
Gross Trip Generation			5,353	69	97	166	213	185	398
Internal Capture Reduction <sup>2</sup>			(375)	(1)	(1)	(2)	(26)	(26)	(52)
Shopping Center Pass-By Trip Reduction (PM-34%) <sup>3</sup>			0	0	0	0	(11)	(12)	(23)
Net Trip Generation			4,978	68	96	164	176	147	323

<sup>1</sup> Trip rates referenced from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 10th Edition (2017).

Land Use Code 820 - Shopping Center

Land Use Code 221 - Multifamily Housing (Mid-Rise)

Land Use Code 310 - Hotel

Land Use Code 445 - Multiplex Movie Theater has been used for PM trip rates. Multiplex Movie Theater rate was not available for daily. Land Use Code 444 - Movie Theater has been used for daily rate. The movie theater is assumed to be closed in the AM peak hour.

<sup>2</sup> Internal capture referenced from NCHRP 684 Internal Trip Capture Estimation Tool (AM 1%, PM 13%). Internal capture for daily is the average of internal capture for AM and PM (7%).

<sup>3</sup> Pass-by percentages are based on the ITE *Trip Generation* Handbook, 3rd Edition.

ADT = average daily trips

TSF = thousand square feet

du = dwelling units



NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Shea Cypress			Organization:	
Project Location:				Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				20	12	8
Restaurant				0		
Cinema/Entertainment				0		
Residential				90	23	67
Hotel				56	34	22
All Other Land Uses <sup>2</sup>				0		
				166	69	97

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	166	69	97
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips <sup>5</sup>	164	68	96
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	1%
Hotel	0%	0%

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Shea Cypress		Organization:		
Project Location:			Performed By:		
Scenario Description:			Date:		
Analysis Year:			Checked By:		
Analysis Period:	PM Street Peak Hour		Date:		

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)							
Land Use	Development Data (For Information Only)				Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units		Total	Entering	Exiting
Office					0		
Retail					79	38	41
Restaurant					0		
Cinema/Entertainment					137	70	67
Residential					110	68	42
Hotel					72	37	35
All Other Land Uses <sup>2</sup>					0		
					398	213	185

Table 2-P: Mode Split and Vehicle Occupancy Estimates							
Land Use	Entering Trips				Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized		Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office							
Retail							
Restaurant							
Cinema/Entertainment							
Residential							
Hotel							
All Other Land Uses <sup>2</sup>							

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	2	11	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	2	0		3	0
Residential	0	4	0	0		1
Hotel	0	1	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	398	213	185
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips <sup>5</sup>	346	187	159
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	18%	37%
Restaurant	N/A	N/A
Cinema/Entertainment	3%	7%
Residential	21%	12%
Hotel	8%	3%

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

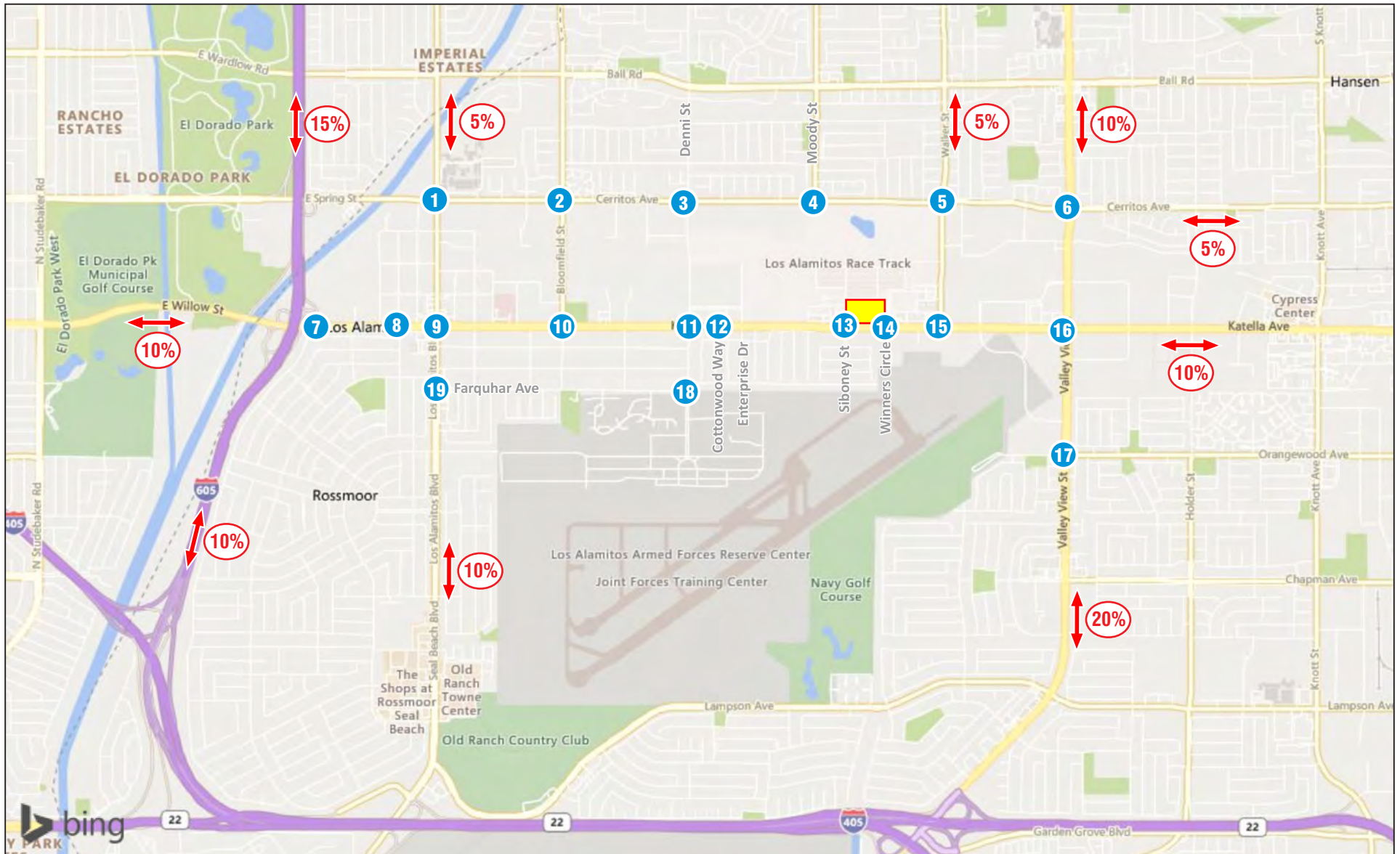
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1



LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

LEGEND

- Project Site

# - Study Area Intersection

XX% - Project Trip Distribution Percentage

FIGURE 2

*Cypress City Center*

Project Trip Distribution - Residential



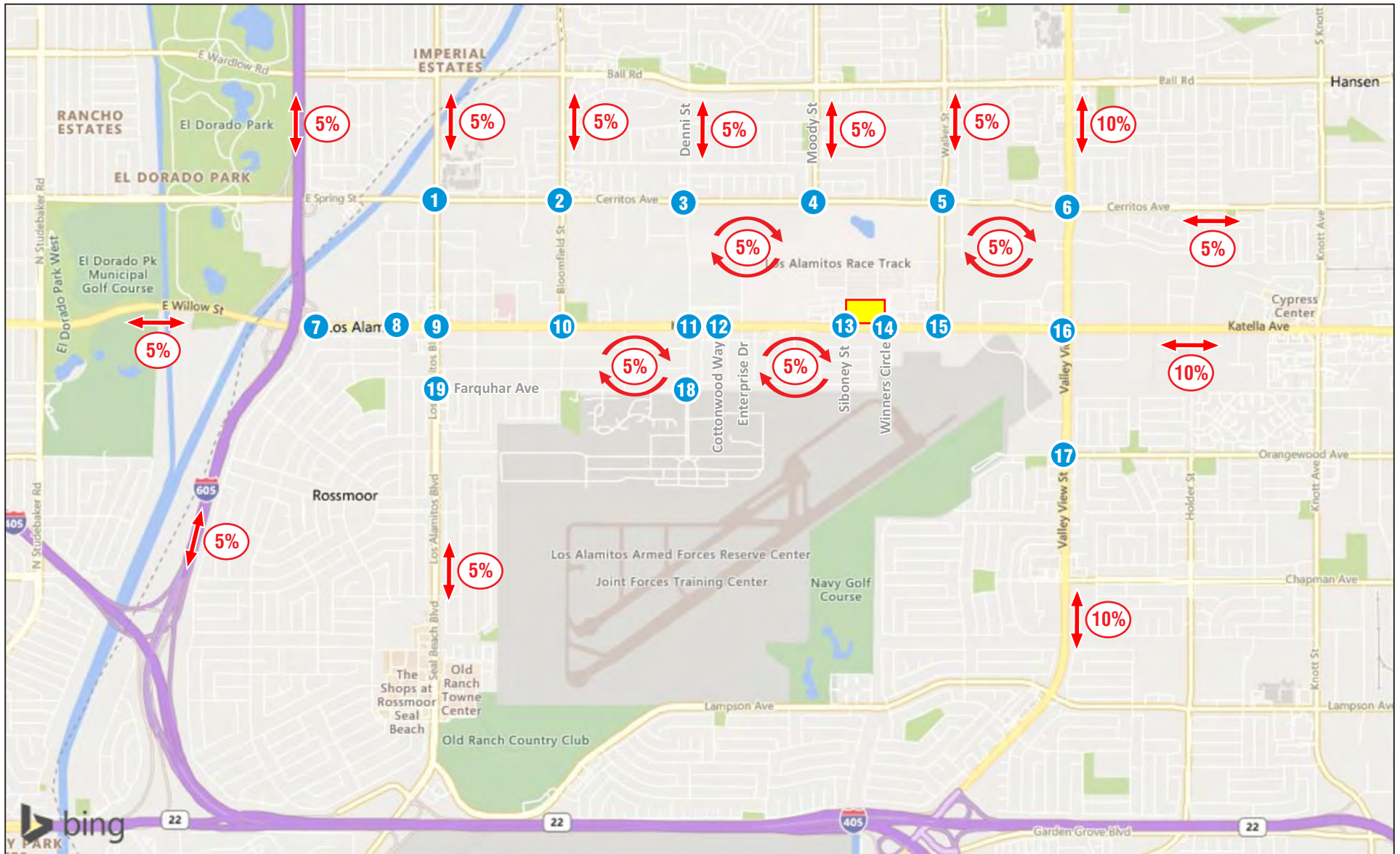


FIGURE 3

LSA



0 1500 3000  
FEET

SOURCE: Bing Maps

LEGEND

- Project Site

# - Study Area Intersection

XX% - Project Trip Distribution Percentage

Cypress City Center

Project Trip Distribution - Retail

---

## **APPENDIX B**

### **EXISTING TRAFFIC VOLUMES**

National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Alamitos Blvd & Cerritos Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-001  
Date: 5/15/2019

NS/EW Streets:		Los Alamitos Blvd				Los Alamitos Blvd				Cerritos Ave				Cerritos Ave				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		2	3	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	33	80	70	4	19	92	26	0	17	163	31	0	33	156	12	2	738
	7:15 AM	44	150	111	6	21	181	18	0	38	192	29	0	49	151	26	2	1018
	7:30 AM	35	202	80	7	32	215	21	2	60	205	16	0	75	187	61	5	1203
	7:45 AM	44	165	68	3	22	254	24	0	26	201	44	0	63	212	36	4	1166
	8:00 AM	36	104	76	3	17	103	27	0	6	202	40	0	49	156	15	0	834
	8:15 AM	40	108	83	1	12	105	18	0	9	166	44	0	60	177	11	0	834
	8:30 AM	29	98	69	4	15	132	23	0	9	149	40	0	50	163	17	0	798
8:45 AM	31	78	61	2	18	141	18	0	9	154	46	0	61	137	13	0	769	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	292	985	618	30	156	1223	175	2	174	1432	290	0	440	1339	191	13	7360	
PEAK HR :	07:15 AM - 08:15 AM																	TOTAL
PEAK HR VOL :	159	621	335	19	92	753	90	2	130	800	129	0	236	706	138	11	4221	
PEAK HR FACTOR :	0.903	0.769	0.755	0.679	0.719	0.741	0.833	0.250	0.542	0.976	0.733	0.000	0.787	0.833	0.566	0.550	0.877	
		0.875				0.781				0.942				0.832				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		2	3	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	63	195	79	2	19	147	13	0	40	145	50	0	72	153	29	1	1008
	4:15 PM	60	207	80	3	20	133	10	0	22	169	38	1	56	186	29	2	1016
	4:30 PM	51	168	78	2	20	133	20	2	29	162	46	0	62	200	28	0	1001
	4:45 PM	56	196	75	5	20	144	17	1	35	207	34	1	70	193	16	1	1071
	5:00 PM	67	222	107	5	23	139	15	0	34	183	47	0	71	207	36	1	1157
	5:15 PM	73	187	107	4	19	136	22	0	23	202	46	0	78	212	39	1	1149
	5:30 PM	45	198	120	6	21	123	12	0	36	209	38	0	73	186	24	1	1092
5:45 PM	52	192	124	2	26	141	9	2	35	160	40	0	78	164	29	1	1055	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	467	1565	770	29	168	1096	118	5	254	1437	339	2	560	1501	230	8	8549	
PEAK HR :	04:45 PM - 05:45 PM																	TOTAL
PEAK HR VOL :	241	803	409	20	83	542	66	1	128	801	165	1	292	798	115	4	4469	
PEAK HR FACTOR :	0.825	0.904	0.852	0.833	0.902	0.941	0.750	0.250	0.889	0.958	0.878	0.250	0.936	0.941	0.737	1.000	0.966	
		0.918				0.951				0.967				0.916				

# National Data & Surveying Services

**Location:** Bloomfield St & Cerritos Ave  
**City:** Cypress  
**Control:** Signalized

## Intersection Turning Movement Count

**Project ID:** 18-01205-021  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Bloomfield St				Bloomfield St				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	54	31	17	0	24	88	66	0	13	165	57	0	37	241	11	0	804
7:15 AM	20	27	26	0	29	113	29	0	11	167	39	0	28	183	13	0	685
7:30 AM	29	74	46	0	44	163	22	0	3	191	32	0	48	180	31	0	863
7:45 AM	33	105	58	0	43	161	20	0	10	201	36	0	52	177	22	0	918
8:00 AM	29	65	41	0	32	133	25	0	11	194	21	0	34	174	10	0	769
8:15 AM	30	68	47	0	49	112	23	0	7	240	26	0	38	193	37	0	870
8:30 AM	33	49	55	0	57	120	22	0	11	196	18	0	35	208	39	0	843
8:45 AM	9	42	13	0	22	96	25	0	11	178	18	0	24	166	16	0	620
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	237	461	303	0	300	986	232	0	77	1532	247	0	296	1522	179	0	6372
	23.68%	46.05%	30.27%	0.00%	19.76%	64.95%	15.28%	0.00%	4.15%	82.54%	13.31%	0.00%	14.82%	76.21%	8.96%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	121	312	192	0	168	569	90	0	31	826	115	0	172	724	100	0	3420
<b>PEAK HR FACTOR :</b>	0.917	0.743	0.828	0.000	0.857	0.873	0.900	0.000	0.705	0.860	0.799	0.000	0.827	0.938	0.676	0.000	0.931
	0.797				0.903				0.890				0.929				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	28	100	32	0	10	67	23	0	29	260	30	0	20	208	37	0	844
4:15 PM	29	110	33	0	9	70	21	0	29	254	24	0	21	191	38	0	829
4:30 PM	26	97	21	0	27	64	25	0	49	250	36	0	30	237	35	0	897
4:45 PM	23	117	27	0	12	80	19	0	31	255	27	0	33	245	39	0	908
5:00 PM	32	140	44	0	15	76	35	0	28	296	20	0	18	276	38	0	1018
5:15 PM	31	119	43	0	21	63	26	0	50	286	29	0	24	282	57	0	1031
5:30 PM	22	138	44	0	13	66	19	0	50	267	28	0	23	252	43	0	965
5:45 PM	23	105	30	0	13	84	18	0	41	215	18	0	34	225	33	0	839
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	214	926	274	0	120	570	186	0	307	2083	212	0	203	1916	320	0	7331
	15.13%	65.49%	19.38%	0.00%	13.70%	65.07%	21.23%	0.00%	11.80%	80.05%	8.15%	0.00%	8.32%	78.56%	13.12%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	108	514	158	0	61	285	99	0	159	1104	104	0	98	1055	177	0	3922
<b>PEAK HR FACTOR :</b>	0.844	0.918	0.898	0.000	0.726	0.891	0.707	0.000	0.795	0.932	0.897	0.000	0.742	0.935	0.776	0.000	0.951
	0.903				0.883				0.936				0.916				

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Denni St & Cerritos Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-025  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Denni St				Denni St				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	0	0	1	1	0		1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	15	8	3	0	29	29	23	0	12	159	14	0	17	238	18	0	565
7:15 AM	6	15	10	0	45	32	28	0	6	187	7	0	26	204	41	0	607
7:30 AM	5	21	6	0	60	32	27	0	10	209	21	0	27	181	42	0	641
7:45 AM	5	10	15	0	76	43	30	0	16	236	21	0	32	221	41	0	746
8:00 AM	8	21	14	0	64	44	29	0	15	174	22	0	25	183	29	1	629
8:15 AM	5	27	14	0	39	34	42	0	21	226	22	1	27	208	25	0	691
8:30 AM	2	14	9	0	37	19	23	0	17	233	30	1	18	213	13	0	629
8:45 AM	7	9	9	0	21	16	21	0	11	162	7	0	21	185	13	1	483
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	53	125	80	0	371	249	223	0	108	1586	144	2	193	1633	222	2	4991
<b>PEAK HR :</b>	20.54%	48.45%	31.01%	0.00%	44.01%	29.54%	26.45%	0.00%	5.87%	86.20%	7.83%	0.11%	9.41%	79.66%	10.83%	0.10%	
<b>PEAK HR VOL :</b>	07:30 AM - 08:30 AM				239	153	128	0	62	845	86	1	111	793	137	1	TOTAL
<b>PEAK HR FACTOR :</b>	0.719	0.731	0.817	0.000	0.786	0.869	0.762	0.000	0.738	0.895	0.977	0.250	0.867	0.897	0.815	0.250	2707
	0.821				0.872				0.910				0.886				0.907

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	0	0	1	1	0		1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	18	33	25	0	23	18	15	0	26	273	17	0	4	212	28	0	692
4:15 PM	11	46	28	0	20	16	18	0	26	256	17	0	9	173	52	0	672
4:30 PM	10	46	19	0	19	14	14	0	32	266	13	0	16	263	22	1	735
4:45 PM	16	45	19	0	24	17	22	0	24	270	5	0	13	265	56	0	776
5:00 PM	12	46	21	0	25	22	18	0	41	317	8	0	11	256	55	0	832
5:15 PM	18	54	11	0	23	21	16	0	28	307	15	0	13	303	59	0	868
5:30 PM	10	35	26	0	23	18	25	0	30	298	5	0	12	289	39	0	810
5:45 PM	8	51	18	0	22	23	14	0	31	214	10	0	18	238	30	0	677
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	103	356	167	0	179	149	142	0	238	2201	90	0	96	1999	341	1	6062
<b>PEAK HR :</b>	16.45%	56.87%	26.68%	0.00%	38.09%	31.70%	30.21%	0.00%	9.41%	87.03%	3.56%	0.00%	3.94%	82.03%	13.99%	0.04%	
<b>PEAK HR VOL :</b>	04:45 PM - 05:45 PM				95	78	81	0	123	1192	33	0	49	1113	209	0	TOTAL
<b>PEAK HR FACTOR :</b>	0.778	0.833	0.740	0.000	0.950	0.886	0.810	0.000	0.750	0.940	0.550	0.000	0.942	0.918	0.886	0.000	3286
	0.943				0.962				0.921				0.914				0.946



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Moody St & Cerritos Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-023  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Moody St				Moody St				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	1.5 SL	0.5 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	81	0	43	0	9	200	0	0	0	238	25	0	596
7:15 AM	0	0	0	0	123	1	45	0	18	230	0	0	0	211	39	0	667
7:30 AM	0	0	0	0	127	1	48	0	16	270	0	0	0	222	61	0	745
7:45 AM	0	0	0	0	186	1	57	0	20	315	1	0	0	214	37	0	831
8:00 AM	1	2	1	0	147	0	56	1	17	250	1	0	0	222	37	0	735
8:15 AM	4	0	0	0	120	0	58	0	17	264	1	0	0	173	26	0	663
8:30 AM	0	0	0	0	117	0	46	0	32	239	0	0	0	188	26	0	648
8:45 AM	0	1	0	0	82	0	52	0	17	200	0	0	0	173	23	0	548
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	5	3	1	0	983	3	405	1	146	1968	3	0	0	1641	274	0	5433
<b>PEAK HR :</b>	07:15 AM - 08:15 AM				70.62%	0.22%	29.09%	0.07%	6.90%	92.96%	0.14%	0.00%	0.00%	85.69%	14.31%	0.00%	TOTAL
<b>PEAK HR VOL :</b>	1	2	1	0	583	3	206	1	71	1065	2	0	0	869	174	0	2978
<b>PEAK HR FACTOR :</b>	0.250	0.250	0.250	0.000	0.784	0.750	0.904	0.250	0.888	0.845	0.500	0.000	0.000	0.979	0.713	0.000	0.896
	0.250				0.813				0.847				0.921				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	1.5 SL	0.5 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	2	2	1	0	51	0	31	0	52	254	2	0	0	221	79	0	695
4:15 PM	2	0	0	0	57	0	32	0	57	257	0	0	0	216	83	0	704
4:30 PM	0	1	0	0	58	0	44	0	39	263	1	0	0	274	100	0	780
4:45 PM	0	0	0	0	50	0	37	0	59	264	0	0	0	262	76	0	748
5:00 PM	1	0	0	0	47	0	31	0	56	300	1	0	0	342	121	0	899
5:15 PM	2	0	0	0	75	0	39	0	51	282	0	0	0	322	120	0	891
5:30 PM	0	0	0	0	78	0	44	0	58	285	0	0	0	302	99	0	866
5:45 PM	0	0	0	0	61	0	42	0	46	217	1	0	0	227	96	0	690
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	7	3	1	0	477	0	300	0	418	2122	5	0	0	2166	774	0	6273
<b>PEAK HR :</b>	04:45 PM - 05:45 PM				61.39%	0.00%	38.61%	0.00%	16.42%	83.38%	0.20%	0.00%	0.00%	73.67%	26.33%	0.00%	TOTAL
<b>PEAK HR VOL :</b>	3	0	0	0	250	0	151	0	224	1131	1	0	0	1228	416	0	3404
<b>PEAK HR FACTOR :</b>	0.375	0.000	0.000	0.000	0.801	0.000	0.858	0.000	0.949	0.943	0.250	0.000	0.000	0.898	0.860	0.000	0.947
	0.375				0.822				0.950				0.888				

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Walker St & Cerritos Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-007  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Walker St				Walker St				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	3 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU	
7:00 AM	28	28	9	0	21	121	7	0	2	195	75	0	17	209	15	0	727
7:15 AM	22	53	12	0	44	143	12	0	5	237	99	0	21	213	20	0	881
7:30 AM	20	80	13	0	36	178	14	0	2	268	104	0	31	242	42	0	1030
7:45 AM	32	66	16	0	45	227	14	0	5	319	144	0	31	219	25	0	1143
8:00 AM	36	50	12	0	47	190	20	0	5	285	136	0	29	192	19	0	1021
8:15 AM	16	45	12	0	38	155	22	0	8	267	106	0	29	188	20	0	906
8:30 AM	31	65	14	0	30	123	11	0	10	233	101	0	27	163	25	0	833
8:45 AM	21	47	13	0	20	136	17	0	6	196	90	0	11	158	18	0	733
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	206	434	101	0	281	1273	117	0	43	2000	855	0	196	1584	184	0	7274
	27.80%	58.57%	13.63%	0.00%	16.82%	76.18%	7.00%	0.00%	1.48%	69.01%	29.50%	0.00%	9.98%	80.65%	9.37%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	104	241	53	0	166	750	70	0	20	1139	490	0	120	841	106	0	4100
<b>PEAK HR FACTOR :</b>	0.722	0.753	0.828	0.000	0.883	0.826	0.795	0.000	0.625	0.893	0.851	0.000	0.968	0.869	0.631	0.000	0.897
	0.873				0.862				0.881				0.847				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	3 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU	
4:00 PM	85	151	37	0	27	112	4	0	19	239	62	0	18	219	41	0	1014
4:15 PM	84	161	45	0	27	93	5	0	20	235	66	0	23	226	28	0	1013
4:30 PM	126	167	35	0	31	121	16	0	6	245	55	0	18	224	32	0	1076
4:45 PM	107	176	46	0	20	99	6	0	14	252	64	0	28	257	38	0	1107
5:00 PM	137	201	48	0	28	111	9	0	31	273	53	0	16	297	48	0	1252
5:15 PM	141	207	60	0	29	109	19	0	23	271	65	0	24	299	41	0	1288
5:30 PM	117	153	59	0	29	130	12	0	27	272	55	0	25	271	30	0	1180
5:45 PM	100	195	26	0	24	97	21	0	19	198	59	0	33	228	41	0	1041
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	897	1411	356	0	215	872	92	0	159	1985	479	0	185	2021	299	0	8971
	33.67%	52.97%	13.36%	0.00%	18.24%	73.96%	7.80%	0.00%	6.06%	75.68%	18.26%	0.00%	7.39%	80.68%	11.94%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	502	737	213	0	106	449	46	0	95	1068	237	0	93	1124	157	0	4827
<b>PEAK HR FACTOR :</b>	0.890	0.890	0.888	0.000	0.914	0.863	0.605	0.000	0.766	0.978	0.912	0.000	0.830	0.940	0.818	0.000	0.937
	0.890				0.879				0.975				0.944				

# National Data & Surveying Services

**Location:** Valley View St & Cerritos Ave  
**City:** Cypress  
**Control:** Signalized

## Intersection Turning Movement Count

**Project ID:** 18-01205-008  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Valley View St				Valley View St				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	3 NT	1 NR	0 NU	1 SL	3 ST	1 SR	0 SU	2 EL	3 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
7:00 AM	36	253	15	1	14	301	54	2	23	112	76	0	40	139	17	0	1083
7:15 AM	34	330	13	0	26	300	58	3	21	165	97	0	30	196	43	0	1316
7:30 AM	37	323	13	1	27	291	87	1	32	154	111	0	36	178	37	0	1328
7:45 AM	41	288	4	0	28	328	69	0	16	176	134	0	61	195	44	0	1384
8:00 AM	44	282	14	0	24	423	56	2	28	144	127	0	43	163	23	0	1373
8:15 AM	50	274	11	0	34	358	57	2	16	164	100	0	38	154	20	0	1278
8:30 AM	40	257	17	0	18	310	45	3	24	128	100	0	36	119	21	0	1118
8:45 AM	41	301	16	0	11	273	40	0	27	97	68	0	19	128	16	0	1037
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	323	2308	103	2	182	2584	466	13	187	1140	813	0	303	1272	221	0	9917
<b>PEAK HR :</b>	11.81% 84.36% 3.76% 0.07%				5.61% 79.63% 14.36% 0.40%				8.74% 53.27% 37.99% 0.00%				16.87% 70.82% 12.31% 0.00%				
<b>PEAK HR VOL :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR FACTOR :</b>	156	1223	44	1	105	1342	270	6	97	639	469	0	170	732	147	0	5401
	0.886	0.927	0.786	0.250	0.938	0.793	0.776	0.500	0.758	0.908	0.875	0.000	0.697	0.934	0.835	0.000	0.976
	0.944				0.853				0.924				0.874				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	3 NT	1 NR	0 NU	1 SL	3 ST	1 SR	0 SU	2 EL	3 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
4:00 PM	81	386	44	1	41	257	45	3	69	209	58	0	19	127	19	0	1359
4:15 PM	79	398	39	0	33	285	49	2	49	167	62	0	17	138	28	0	1346
4:30 PM	72	423	50	1	41	291	46	4	78	201	67	0	20	146	30	0	1470
4:45 PM	95	489	57	0	34	247	62	3	59	194	63	0	26	151	34	0	1514
5:00 PM	84	445	48	0	37	284	41	3	95	225	70	0	20	171	33	0	1556
5:15 PM	90	491	59	1	31	236	47	4	78	224	78	0	34	173	34	0	1580
5:30 PM	73	468	60	2	34	292	51	0	85	211	69	0	20	172	27	0	1564
5:45 PM	85	494	40	0	32	263	48	4	58	169	49	0	22	130	41	0	1435
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	659	3594	397	5	283	2155	389	23	571	1600	516	0	178	1208	246	0	11824
<b>PEAK HR :</b>	14.16% 77.21% 8.53% 0.11%				9.93% 75.61% 13.65% 0.81%				21.25% 59.55% 19.20% 0.00%				10.91% 74.02% 15.07% 0.00%				
<b>PEAK HR VOL :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR FACTOR :</b>	342	1893	224	3	136	1059	201	10	317	854	280	0	100	667	128	0	6214
	0.900	0.964	0.933	0.375	0.919	0.907	0.810	0.625	0.834	0.949	0.897	0.000	0.735	0.964	0.941	0.000	0.983
	0.960				0.932				0.930				0.928				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramp & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-007  
Date: 5/15/2019

NS/EW Streets:		I-605 NB Ramp				I-605 NB Ramp				Katella Ave				Katella Ave				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0	0	1	0	0	0	1	0	1	3	0	0	0	2.5	1.5	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	7:00 AM	2	1	200	0	0	0	51	0	19	303	0	0	0	321	203	0	
	7:15 AM	0	1	270	0	0	0	70	0	28	375	0	1	0	345	205	0	
	7:30 AM	0	0	321	0	0	0	87	0	39	470	0	3	0	370	211	0	
	7:45 AM	0	0	263	0	0	0	119	0	28	352	0	1	0	377	216	0	
	8:00 AM	0	0	212	0	0	0	122	0	18	310	0	0	0	362	201	0	
	8:15 AM	0	1	225	0	0	0	90	0	19	289	0	1	0	339	188	0	
	8:30 AM	0	0	228	0	0	0	74	0	30	279	0	2	0	331	179	0	
8:45 AM	0	0	267	0	0	0	35	0	32	320	0	0	0	263	138	0		
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		2	3	1986	0	0	0	648	0	213	2698	0	8	0	2708	1541	0	9807
		0.10%	0.15%	99.75%	0.00%	0.00%	0.00%	100.00%	0.00%	7.30%	92.43%	0.00%	0.27%	0.00%	63.73%	36.27%	0.00%	
PEAK HR :		07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :		0	1	1066	0	0	0	398	0	113	1507	0	5	0	1454	833	0	5377
PEAK HR FACTOR :		0.000	0.250	0.830	0.000	0.000	0.000	0.816	0.000	0.724	0.802	0.000	0.417	0.000	0.964	0.964	0.000	0.896
		0.831				0.816				0.793				0.964				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0	0	1	0	0	0	1	0	1	3	0	0	0	2.5	1.5	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	4:00 PM	0	0	196	0	0	0	26	0	45	422	0	0	0	360	173	0	
	4:15 PM	0	0	187	0	0	0	23	0	71	460	0	3	0	382	190	0	
	4:30 PM	0	0	226	0	0	0	34	0	73	479	0	0	0	347	157	0	
	4:45 PM	0	0	180	0	0	0	42	0	29	465	0	2	0	410	178	0	
	5:00 PM	0	0	164	0	0	0	41	0	63	424	0	1	0	439	243	0	
	5:15 PM	1	0	187	0	0	0	32	0	51	536	0	1	0	387	227	0	
	5:30 PM	0	0	210	0	0	0	44	0	37	410	0	0	0	439	198	0	
5:45 PM	0	0	217	0	0	0	35	0	30	434	0	1	0	366	210	0		
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		1	0	1567	0	0	0	277	0	399	3630	0	8	0	3130	1576	0	10588
		0.06%	0.00%	99.94%	0.00%	0.00%	0.00%	100.00%	0.00%	9.88%	89.92%	0.00%	0.20%	0.00%	66.51%	33.49%	0.00%	
PEAK HR :		04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :		1	0	741	0	0	0	159	0	180	1835	0	4	0	1675	846	0	5441
PEAK HR FACTOR :		0.250	0.000	0.882	0.000	0.000	0.000	0.903	0.000	0.714	0.856	0.000	0.500	0.000	0.954	0.870	0.000	0.957
		0.883				0.903				0.858				0.924				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Walnut St / Wallingsford Rd & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-020  
Date: 5/15/2019

		Total																	
NS/EW Streets:		Walnut St / Wallingsford Rd				Walnut St / Wallingsford Rd				Katella Ave				Katella Ave					
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
		1.3	0.3	0.3	0	1	1	1	0	1	4	0	0	1	3	1	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	105	22	18	0	2	10	7	0	1	431	42	1	13	399	0	1		1052
	7:15 AM	115	42	35	0	2	18	7	0	4	468	49	0	18	403	4	0		1165
	7:30 AM	126	46	25	0	6	39	8	0	6	508	112	0	33	417	2	0		1328
	7:45 AM	144	37	26	0	8	50	7	0	2	462	112	0	75	434	1	1		1359
	8:00 AM	163	34	32	0	2	33	8	0	5	463	65	0	51	417	8	4		1285
	8:15 AM	135	20	31	0	8	27	19	0	6	466	46	0	14	358	3	4		1137
	8:30 AM	90	14	20	0	6	37	12	0	3	429	53	0	24	391	2	8		1089
	8:45 AM	86	14	21	0	4	9	7	0	5	486	40	1	24	301	3	3		1004
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :		964	229	208	0	38	223	75	0	32	3713	519	2	252	3120	23	21	9419	
PEAK HR :		07:15 AM - 08:15 AM																TOTAL	
PEAK HR VOL :		548	159	118	0	18	140	30	0	17	1901	338	0	177	1671	15	5	5137	
PEAK HR FACTOR :		0.840	0.864	0.843	0.000	0.563	0.700	0.938	0.000	0.708	0.936	0.754	0.000	0.590	0.963	0.469	0.313	0.945	
		0.901				0.723				0.901				0.914					
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
		1.3	0.3	0.3	0	1	1	1	0	1	4	0	0	1	3	1	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	73	8	31	0	3	22	16	0	7	482	103	0	25	416	3	7		1196
	4:15 PM	62	17	36	0	1	8	11	0	2	494	103	0	18	530	4	4		1290
	4:30 PM	72	12	32	0	3	9	5	0	3	492	102	0	37	438	3	11		1219
	4:45 PM	89	23	33	0	5	12	8	0	12	479	84	0	26	503	6	5		1285
	5:00 PM	71	10	30	0	4	19	18	0	7	504	96	0	31	531	2	9		1332
	5:15 PM	77	21	30	1	6	17	11	0	8	523	100	0	32	531	3	9		1369
	5:30 PM	85	21	49	0	2	18	20	0	7	516	91	0	42	504	2	5		1362
	5:45 PM	73	22	51	0	7	12	11	0	3	514	78	0	46	513	4	8		1342
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :		602	134	292	1	31	117	100	0	49	4004	757	0	257	3966	27	58	10395	
PEAK HR :		05:00 PM - 06:00 PM																TOTAL	
PEAK HR VOL :		306	74	160	1	19	66	60	0	25	2057	365	0	151	2079	11	31	5405	
PEAK HR FACTOR :		0.900	0.841	0.784	0.250	0.679	0.868	0.750	0.000	0.781	0.983	0.913	0.000	0.821	0.979	0.688	0.861	0.987	
		0.873				0.884				0.969				0.988					

National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Alamitos Blvd & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-008  
Date: 5/15/2019

NS/EW Streets:		Los Alamitos Blvd				Los Alamitos Blvd				Katella Ave				Katella Ave				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		2	3	1	0	2	3	1	0	2	3	1	0	2	3	1	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	85	172	47	0	31	134	34	0	36	335	69	0	52	273	9	0	1277
	7:15 AM	95	247	88	0	34	183	53	0	53	367	62	0	58	280	17	0	1537
	7:30 AM	98	290	113	0	36	278	48	0	51	415	59	0	84	279	28	0	1779
	7:45 AM	94	210	113	0	46	305	58	0	28	396	68	0	107	359	18	0	1802
	8:00 AM	101	192	119	0	39	171	26	0	37	360	66	0	76	311	21	0	1519
	8:15 AM	75	197	114	0	33	160	28	0	37	401	66	0	84	273	26	0	1494
	8:30 AM	84	156	105	0	44	150	40	0	56	330	51	0	87	268	12	0	1383
8:45 AM	75	139	98	0	45	164	33	0	48	370	79	0	69	227	17	0	1364	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		707	1603	797	0	308	1545	320	0	346	2974	520	0	617	2270	148	0	12155
PEAK HR :		07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :		388	939	433	0	155	937	185	0	169	1538	255	0	325	1229	84	0	6637
PEAK HR FACTOR :		0.960	0.809	0.910	0.000	0.842	0.768	0.797	0.000	0.797	0.927	0.938	0.000	0.759	0.856	0.750	0.000	0.921
		0.878				0.781				0.934				0.846				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		2	3	1	0	2	3	1	0	2	3	1	0	2	3	1	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	100	200	94	0	19	233	48	0	53	330	93	0	84	320	21	0	1595
	4:15 PM	104	182	86	0	34	213	51	0	53	353	110	0	92	364	36	0	1678
	4:30 PM	119	211	86	0	36	214	38	0	59	337	107	0	91	337	46	0	1681
	4:45 PM	88	219	93	0	35	198	54	0	63	376	116	0	61	403	20	0	1726
	5:00 PM	128	208	85	0	32	257	62	0	54	336	114	0	71	368	27	0	1742
	5:15 PM	104	227	100	0	37	222	49	0	68	352	114	0	64	383	25	0	1745
	5:30 PM	122	198	89	0	31	259	53	0	74	362	124	0	88	385	21	0	1806
5:45 PM	102	245	92	0	37	227	55	0	59	388	141	0	79	378	22	0	1825	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		867	1690	725	0	261	1823	410	0	483	2834	919	0	630	2938	218	0	13798
PEAK HR :		05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :		456	878	366	0	137	965	219	0	255	1438	493	0	302	1514	95	0	7118
PEAK HR FACTOR :		0.891	0.896	0.915	0.000	0.926	0.931	0.883	0.000	0.861	0.927	0.874	0.000	0.858	0.983	0.880	0.000	0.975
		0.968				0.941				0.929				0.967				



National Data & Surveying Services

Intersection Turning Movement Count

Location: Bloomfield St & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-009  
Date: 5/15/2019

NS/EW Streets:		Bloomfield St				Bloomfield St				Katella Ave				Katella Ave				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		1	1.5	0.5	0	1	1	1	0	1	3	0	0	1	3	0	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	14	27	4	0	24	18	57	0	33	346	9	0	8	278	26	0	844
	7:15 AM	26	77	2	0	25	18	75	0	73	373	2	0	5	291	42	1	1010
	7:30 AM	15	139	1	0	39	40	91	0	100	439	8	0	4	317	82	0	1275
	7:45 AM	19	92	2	0	62	78	154	0	84	404	9	0	4	334	84	4	1330
	8:00 AM	33	63	4	0	45	40	86	0	72	363	5	0	9	293	30	2	1045
	8:15 AM	21	63	5	0	33	32	70	0	67	385	19	0	6	295	49	1	1046
	8:30 AM	23	48	5	0	41	43	64	0	59	375	12	0	19	276	42	2	1009
8:45 AM	16	20	5	0	41	31	63	0	33	336	15	0	8	266	21	0	855	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		167	529	28	0	310	300	660	0	521	3021	79	0	63	2350	376	10	8414
PEAK HR :		07:30 AM - 08:30 AM																
PEAK HR VOL :		88	357	12	0	179	190	401	0	323	1591	41	0	23	1239	245	7	4696
PEAK HR FACTOR :		0.667	0.642	0.600	0.000	0.722	0.609	0.651	0.000	0.808	0.906	0.539	0.000	0.639	0.927	0.729	0.438	0.883
		0.737				0.655				0.894				0.888				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		1	1.5	0.5	0	1	1	1	0	1	3	0	0	1	3	0	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	17	21	6	0	45	37	51	0	63	333	13	0	12	367	58	2	1025
	4:15 PM	13	28	4	0	56	36	46	0	82	405	17	0	13	317	46	5	1068
	4:30 PM	15	19	4	0	34	37	49	0	59	402	20	0	11	457	55	2	1164
	4:45 PM	11	32	6	0	46	37	35	0	61	419	18	0	7	385	49	2	1108
	5:00 PM	7	33	5	0	52	40	49	0	70	402	18	0	13	437	73	3	1202
	5:15 PM	13	21	10	0	39	46	48	0	89	391	21	0	20	468	58	1	1225
	5:30 PM	17	26	6	0	38	50	66	0	71	396	22	0	16	375	50	0	1133
5:45 PM	9	21	9	0	41	43	43	0	95	369	17	0	16	366	44	1	1074	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		102	201	50	0	351	326	387	0	590	3117	146	0	108	3172	433	16	8999
PEAK HR :		04:30 PM - 05:30 PM																
PEAK HR VOL :		46	105	25	0	171	160	181	0	279	1614	77	0	51	1747	235	8	4699
PEAK HR FACTOR :		0.767	0.795	0.625	0.000	0.822	0.870	0.923	0.000	0.784	0.963	0.917	0.000	0.638	0.933	0.805	0.667	0.959
		0.898				0.908				0.983				0.933				

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Lexington Dr & Katella Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-026  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Lexington Dr				Lexington Dr				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0 ST	0.5 SR	0 SU	2 EL	3 ET	1 ER	0 EU	1 WL	3 WT	0 WR	0 WU	
7:00 AM	16	7	19	0	18	1	13	0	20	389	23	5	16	378	23	2	930
7:15 AM	24	10	33	0	20	1	29	0	19	419	19	1	20	351	19	1	966
7:30 AM	22	4	24	0	31	1	39	0	18	392	20	2	25	384	29	1	992
7:45 AM	19	11	43	0	33	4	39	0	33	444	33	3	30	376	24	3	1095
8:00 AM	17	14	32	0	30	7	33	0	30	349	34	3	37	342	23	1	952
8:15 AM	27	11	26	0	35	4	33	0	32	359	26	2	25	360	21	1	962
8:30 AM	16	8	25	0	19	6	34	0	9	362	23	2	25	295	17	1	842
8:45 AM	11	6	27	0	9	2	12	0	20	308	23	2	40	291	15	2	768
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	152	71	229	0	195	26	232	0	181	3022	201	20	218	2777	171	12	7507
<b>PEAK HR :</b>	07:15 AM - 08:15 AM				43.05%	5.74%	51.21%	0.00%	5.29%	88.26%	5.87%	0.58%	6.86%	87.38%	5.38%	0.38%	TOTAL
<b>PEAK HR VOL :</b>	82	39	132	0	114	13	140	0	100	1604	106	9	112	1453	95	6	4005
<b>PEAK HR FACTOR :</b>	0.854	0.696	0.767	0.000	0.864	0.464	0.897	0.000	0.758	0.903	0.779	0.750	0.757	0.946	0.819	0.500	0.914
	0.866				0.878				0.886				0.949				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0 ST	0.5 SR	0 SU	2 EL	3 ET	1 ER	0 EU	1 WL	3 WT	0 WR	0 WU	
4:00 PM	21	13	53	0	45	3	24	0	25	404	15	0	26	369	20	1	1019
4:15 PM	35	18	50	0	27	4	18	0	24	366	26	2	31	379	23	0	1003
4:30 PM	30	13	56	0	33	2	28	0	20	395	18	1	40	431	19	2	1088
4:45 PM	16	14	38	0	23	1	19	0	19	385	24	4	26	392	28	5	994
5:00 PM	21	16	32	0	37	4	29	0	30	382	12	2	18	449	27	1	1060
5:15 PM	27	12	35	0	33	3	31	0	26	362	18	3	31	402	25	1	1009
5:30 PM	17	17	53	0	16	4	20	0	26	439	17	0	25	411	31	0	1076
5:45 PM	22	17	31	0	16	7	36	0	33	366	14	0	36	377	28	1	984
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	189	120	348	0	230	28	205	0	203	3099	144	12	233	3210	201	11	8233
<b>PEAK HR :</b>	04:30 PM - 05:30 PM				49.68%	6.05%	44.28%	0.00%	5.87%	89.62%	4.16%	0.35%	6.37%	87.82%	5.50%	0.30%	TOTAL
<b>PEAK HR VOL :</b>	94	55	161	0	126	10	107	0	95	1524	72	10	115	1674	99	9	4151
<b>PEAK HR FACTOR :</b>	0.783	0.859	0.719	0.000	0.851	0.625	0.863	0.000	0.792	0.965	0.750	0.625	0.719	0.932	0.884	0.450	0.954
	0.783				0.868				0.980				0.958				



National Data & Surveying Services

Intersection Turning Movement Count

Location: Cottonwood Way & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-011  
Date: 5/15/2019

Total

NS/EW Streets:	Cottonwood Way				Cottonwood Way				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1.5 SL	0 ST	0.5 SR	0 SU	1 EL	3 ET	0 ER	0 EU	0 WL	3 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	2	0	1	357	0	0	0	302	1	0	663
7:15 AM	0	0	0	0	2	0	0	0	0	400	1	0	0	347	3	0	753
7:30 AM	0	0	0	0	0	0	1	0	0	442	0	0	0	424	2	0	869
7:45 AM	0	0	0	0	2	0	0	0	2	414	1	2	0	383	1	0	805
8:00 AM	0	0	0	0	3	0	2	0	1	379	2	1	0	385	1	0	774
8:15 AM	0	0	0	0	4	0	1	0	0	374	0	2	0	315	1	0	697
8:30 AM	0	0	0	0	0	0	1	0	2	343	0	3	0	331	2	0	682
8:45 AM	0	0	0	0	2	0	1	0	1	342	2	6	0	298	1	0	653
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	13	0	8	0	7	3051	6	14	0	2785	12	0	5896
					61.90%	0.00%	38.10%	0.00%	0.23%	99.12%	0.19%	0.45%	0.00%	99.57%	0.43%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	7	0	3	0	3	1635	4	3	0	1539	7	0	3201
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.583	0.000	0.375	0.000	0.375	0.925	0.500	0.375	0.000	0.907	0.583	0.000	0.921
					0.500				0.930				0.907				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1.5 SL	0 ST	0.5 SR	0 SU	1 EL	3 ET	0 ER	0 EU	0 WL	3 WT	0 WR	0 WU	
4:00 PM	0	0	1	0	7	0	0	0	1	429	3	8	0	406	0	0	855
4:15 PM	0	0	0	0	3	0	1	0	1	495	0	3	0	345	1	0	849
4:30 PM	0	0	0	0	3	0	2	0	3	467	0	6	0	453	4	0	938
4:45 PM	0	0	2	0	5	0	2	0	1	455	0	6	0	440	1	0	912
5:00 PM	0	0	0	0	5	0	5	0	3	492	0	3	0	540	2	0	1050
5:15 PM	0	0	1	0	1	0	0	0	4	422	0	2	0	464	1	0	895
5:30 PM	0	0	0	0	2	0	2	0	3	434	0	3	0	459	2	0	905
5:45 PM	0	0	1	0	1	0	3	0	5	407	0	1	0	421	4	0	843
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	5	0	27	0	15	0	21	3601	3	32	0	3528	15	0	7247
					64.29%	0.00%	35.71%	0.00%	0.57%	98.47%	0.08%	0.88%	0.00%	99.58%	0.42%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	3	0	14	0	9	0	11	1836	0	17	0	1897	8	0	3795
PEAK HR FACTOR :	0.000	0.000	0.375	0.000	0.700	0.000	0.450	0.000	0.688	0.933	0.000	0.708	0.000	0.878	0.500	0.000	0.904
	0.375				0.575				0.936				0.879				

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Siboney St & Katella Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-024  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Siboney St				Siboney St				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0 NT	1 NR	0 NU	1.5 SL	0 ST	1.5 SR	0 SU	2 EL	3 ET	0 ER	0 EU	1 WL	3 WT	1 WR	0 WU	
7:00 AM	9	0	15	0	9	0	2	0	8	394	7	18	2	411	3	0	878
7:15 AM	9	1	17	0	7	0	2	0	11	444	8	11	8	400	1	0	919
7:30 AM	12	1	14	0	7	0	3	0	15	402	7	16	6	419	4	1	907
7:45 AM	12	0	15	0	13	0	5	0	21	457	9	24	10	445	8	0	1019
8:00 AM	10	3	7	0	4	0	6	0	9	394	13	8	13	395	5	1	868
8:15 AM	3	0	8	0	5	0	5	0	17	346	6	19	10	416	7	2	844
8:30 AM	9	0	4	0	8	0	6	0	12	381	7	17	5	322	3	0	774
8:45 AM	7	1	7	0	5	1	7	0	8	303	15	13	13	305	14	3	702
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	71	6	87	0	58	1	36	0	101	3121	72	126	67	3113	45	7	6911
<b>PEAK HR :</b>	07:00 AM - 08:00 AM				61.05%	1.05%	37.89%	0.00%	2.95%	91.26%	2.11%	3.68%	2.07%	96.32%	1.39%	0.22%	TOTAL
<b>PEAK HR VOL :</b>	42	2	61	0	36	0	12	0	55	1697	31	69	26	1675	16	1	3723
<b>PEAK HR FACTOR :</b>	0.875	0.500	0.897	0.000	0.692	0.000	0.600	0.000	0.655	0.928	0.861	0.719	0.650	0.941	0.500	0.250	0.913
	0.972				0.667				0.906				0.928				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0 NT	1 NR	0 NU	1.5 SL	0 ST	1.5 SR	0 SU	2 EL	3 ET	0 ER	0 EU	1 WL	3 WT	1 WR	0 WU	
4:00 PM	20	0	7	0	10	1	14	0	13	460	20	19	11	413	15	1	1004
4:15 PM	12	1	10	0	29	0	13	0	10	370	9	17	12	356	10	2	851
4:30 PM	13	1	12	0	21	0	13	0	15	480	5	24	15	474	9	2	1084
4:45 PM	19	0	15	0	15	1	13	0	14	429	9	15	23	423	8	0	984
5:00 PM	27	1	22	0	21	1	23	0	8	413	9	18	11	467	5	1	1027
5:15 PM	23	2	9	0	18	1	15	0	13	379	9	22	16	461	16	0	984
5:30 PM	13	2	13	0	12	1	21	0	12	460	6	14	13	465	6	0	1038
5:45 PM	14	2	19	0	13	1	12	0	7	374	3	18	9	366	7	0	845
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	141	9	107	0	139	6	124	0	92	3365	70	147	110	3425	76	6	7817
<b>PEAK HR :</b>	04:30 PM - 05:30 PM				51.67%	2.23%	46.10%	0.00%	2.50%	91.59%	1.91%	4.00%	3.04%	94.69%	2.10%	0.17%	TOTAL
<b>PEAK HR VOL :</b>	82	4	58	0	75	3	64	0	50	1701	32	79	65	1825	38	3	4079
<b>PEAK HR FACTOR :</b>	0.759	0.500	0.659	0.000	0.893	0.750	0.696	0.000	0.833	0.886	0.889	0.823	0.707	0.963	0.594	0.375	0.941
	0.720				0.789				0.888				0.966				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winners Cir & Katella Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-014  
Date: 5/15/2019

NS/EW Streets:		Winners Cir				Winners Cir				Katella Ave				Katella Ave					
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
		1	1	0	0	1	1	0	0	1	3	0	0	1	3	0	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	7:00 AM	3	0	0	0	6	0	1	0	3	363	4	0	6	325	0	3	714	
	7:15 AM	0	0	1	0	0	0	0	0	5	370	7	0	6	317	1	1	708	
	7:30 AM	1	0	1	0	0	0	0	0	4	427	13	0	5	450	2	0	903	
	7:45 AM	1	1	0	0	2	0	0	0	6	391	18	0	17	414	0	2	852	
	8:00 AM	4	0	2	0	1	2	0	0	5	313	11	1	10	392	2	6	749	
	8:15 AM	3	0	3	0	1	0	2	0	5	347	15	0	17	321	2	6	722	
	8:30 AM	2	0	3	0	0	0	2	0	10	321	11	1	8	327	3	5	693	
	8:45 AM	2	0	2	0	0	0	1	0	5	302	10	1	6	300	2	3	634	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :		16	1	12	0	10	2	6	0	43	2834	89	3	75	2846	12	26	5975	
PEAK HR :		07:30 AM - 08:30 AM																TOTAL	
PEAK HR VOL :		9	1	6	0	4	2	2	0	20	1478	57	1	49	1577	6	14	3226	
PEAK HR FACTOR :		0.563	0.250	0.500	0.000	0.500	0.250	0.250	0.000	0.833	0.865	0.792	0.250	0.721	0.876	0.750	0.583	0.893	
		0.667				0.667				0.876				0.900					
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
		1	1	0	0	1	1	0	0	1	3	0	0	1	3	0	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	4:00 PM	18	1	7	0	6	0	11	0	28	400	3	1	2	395	5	4	881	
	4:15 PM	6	1	3	0	8	0	21	0	30	398	2	1	2	345	3	14	834	
	4:30 PM	13	0	4	0	10	1	11	0	35	467	1	1	2	400	1	9	955	
	4:45 PM	8	0	9	0	10	0	12	0	22	399	4	2	2	405	2	10	885	
	5:00 PM	24	0	19	0	7	0	8	0	22	493	3	2	1	507	2	10	1098	
	5:15 PM	5	1	11	0	8	0	11	0	32	396	1	0	1	427	2	6	901	
	5:30 PM	11	1	11	0	7	0	15	0	30	440	2	0	1	446	0	7	971	
	5:45 PM	6	0	6	0	5	0	14	0	37	383	0	0	1	390	1	15	858	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :		91	4	70	0	61	1	103	0	236	3376	16	7	12	3315	16	75	7383	
PEAK HR :		04:45 PM - 05:45 PM																TOTAL	
PEAK HR VOL :		48	2	50	0	32	0	46	0	106	1728	10	4	5	1785	6	33	3855	
PEAK HR FACTOR :		0.500	0.500	0.658	0.000	0.800	0.000	0.767	0.000	0.828	0.876	0.625	0.500	0.625	0.880	0.750	0.825	0.878	
		0.581				0.886				0.888				0.879					

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** Walker St & Katella Ave  
**City:** Cypress  
**Control:** Signalized

**Project ID:** 18-01205-009  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Walker St				Walker St				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	3 ET	0 ER	0 EU	1 WL	3 WT	1 WR	0 WU	
7:00 AM	0	0	1	0	135	2	25	0	32	357	2	2	0	447	57	1	1061
7:15 AM	0	0	0	0	197	1	36	0	45	398	3	2	1	348	78	1	1110
7:30 AM	2	0	0	0	176	3	34	0	43	387	3	1	4	423	100	1	1177
7:45 AM	0	0	0	0	240	4	53	0	65	399	4	4	2	389	98	1	1259
8:00 AM	1	0	0	0	177	3	49	0	52	342	4	3	1	408	89	2	1131
8:15 AM	2	0	2	0	172	2	57	0	53	286	2	6	1	390	71	0	1044
8:30 AM	1	1	0	0	114	0	49	0	59	315	2	4	0	285	79	0	909
8:45 AM	1	0	2	0	123	0	61	0	39	250	4	1	0	305	61	2	849
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	7	1	5	0	1334	15	364	0	388	2734	24	23	9	2995	633	8	8540
<b>PEAK HR :</b>	07:15 AM - 08:15 AM				77.88%	0.88%	21.25%	0.00%	12.24%	86.27%	0.76%	0.73%	0.25%	82.17%	17.37%	0.22%	TOTAL
<b>PEAK HR VOL :</b>	3	0	0	0	790	11	172	0	205	1526	14	10	8	1568	365	5	4677
<b>PEAK HR FACTOR :</b>	0.375	0.000	0.000	0.000	0.823	0.688	0.811	0.000	0.788	0.956	0.875	0.625	0.500	0.927	0.913	0.625	0.929
	0.375				0.819				0.930				0.921				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	3 ET	0 ER	0 EU	1 WL	3 WT	1 WR	0 WU	
4:00 PM	4	3	1	0	107	1	41	0	69	385	0	6	0	387	135	0	1139
4:15 PM	4	0	3	0	131	0	49	0	61	327	0	2	0	340	108	0	1025
4:30 PM	18	4	1	1	129	0	47	0	79	459	1	10	0	477	148	0	1374
4:45 PM	2	4	0	0	137	0	44	0	60	373	1	3	0	359	141	0	1124
5:00 PM	3	1	3	0	163	1	55	0	90	400	2	8	0	478	164	0	1368
5:15 PM	4	6	0	0	167	0	67	0	53	368	1	9	0	412	149	0	1236
5:30 PM	3	2	0	0	149	0	60	0	75	431	1	11	0	428	135	0	1295
5:45 PM	3	4	0	0	133	0	56	0	45	360	0	9	0	348	108	1	1067
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	41	24	8	1	1116	2	419	0	532	3103	6	58	0	3229	1088	1	9628
<b>PEAK HR :</b>	04:30 PM - 05:30 PM				72.61%	0.13%	27.26%	0.00%	14.38%	83.89%	0.16%	1.57%	0.00%	74.78%	25.20%	0.02%	TOTAL
<b>PEAK HR VOL :</b>	27	15	4	1	596	1	213	0	282	1600	5	30	0	1726	602	0	5102
<b>PEAK HR FACTOR :</b>	0.375	0.625	0.333	0.250	0.892	0.250	0.795	0.000	0.783	0.871	0.625	0.750	0.000	0.903	0.918	0.000	0.928
	0.490				0.865				0.873				0.907				

# National Data & Surveying Services

**Location:** Valley View St & Katella Ave  
**City:** Cypress  
**Control:** Signalized

## Intersection Turning Movement Count

**Project ID:** 18-01205-010  
**Date:** 10/10/2018

### Total

NS/EW Streets:	Valley View St				Valley View St				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	3 NL	3 NT	1 NR	0 NU	2 SL	3 ST	1 SR	0 SU	2 EL	3 ET	1 ER	0 EU	2 WL	3 WT	1 WR	0 WU	
7:00 AM	231	331	37	0	48	247	49	1	39	225	140	0	26	227	21	0	1622
7:15 AM	184	358	58	0	26	270	52	0	56	291	184	0	36	261	42	0	1818
7:30 AM	202	368	57	1	49	249	57	1	59	209	179	0	52	324	45	1	1853
7:45 AM	205	345	73	0	50	236	50	4	69	272	173	0	52	341	21	1	1892
8:00 AM	230	427	84	0	54	332	48	2	50	184	153	0	58	248	32	2	1904
8:15 AM	209	306	66	0	53	269	53	0	41	195	147	1	57	280	20	2	1699
8:30 AM	184	332	63	0	29	268	47	0	43	159	131	0	28	166	35	2	1487
8:45 AM	176	295	60	1	43	199	49	0	50	164	117	1	28	179	36	1	1399
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	1621	2762	498	2	352	2070	405	8	407	1699	1224	2	337	2026	252	9	13674
<b>PEAK HR :</b>	33.20%	56.56%	10.20%	0.04%	12.42%	73.02%	14.29%	0.28%	12.21%	50.99%	36.73%	0.06%	12.84%	77.21%	9.60%	0.34%	
<b>PEAK HR VOL :</b>	821	1498	272	1	179	1087	207	7	234	956	689	0	198	1174	140	4	7467
<b>PEAK HR FACTOR :</b>	0.892	0.877	0.810	0.250	0.829	0.819	0.908	0.438	0.848	0.821	0.936	0.000	0.853	0.861	0.778	0.500	0.980
	0.874				0.849				0.885				0.898				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	3 NL	3 NT	1 NR	0 NU	2 SL	3 ST	1 SR	0 SU	2 EL	3 ET	1 ER	0 EU	2 WL	3 WT	1 WR	0 WU	
4:00 PM	145	323	36	3	53	302	61	0	61	245	232	0	63	212	50	1	1787
4:15 PM	154	340	45	3	39	296	50	1	66	209	204	1	49	206	39	2	1704
4:30 PM	160	387	51	1	75	343	56	1	68	248	269	1	65	271	52	1	2049
4:45 PM	160	363	36	1	33	296	43	0	76	276	228	2	73	224	57	1	1869
5:00 PM	164	382	54	7	66	397	73	2	49	259	268	1	90	272	58	1	2143
5:15 PM	170	342	35	2	50	315	58	1	48	280	240	1	94	231	50	0	1917
5:30 PM	159	420	62	5	59	351	55	0	56	280	229	4	61	235	43	1	2020
5:45 PM	165	423	48	3	47	242	50	0	52	261	195	4	63	226	49	0	1828
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	1277	2980	367	25	422	2542	446	5	476	2058	1865	14	558	1877	398	7	15317
<b>PEAK HR :</b>	27.47%	64.10%	7.89%	0.54%	12.36%	74.44%	13.06%	0.15%	10.79%	46.63%	42.26%	0.32%	19.65%	66.09%	14.01%	0.25%	
<b>PEAK HR VOL :</b>	654	1474	176	11	224	1351	230	4	241	1063	1005	5	322	998	217	3	7978
<b>PEAK HR FACTOR :</b>	0.962	0.952	0.815	0.393	0.747	0.851	0.788	0.500	0.793	0.949	0.934	0.625	0.856	0.917	0.935	0.750	0.931
	0.953				0.841				0.987				0.914				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Valley View St & Orangewood Ave  
City: Cypress  
Control: Signalized

Project ID: 19-01099-019  
Date: 5/15/2019

NS/EW Streets:		Valley View St				Valley View St				Orangewood Ave				Orangewood Ave				TOTAL
		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM		1 NL	3 NT	0 NR	0 NU	2 SL	3 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	0.5 WT	1.5 WR	0 WU	
7:00 AM		5	379	11	0	46	415	17	0	33	5	2	0	16	3	118	0	1050
7:15 AM		1	470	14	0	52	357	2	1	34	9	3	0	13	4	145	0	1105
7:30 AM		1	525	14	0	67	453	9	1	34	10	3	0	24	3	151	0	1295
7:45 AM		4	506	22	0	60	425	9	0	32	14	8	0	30	7	166	0	1283
8:00 AM		2	543	15	0	61	452	14	1	33	10	3	0	27	5	103	0	1269
8:15 AM		3	453	12	0	63	381	15	0	33	6	6	0	22	7	142	0	1143
8:30 AM		7	480	18	0	42	355	6	0	32	4	6	0	16	4	112	0	1082
8:45 AM		10	400	10	1	45	280	16	0	20	8	5	0	19	4	100	0	918
TOTAL VOLUMES :		NL 33	NT 3756	NR 116	NU 1	SL 436	ST 3118	SR 88	SU 3	EL 251	ET 66	ER 36	EU 0	WL 167	WT 37	WR 1037	WU 0	TOTAL 9145
APPROACH %'s :		0.84%	96.16%	2.97%	0.03%	11.96%	85.54%	2.41%	0.08%	71.10%	18.70%	10.20%	0.00%	13.46%	2.98%	83.56%	0.00%	
PEAK HR :		07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :		10	2027	63	0	251	1711	47	2	132	40	20	0	103	22	562	0	4990
PEAK HR FACTOR :		0.625	0.933	0.716	0.000	0.937	0.944	0.783	0.500	0.971	0.714	0.625	0.000	0.858	0.786	0.846	0.000	0.963
		0.938				0.949				0.889				0.846				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		1 NL	3 NT	0 NR	0 NU	2 SL	3 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	0.5 WT	1.5 WR	0 WU	
4:00 PM		3	454	16	3	102	526	15	0	23	3	1	0	14	3	94	0	1257
4:15 PM		5	450	26	0	112	482	26	2	22	13	4	0	18	8	113	0	1281
4:30 PM		2	442	20	0	143	573	44	0	19	4	3	0	23	4	117	0	1394
4:45 PM		5	478	25	1	130	463	24	0	25	10	7	0	22	9	117	0	1316
5:00 PM		1	523	24	1	164	625	38	1	26	7	5	0	20	5	100	0	1540
5:15 PM		9	448	28	1	146	475	31	0	31	7	5	0	21	9	120	0	1331
5:30 PM		1	476	23	0	137	541	43	1	30	13	5	0	24	19	108	0	1421
5:45 PM		8	465	29	1	132	454	29	1	36	10	11	0	19	16	98	0	1309
TOTAL VOLUMES :		NL 34	NT 3736	NR 191	NU 7	SL 1066	ST 4139	SR 250	SU 5	EL 212	ET 67	ER 41	EU 0	WL 161	WT 73	WR 867	WU 0	TOTAL 10849
APPROACH %'s :		0.86%	94.15%	4.81%	0.18%	19.52%	75.81%	4.58%	0.09%	66.25%	20.94%	12.81%	0.00%	14.62%	6.63%	78.75%	0.00%	
PEAK HR :		04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :		16	1925	100	3	577	2104	136	2	112	37	22	0	87	42	445	0	5608
PEAK HR FACTOR :		0.444	0.920	0.893	0.750	0.880	0.842	0.791	0.500	0.903	0.712	0.786	0.000	0.906	0.553	0.927	0.000	0.910
		0.931				0.851				0.891				0.950				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lexington Dr & Farquhar Ave  
City: Los Alamitos  
Control: 3-Way Stop(NB/SB/EB)

Project ID: 19-01099-018  
Date: 5/15/2019

Total

NS/EW Streets:	Lexington Dr				Lexington Dr				Farquhar Ave				Farquhar Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	2	1	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	4	6	0	0	0	36	8	0	7	0	22	0	0	0	0	83
	7:15 AM	3	10	0	0	0	38	14	0	7	0	18	0	0	0	0	90
	7:30 AM	2	20	0	0	0	36	30	0	12	0	11	0	0	0	0	111
	7:45 AM	3	18	0	0	0	61	18	0	24	0	31	0	0	0	0	155
	8:00 AM	1	16	0	0	0	74	15	0	17	0	23	0	0	0	0	146
	8:15 AM	4	15	0	0	0	46	11	0	24	0	19	0	0	0	0	119
	8:30 AM	3	13	0	0	0	48	6	0	13	0	19	0	0	0	0	102
8:45 AM	2	12	0	0	0	47	6	0	9	0	18	0	0	0	0	94	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	22	110	0	0	0	386	108	0	113	0	161	0	0	0	0	0	900
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	10	69	0	0	0	217	74	0	77	0	84	0	0	0	0	0	531
PEAK HR FACTOR :	0.625	0.863	0.000	0.000	0.000	0.733	0.617	0.000	0.802	0.000	0.677	0.000	0.000	0.000	0.000	0.000	0.856
	0.898				0.817				0.732								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	2	1	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	22	60	0	0	0	20	22	0	24	0	7	0	0	0	0	155
	4:15 PM	19	69	0	0	0	19	22	0	21	0	12	0	0	0	0	162
	4:30 PM	25	71	0	0	0	21	25	0	18	0	10	0	0	0	0	170
	4:45 PM	25	43	0	0	0	10	28	0	26	0	6	0	0	0	0	138
	5:00 PM	14	53	0	0	0	13	25	0	25	0	9	0	0	0	0	139
	5:15 PM	9	29	0	0	0	8	24	0	21	0	4	0	0	0	0	95
	5:30 PM	14	46	0	0	0	12	38	0	24	0	4	0	0	0	0	138
5:45 PM	10	31	0	0	0	10	25	0	24	0	3	0	0	0	0	103	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	138	402	0	0	0	113	209	0	183	0	55	0	0	0	0	0	1100
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	91	243	0	0	0	70	97	0	89	0	35	0	0	0	0	0	625
PEAK HR FACTOR :	0.910	0.856	0.000	0.000	0.000	0.833	0.866	0.000	0.856	0.000	0.729	0.000	0.000	0.000	0.000	0.000	0.919
	0.870				0.908				0.939								



National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Alamitos Blvd & Farquhar Ave  
City: Los Alamitos  
Control: Signalized

Project ID: 19-01099-017  
Date: 5/15/2019

NS/EW Streets:		Los Alamitos Blvd				Los Alamitos Blvd				Farquhar Ave				Farquhar Ave				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		0	3	0	0	1	3	0	0	0	0	0	0	1.5	0	0.5	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	0	257	24	0	25	194	0	0	0	0	0	0	38	0	25	0	563
	7:15 AM	0	398	27	0	13	256	0	0	0	0	0	0	46	0	25	0	765
	7:30 AM	0	477	31	0	30	330	0	0	0	0	0	0	100	0	21	0	989
	7:45 AM	0	421	65	0	33	382	0	0	0	0	0	0	107	0	38	0	1046
	8:00 AM	0	416	43	0	46	256	0	0	0	0	0	0	62	0	22	0	845
	8:15 AM	0	377	38	0	29	243	0	0	0	0	0	0	56	0	17	0	760
	8:30 AM	0	344	37	0	20	235	0	0	0	0	0	0	46	0	22	0	704
8:45 AM	0	321	28	0	19	255	0	0	0	0	0	0	54	0	15	0	692	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		0	3011	293	0	215	2151	0	0	0	0	0	0	509	0	185	0	6364
		0.00%	91.13%	8.87%	0.00%	9.09%	90.91%	0.00%	0.00%					73.34%	0.00%	26.66%	0.00%	
PEAK HR :		07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :		0	1712	166	0	122	1224	0	0	0	0	0	0	315	0	106	0	3645
PEAK HR FACTOR :		0.000	0.897	0.638	0.000	0.663	0.801	0.000	0.000	0.000	0.000	0.000	0.000	0.736	0.000	0.697	0.000	0.871
		0.924				0.811								0.726				
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		0	3	0	0	1	3	0	0	0	0	0	0	1.5	0	0.5	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	0	368	45	0	28	401	0	0	0	0	0	0	105	0	39	0	986
	4:15 PM	0	329	50	0	35	342	0	0	0	0	0	0	123	0	33	0	912
	4:30 PM	0	364	54	0	34	334	0	0	0	0	0	0	88	0	35	0	909
	4:45 PM	0	402	42	0	31	318	0	0	0	0	0	0	98	0	32	0	923
	5:00 PM	0	384	41	0	30	361	0	0	0	0	0	0	108	0	38	0	962
	5:15 PM	0	418	42	0	33	368	0	0	0	0	0	0	102	0	23	0	986
	5:30 PM	0	358	46	0	29	372	0	0	0	0	0	0	88	0	39	0	932
5:45 PM	0	394	36	0	37	386	0	0	0	0	0	0	94	0	36	0	983	
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		0	3017	356	0	257	2882	0	0	0	0	0	0	806	0	275	0	7593
		0.00%	89.45%	10.55%	0.00%	8.19%	91.81%	0.00%	0.00%					74.56%	0.00%	25.44%	0.00%	
PEAK HR :		05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :		0	1554	165	0	129	1487	0	0	0	0	0	0	392	0	136	0	3863
PEAK HR FACTOR :		0.000	0.929	0.897	0.000	0.872	0.963	0.000	0.000	0.000	0.000	0.000	0.000	0.907	0.000	0.872	0.000	0.979
		0.934				0.955								0.904				



---

## **APPENDIX C**

### **ICU WORKSHEETS**

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Los Alamitos/Cerritos	C	xxxxxx 0.704	C	xxxxxx 0.704	+ 0.000 V/C
# 2 Bloomfield/Cerritos	B	xxxxxx 0.693	B	xxxxxx 0.693	+ 0.000 V/C
# 3 Denni/Cerritos	A	xxxxxx 0.594	A	xxxxxx 0.594	+ 0.000 V/C
# 4 Moody/Cerritos	A	xxxxxx 0.572	A	xxxxxx 0.572	+ 0.000 V/C
# 5 Walker/Cerritos	B	xxxxxx 0.681	B	xxxxxx 0.681	+ 0.000 V/C
# 6 Valleyview/Cerritos	C	xxxxxx 0.731	C	xxxxxx 0.731	+ 0.000 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxxx 0.493	A	xxxxxx 0.493	+ 0.000 V/C
# 8 Walnut-Wallingsford/Katella	D	xxxxxx 0.811	D	xxxxxx 0.811	+ 0.000 V/C
# 9 Los Alamitos/Katella	C	xxxxxx 0.745	C	xxxxxx 0.745	+ 0.000 V/C
# 10 Bloomfield/Katella	D	xxxxxx 0.819	D	xxxxxx 0.819	+ 0.000 V/C
# 11 Lexington/Katella	A	xxxxxx 0.579	A	xxxxxx 0.579	+ 0.000 V/C
# 12 Cottonwood/Katella	A	xxxxxx 0.371	A	xxxxxx 0.371	+ 0.000 V/C
# 13 Siboney/Katella	A	xxxxxx 0.461	A	xxxxxx 0.461	+ 0.000 V/C
# 14 Winners/Katella	A	xxxxxx 0.396	A	xxxxxx 0.396	+ 0.000 V/C
# 15 Walker/Katella	B	xxxxxx 0.658	B	xxxxxx 0.658	+ 0.000 V/C
# 16 Valleyview/Katella	C	xxxxxx 0.723	C	xxxxxx 0.723	+ 0.000 V/C
# 17 Valleyview/Orangewood	C	xxxxxx 0.784	C	xxxxxx 0.784	+ 0.000 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxxx 0.614	B	xxxxxx 0.614	+ 0.000 V/C

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.704

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 38 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	178	621	335	94	753	90	130	800	129	247	706	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	621	335	94	753	90	130	800	129	247	706	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	621	335	94	753	90	130	800	129	247	706	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	621	335	94	753	90	130	800	129	247	706	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	621	335	94	753	90	130	800	129	247	706	138

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.05	0.18	0.20	0.06	0.22	0.05	0.08	0.24	0.08	0.15	0.21	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 36 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

## Volume Module:

Base Vol:	121	312	192	168	569	90	31	826	115	172	724	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	121	312	192	168	569	90	31	826	115	172	724	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	121	312	192	168	569	90	31	826	115	172	724	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	312	192	168	569	90	31	826	115	172	724	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	312	192	168	569	90	31	826	115	172	724	100

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.24	0.76	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.76	0.24
Final Sat.:	1700	2105	1295	1700	2936	464	1700	2984	416	1700	2987	413

## Capacity Analysis Module:

Vol/Sat:	0.07	0.15	0.15	0.10	0.19	0.19	0.02	0.28	0.28	0.10	0.24	0.24
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	23	79	49	239	153	128	63	845	86	112	793	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	79	49	239	153	128	63	845	86	112	793	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	79	49	239	153	128	63	845	86	112	793	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	79	49	239	153	128	63	845	86	112	793	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	79	49	239	153	128	63	845	86	112	793	137

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	0.53	0.32	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	259	889	552	1700	1700	1700	1700	3400	1700	1700	2899	501

## Capacity Analysis Module:

Vol/Sat:	0.09	0.09	0.09	0.14	0.09	0.08	0.04	0.25	0.05	0.07	0.27	0.27
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 27 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	1	0	1	1	0

## Volume Module:

Base Vol:	1	2	1	583	3	206	71	1065	2	0	869	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	1	583	3	206	71	1065	2	0	869	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	2	1	583	3	206	71	1065	2	0	869	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	1	583	3	206	71	1065	2	0	869	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	1	583	3	206	71	1065	2	0	869	174

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.50	1.00	0.50	1.99	0.01	1.00	1.00	1.99	0.01	1.00	1.67	0.33
Final Sat.:	850	1700	850	3383	17	1700	1700	3394	6	1700	2833	567

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.17	0.12	0.04	0.31	0.31	0.00	0.31	0.31
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.681  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 35 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

Volume Module:

Base Vol:	104	241	53	166	750	70	20	1139	490	120	841	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	241	53	166	750	70	20	1139	490	120	841	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	241	53	166	750	70	20	1139	490	120	841	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	241	53	166	750	70	20	1139	490	120	841	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	241	53	166	750	70	20	1139	490	120	841	106

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.83	0.17	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3110	290	1700	5100	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.07	0.03	0.10	0.24	0.24	0.01	0.22	0.29	0.07	0.25	0.06
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.731  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 41 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

## Volume Module:

Base Vol:	157	1223		44	111	1342		270	97	639		469	170	732		147	
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Initial Bse:	157	1223		44	111	1342		270	97	639		469	170	732		147	
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
PHF Volume:	157	1223		44	111	1342		270	97	639		469	170	732		147	
Reduct Vol:	0		0		0	0		0	0		0	0		0	0		0
Reduced Vol:	157	1223		44	111	1342		270	97	639		469	170	732		147	
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	
FinalVolume:	157	1223		44	111	1342		270	97	639		469	170	732		147	

## Saturation Flow Module:

Sat/Lane:	1700	1700		1700	1700	1700		1700	1700	1700		1700	1700	1700		1700
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	1.00	3.00		1.00	1.00	3.00		1.00	2.00	3.00		1.00	2.00	1.67		0.33
Final Sat.:	1700	5100		1700	1700	5100		1700	3400	5100		1700	3400	2831		569

## Capacity Analysis Module:

Vol/Sat:	0.09	0.24		0.03	0.07	0.26		0.16	0.03	0.13		0.28	0.05	0.26		0.26
Crit Moves:	****				****				****				****			

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.493  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 23 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Include					Ignore				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	0	0	2	1	1

## Volume Module:

Base Vol:	0	0	1067	0	0	398	118	1507	0	0	1454	833
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	1067	0	0	398	118	1507	0	0	1454	833
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	118	1507	0	0	1454	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	118	1507	0	0	1454	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	118	1507	0	0	1454	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.44	0.00	0.00	0.29	0.00	
Crit Moves:							****	****					

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.811

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 54 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	1	0	0	1

Volume Module:

Base Vol:	548	159	118	18	140	30	17	1901	338	182	1671	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	548	159	118	18	140	30	17	1901	338	182	1671	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	548	159	118	18	140	30	17	1901	338	182	1671	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	548	159	118	18	140	30	17	1901	338	182	1671	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	548	159	118	18	140	30	17	1901	338	182	1671	15

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.33	0.38	0.29	1.00	1.00	1.00	1.00	3.40	0.60	1.00	3.00	1.00
Final Sat.:	2258	655	486	1700	1700	1700	1700	5773	1027	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.24	0.24	0.24	0.01	0.08	0.02	0.01	0.33	0.33	0.11	0.33	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 43 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	388	939	433	155	937	185	169	1538	255	325	1229	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	388	939	433	155	937	185	169	1538	255	325	1229	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	388	939	433	155	937	185	169	1538	255	325	1229	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	388	939	433	155	937	185	169	1538	255	325	1229	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	388	939	433	155	937	185	169	1538	255	325	1229	84
OvlAdjVol:			271			101			61			6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.11	0.18	0.25	0.05	0.18	0.11	0.05	0.30	0.15	0.10	0.24	0.05
OvlAdjV/S:			0.16			0.06			0.04			0.00
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.819

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 56 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit					Prot+Permit					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	1	0	1	0	1	0	1	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	88	357	12	179	190	401	323	1591	41	30	1239	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	357	12	179	190	401	323	1591	41	30	1239	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	357	12	179	190	401	323	1591	41	30	1239	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	357	12	179	190	401	323	1591	41	30	1239	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	357	12	179	190	401	323	1591	41	30	1239	245

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.50	0.50
Final Sat.:	1700	3289	111	1700	1700	1700	1700	4972	128	1700	4258	842

## Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.11	0.11	0.11	0.24	0.19	0.32	0.32	0.02	0.29	0.29
Crit Moves:	****					****	****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.579  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 28 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	82	39	132	114	0	140	109	1604	106	118	1453	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	39	132	114	0	140	109	1604	106	118	1453	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	39	132	114	0	140	109	1604	106	118	1453	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	39	132	114	0	140	109	1604	106	118	1453	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	39	132	114	0	140	109	1604	106	118	1453	95

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	2.00	3.00	1.00	1.00	2.82	0.18
Final Sat.:	1700	1700	1700	1700	0	1700	3400	5100	1700	1700	4787	313

## Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.08	0.07	0.00	0.08	0.03	0.31	0.06	0.07	0.30	0.30
Crit Moves:	****		****				****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.371  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 19 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	0	7	0	3	6	1635	0	0	1539	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	7	0	3	6	1635	0	0	1539	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	7	0	3	6	1635	0	0	1539	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	7	0	3	6	1635	0	0	1539	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	7	0	3	6	1635	0	0	1539	7

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.40	0.00	0.60	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2380	0	1020	1700	5100	0	0	5077	23

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.30	0.30
Crit Moves:				****				****				****

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.461  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 22 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	2	0	2	1	0	1	0	3	0	1

## Volume Module:

Base Vol:	42	2	61	36	0	12	124	1697	31	27	1675	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	2	61	36	0	12	124	1697	31	27	1675	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	2	61	36	0	12	124	1697	31	27	1675	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	2	61	36	0	12	124	1697	31	27	1675	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	2	61	36	0	12	124	1697	31	27	1675	16

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	2.00	0.00	1.00	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1623	77	1700	3400	0	1700	3400	5009	91	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.04	0.01	0.00	0.01	0.04	0.34	0.34	0.02	0.33	0.01
Crit Moves:	****		****				****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.396  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 20 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		0	1		0		0	1		0		2	1		0		2

## Volume Module:

Base Vol:	9	1	6	4	2	2	21	1478	57	63	1577	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1	6	4	2	2	21	1478	57	63	1577	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	1	6	4	2	2	21	1478	57	63	1577	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	6	4	2	2	21	1478	57	63	1577	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1	6	4	2	2	21	1478	57	63	1577	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.14	0.86	1.00	0.50	0.50	1.00	2.89	0.11	1.00	2.99	0.01
Final Sat.:	1700	243	1457	1700	850	850	1700	4911	189	1700	5081	19

## Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.30	0.30	0.04	0.31	0.31
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 33 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase				Split Phase				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	1	1	0	0	2	2	0	2	1	0	1	0	3	0	1

## Volume Module:

Base Vol:	3	0	0	790	11	172	215	1526	14	13	1568	365
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	0	790	11	172	215	1526	14	13	1568	365
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	790	11	172	215	1526	14	13	1568	365
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	790	11	172	215	1526	14	13	1568	365
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	790	11	172	215	1526	14	13	1568	365

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.97	0.03	2.00	2.00	2.97	0.03	1.00	3.00	1.00
Final Sat.:	1700	1700	0	3353	47	3400	3400	5054	46	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.24	0.24	0.05	0.06	0.30	0.30	0.01	0.31	0.21
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.723  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 40 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	822	1498	272	186	1087	207	234	956	689	202	1174	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	822	1498	272	186	1087	207	234	956	689	202	1174	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	822	1498	272	186	1087	207	234	956	0	202	1174	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	822	1498	272	186	1087	207	234	956	0	202	1174	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	822	1498	272	186	1087	207	234	956	0	202	1174	140

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.29	0.16	0.05	0.21	0.12	0.07	0.19	0.00	0.06	0.23	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.784

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

Volume Module:

Base Vol:	10	2027	63	253	1711	47	132	40	20	103	22	562
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	2027	63	253	1711	47	132	40	20	103	22	562
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	2027	63	253	1711	47	132	40	20	103	22	562
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2027	63	253	1711	47	132	40	20	103	22	562
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2027	63	253	1711	47	132	40	20	103	22	562

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.91	0.09	2.00	3.00	1.00	1.00	1.33	0.67	1.00	0.08	1.92
Final Sat.:	1700	4946	154	3400	5100	1700	1700	2267	1133	1700	128	3272

Capacity Analysis Module:

Vol/Sat:	0.01	0.41	0.41	0.07	0.34	0.03	0.08	0.02	0.02	0.06	0.17	0.17
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.614  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 30 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

Volume Module:

Base Vol:	0	1712	166	122	1224	0	0	0	0	315	0	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1712	166	122	1224	0	0	0	0	315	0	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1712	166	122	1224	0	0	0	0	315	0	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1712	166	122	1224	0	0	0	0	315	0	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1712	166	122	1224	0	0	0	0	315	0	106

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.73	0.27	1.00	3.00	0.00	0.00	0.00	0.00	1.50	0.00	0.50
Final Sat.:	0	4649	451	1700	5100	0	0	0	0	2544	0	856

Capacity Analysis Module:

Vol/Sat:	0.00	0.37	0.37	0.07	0.24	0.00	0.00	0.00	0.00	0.12	0.00	0.12
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Los Alamitos/Cerritos	C	xxxxxx 0.745	C	xxxxxx 0.745	+ 0.000 V/C
# 2 Bloomfield/Cerritos	C	xxxxxx 0.739	C	xxxxxx 0.739	+ 0.000 V/C
# 3 Denni/Cerritos	C	xxxxxx 0.751	C	xxxxxx 0.751	+ 0.000 V/C
# 4 Moody/Cerritos	C	xxxxxx 0.756	C	xxxxxx 0.756	+ 0.000 V/C
# 5 Walker/Cerritos	C	xxxxxx 0.730	C	xxxxxx 0.730	+ 0.000 V/C
# 6 Valleyview/Cerritos	D	xxxxxx 0.834	D	xxxxxx 0.834	+ 0.000 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxxx 0.590	A	xxxxxx 0.590	+ 0.000 V/C
# 8 Walnut-Wallingsford/Katella	C	xxxxxx 0.711	C	xxxxxx 0.711	+ 0.000 V/C
# 9 Los Alamitos/Katella	C	xxxxxx 0.745	C	xxxxxx 0.745	+ 0.000 V/C
# 10 Bloomfield/Katella	C	xxxxxx 0.742	C	xxxxxx 0.742	+ 0.000 V/C
# 11 Lexington/Katella	A	xxxxxx 0.592	A	xxxxxx 0.592	+ 0.000 V/C
# 12 Cottonwood/Katella	A	xxxxxx 0.447	A	xxxxxx 0.447	+ 0.000 V/C
# 13 Siboney/Katella	A	xxxxxx 0.524	A	xxxxxx 0.524	+ 0.000 V/C
# 14 Winners/Katella	A	xxxxxx 0.521	A	xxxxxx 0.521	+ 0.000 V/C
# 15 Walker/Katella	B	xxxxxx 0.687	B	xxxxxx 0.687	+ 0.000 V/C
# 16 Valleyview/Katella	C	xxxxxx 0.749	C	xxxxxx 0.749	+ 0.000 V/C
# 17 Valleyview/Orangewood	D	xxxxxx 0.826	D	xxxxxx 0.826	+ 0.000 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxxx 0.618	B	xxxxxx 0.618	+ 0.000 V/C

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 43 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	261	803	409	84	542	66	129	801	165	296	798	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	261	803	409	84	542	66	129	801	165	296	798	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	261	803	409	84	542	66	129	801	165	296	798	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	803	409	84	542	66	129	801	165	296	798	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	261	803	409	84	542	66	129	801	165	296	798	115

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.08	0.24	0.24	0.05	0.16	0.04	0.08	0.24	0.10	0.17	0.23	0.07
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.739

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 42 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	108	514	158	61	285	99	159	1104	104	98	1055	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	514	158	61	285	99	159	1104	104	98	1055	177
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	514	158	61	285	99	159	1104	104	98	1055	177
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	514	158	61	285	99	159	1104	104	98	1055	177
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	514	158	61	285	99	159	1104	104	98	1055	177

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.53	0.47	1.00	1.48	0.52	1.00	1.83	0.17	1.00	1.71	0.29
Final Sat.:	1700	2601	799	1700	2523	877	1700	3107	293	1700	2912	488

Capacity Analysis Module:

Vol/Sat:	0.06	0.20	0.20	0.04	0.11	0.11	0.09	0.36	0.36	0.06	0.36	0.36
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.751  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 44 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1 0	0	1	0 1	1	0	2 0	1	1	0 1

## Volume Module:

Base Vol:	56	180	77	95	78	81	123	1192	33	49	1113	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	180	77	95	78	81	123	1192	33	49	1113	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	180	77	95	78	81	123	1192	33	49	1113	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	180	77	95	78	81	123	1192	33	49	1113	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	180	77	95	78	81	123	1192	33	49	1113	209

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.18	0.57	0.25	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.68	0.32
Final Sat.:	304	978	418	1700	1700	1700	1700	3400	1700	1700	2862	538

## Capacity Analysis Module:

Vol/Sat:	0.18	0.18	0.18	0.06	0.05	0.05	0.07	0.35	0.02	0.03	0.39	0.39
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.756  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 44 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	1	0	1	1	0

## Volume Module:

Base Vol:	3	0	0	250	0	151	224	1131	1	0	1228	416
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	0	250	0	151	224	1131	1	0	1228	416
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	250	0	151	224	1131	1	0	1228	416
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	250	0	151	224	1131	1	0	1228	416
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	250	0	151	224	1131	1	0	1228	416

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	2.00	0.00	1.00	1.00	1.99	0.01	1.00	1.49	0.51
Final Sat.:	1700	1700	0	3400	0	1700	1700	3397	3	1700	2540	860

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.09	0.13	0.33	0.33	0.00	0.48	0.48
Crit Moves:	****					****	****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 41 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

Volume Module:

Base Vol:	502	737	213	106	449	46	95	1068	237	93	1124	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	502	737	213	106	449	46	95	1068	237	93	1124	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	502	737	213	106	449	46	95	1068	237	93	1124	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	737	213	106	449	46	95	1068	237	93	1124	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	737	213	106	449	46	95	1068	237	93	1124	157

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.81	0.19	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3084	316	1700	5100	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.15	0.22	0.13	0.06	0.15	0.15	0.06	0.21	0.14	0.05	0.33	0.09
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.834

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 60 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

Volume Module:

Base Vol:	345	1893	224	146	1059	201	317	854	280	100	667	128
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	1893	224	146	1059	201	317	854	280	100	667	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	345	1893	224	146	1059	201	317	854	280	100	667	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1893	224	146	1059	201	317	854	280	100	667	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	1893	224	146	1059	201	317	854	280	100	667	128

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.68	0.32
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2853	547

Capacity Analysis Module:

Vol/Sat:	0.20	0.37	0.13	0.09	0.21	0.12	0.09	0.17	0.16	0.03	0.23	0.23
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.590  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 28 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

## Volume Module:

Base Vol:	0	0	742	0	0	159	184	1835	0	0	1675	846
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	742	0	0	159	184	1835	0	0	1675	846
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	184	1835	0	0	1675	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	184	1835	0	0	1675	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	184	1835	0	0	1675	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.54	0.00	0.00	0.33	0.00	
Crit Moves:							****	****					

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.711  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 38 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	3	1	0	1

## Volume Module:

Base Vol:	307	74	160	19	66	60	25	2057	365	182	2079	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	307	74	160	19	66	60	25	2057	365	182	2079	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	307	74	160	19	66	60	25	2057	365	182	2079	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	307	74	160	19	66	60	25	2057	365	182	2079	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	307	74	160	19	66	60	25	2057	365	182	2079	11

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.14	0.27	0.59	1.00	1.00	1.00	1.00	3.40	0.60	1.00	3.00	1.00
Final Sat.:	1929	465	1006	1700	1700	1700	1700	5775	1025	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.01	0.04	0.04	0.01	0.36	0.36	0.11	0.41	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.745

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 43 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

Volume Module:

Base Vol:	456	878	366	137	965	219	255	1438	493	302	1514	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	456	878	366	137	965	219	255	1438	493	302	1514	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	456	878	366	137	965	219	255	1438	493	302	1514	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	878	366	137	965	219	255	1438	493	302	1514	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	878	366	137	965	219	255	1438	493	302	1514	95
OvlAdjVol:			215			91			265			27

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.13	0.17	0.22	0.04	0.19	0.13	0.08	0.28	0.29	0.09	0.30	0.06
OvlAdjV/S:			0.13			0.05			0.16			0.02
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.742  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 42 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit					Prot+Permit					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		1	1		0		1	1		0		2	1		0		2

## Volume Module:

Base Vol:	46	105	25	171	160	181	279	1614	77	59	1747	235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	105	25	171	160	181	279	1614	77	59	1747	235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	105	25	171	160	181	279	1614	77	59	1747	235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	105	25	171	160	181	279	1614	77	59	1747	235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	105	25	171	160	181	279	1614	77	59	1747	235

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.00	1.00	1.00	2.86	0.14	1.00	2.64	0.36
Final Sat.:	1700	2746	654	1700	1700	1700	1700	4868	232	1700	4495	605

## Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.04	0.10	0.09	0.11	0.16	0.33	0.33	0.03	0.39	0.39
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.592  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 28 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	94	55	161	126	0	107	105	1524	72	124	1674	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	55	161	126	0	107	105	1524	72	124	1674	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	55	161	126	0	107	105	1524	72	124	1674	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	55	161	126	0	107	105	1524	72	124	1674	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	55	161	126	0	107	105	1524	72	124	1674	99

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.08	0.00	0.92	2.00	3.00	1.00	1.00	2.83	0.17
Final Sat.:	1700	1700	1700	1839	0	1561	3400	5100	1700	1700	4815	285

## Capacity Analysis Module:

Vol/Sat:	0.06	0.03	0.09	0.07	0.00	0.07	0.03	0.30	0.04	0.07	0.35	0.35
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.447  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 22 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	

## Volume Module:

Base Vol:	0	0	0	14	0	9	28	1836	0	0	1897	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	14	0	9	28	1836	0	0	1897	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	9	28	1836	0	0	1897	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	0	9	28	1836	0	0	1897	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	0	9	28	1836	0	0	1897	8

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.22	0.00	0.78	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2070	0	1330	1700	5100	0	0	5079	21

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.36	0.00	0.00	0.37	0.37
Crit Moves:				****				****				****

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.524

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 25 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	2	0	2	1	0	1	0	3	0	1

Volume Module:

Base Vol:	82	4	58	75	3	64	129	1701	32	68	1825	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	4	58	75	3	64	129	1701	32	68	1825	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	4	58	75	3	64	129	1701	32	68	1825	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	4	58	75	3	64	129	1701	32	68	1825	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	4	58	75	3	64	129	1701	32	68	1825	38

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.59	0.06	1.35	2.00	2.94	0.06	1.00	3.00	1.00
Final Sat.:	1621	79	1700	2694	108	2299	3400	5006	94	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.05	0.05	0.03	0.03	0.03	0.03	0.04	0.34	0.34	0.04	0.36	0.02
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.521  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 25 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted				Permitted				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		0	1		0		0	1		0		2	1		0		2

## Volume Module:

Base Vol:	48	2	50	32	0	46	110	1728	10	38	1785	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	2	50	32	0	46	110	1728	10	38	1785	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	2	50	32	0	46	110	1728	10	38	1785	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	2	50	32	0	46	110	1728	10	38	1785	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	2	50	32	0	46	110	1728	10	38	1785	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.04	0.96	1.00	0.00	1.00	1.00	2.98	0.02	1.00	2.99	0.01
Final Sat.:	1700	65	1635	1700	0	1700	1700	5071	29	1700	5083	17

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.03	0.02	0.00	0.03	0.06	0.34	0.34	0.02	0.35	0.35
Crit Moves:	****					****	****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.687

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

Volume Module:

Base Vol:	27	15	4	596	1	213	312	1600	5	0	1726	602
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	15	4	596	1	213	312	1600	5	0	1726	602
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	15	4	596	1	213	312	1600	5	0	1726	602
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	15	4	596	1	213	312	1600	5	0	1726	602
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	15	4	596	1	213	312	1600	5	0	1726	602

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.99	0.01	2.00	2.00	2.99	0.01	1.00	3.00	1.00
Final Sat.:	1700	1404	296	3394	6	3400	3400	5084	16	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.02	0.01	0.01	0.18	0.18	0.06	0.09	0.31	0.31	0.00	0.34	0.35
Crit Moves:	****			****			****					****

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.749

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 43 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

Volume Module:

Base Vol:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	665	1474	176	228	1351	230	246	1063	0	325	998	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	665	1474	176	228	1351	230	246	1063	0	325	998	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	665	1474	176	228	1351	230	246	1063	0	325	998	217

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.13	0.29	0.10	0.07	0.26	0.14	0.07	0.21	0.00	0.10	0.20	0.13
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.826  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 58 Level Of Service: D  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	19	1925	100	579	2104	136	112	37	22	87	42	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	1925	100	579	2104	136	112	37	22	87	42	445
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	1925	100	579	2104	136	112	37	22	87	42	445
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	1925	100	579	2104	136	112	37	22	87	42	445
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	1925	100	579	2104	136	112	37	22	87	42	445

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.85	0.15	2.00	3.00	1.00	1.00	1.25	0.75	1.00	0.17	1.83
Final Sat.:	1700	4848	252	3400	5100	1700	1700	2132	1268	1700	293	3107

## Capacity Analysis Module:

Vol/Sat:	0.01	0.40	0.40	0.17	0.41	0.08	0.07	0.02	0.02	0.05	0.14	0.14
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.618

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

## Volume Module:

Base Vol:	0	1554	165	129	1487	0	0	0	0	392	0	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1554	165	129	1487	0	0	0	0	392	0	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1554	165	129	1487	0	0	0	0	392	0	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1554	165	129	1487	0	0	0	0	392	0	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1554	165	129	1487	0	0	0	0	392	0	136

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.71	0.29	1.00	3.00	0.00	0.00	0.00	0.00	1.48	0.00	0.52
Final Sat.:	0	4610	490	1700	5100	0	0	0	0	2524	0	876

## Capacity Analysis Module:

Vol/Sat:	0.00	0.34	0.34	0.08	0.29	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Los Alamitos/Cerritos	C xxxxxx 0.704	C xxxxxx 0.705	+ 0.001 V/C
# 2 Bloomfield/Cerritos	B xxxxxx 0.693	B xxxxxx 0.693	+ 0.000 V/C
# 3 Denni/Cerritos	A xxxxxx 0.594	A xxxxxx 0.594	+ 0.000 V/C
# 4 Moody/Cerritos	A xxxxxx 0.572	A xxxxxx 0.572	+ 0.000 V/C
# 5 Walker/Cerritos	B xxxxxx 0.681	B xxxxxx 0.684	+ 0.003 V/C
# 6 Valleyview/Cerritos	C xxxxxx 0.731	C xxxxxx 0.733	+ 0.001 V/C
# 7 I-605 NB Ramps/Katella	A xxxxxx 0.493	A xxxxxx 0.498	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	D xxxxxx 0.811	D xxxxxx 0.815	+ 0.003 V/C
# 9 Los Alamitos/Katella	C xxxxxx 0.745	C xxxxxx 0.752	+ 0.007 V/C
# 10 Bloomfield/Katella	D xxxxxx 0.819	D xxxxxx 0.828	+ 0.009 V/C
# 11 Lexington/Katella	A xxxxxx 0.579	A xxxxxx 0.585	+ 0.007 V/C
# 12 Cottonwood/Katella	A xxxxxx 0.371	A xxxxxx 0.377	+ 0.006 V/C
# 13 Siboney/Katella	A xxxxxx 0.461	A xxxxxx 0.480	+ 0.019 V/C
# 14 Winners/Katella	A xxxxxx 0.396	A xxxxxx 0.405	+ 0.009 V/C
# 15 Walker/Katella	B xxxxxx 0.658	B xxxxxx 0.666	+ 0.008 V/C
# 16 Valleyview/Katella	C xxxxxx 0.723	C xxxxxx 0.730	+ 0.007 V/C
# 17 Valleyview/Orangewood	C xxxxxx 0.784	C xxxxxx 0.786	+ 0.003 V/C
# 19 Los Alamitos/Fraquhar	B xxxxxx 0.614	B xxxxxx 0.615	+ 0.001 V/C



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.705

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 38 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	178	621	335	94	753	90	130	800	129	247	706	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	621	335	94	753	90	130	800	129	247	706	138
Added Vol:	0	5	0	0	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	178	626	335	94	756	90	130	800	129	247	706	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	626	335	94	756	90	130	800	129	247	706	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	626	335	94	756	90	130	800	129	247	706	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	626	335	94	756	90	130	800	129	247	706	138

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.05	0.18	0.20	0.06	0.22	0.05	0.08	0.24	0.08	0.15	0.21	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 36 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	1	0	1	1	0	1	0	1	1	0

## Volume Module:

Base Vol:	121	312	192	168	569	90	31	826	115	172	724	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	121	312	192	168	569	90	31	826	115	172	724	100
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	121	312	192	168	570	90	31	826	115	172	724	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	121	312	192	168	570	90	31	826	115	172	724	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	312	192	168	570	90	31	826	115	172	724	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	312	192	168	570	90	31	826	115	172	724	100

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.24	0.76	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.76	0.24
Final Sat.:	1700	2105	1295	1700	2936	464	1700	2984	416	1700	2987	413

## Capacity Analysis Module:

Vol/Sat:	0.07	0.15	0.15	0.10	0.19	0.19	0.02	0.28	0.28	0.10	0.24	0.24
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	23	79	49	239	153	128	63	845	86	112	793	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	79	49	239	153	128	63	845	86	112	793	137
Added Vol:	0	0	0	0	1	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	79	49	239	154	128	63	845	86	112	793	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	79	49	239	154	128	63	845	86	112	793	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	79	49	239	154	128	63	845	86	112	793	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	79	49	239	154	128	63	845	86	112	793	137

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	0.53	0.32	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	259	889	552	1700	1700	1700	1700	3400	1700	1700	2899	501

## Capacity Analysis Module:

Vol/Sat:	0.09	0.09	0.09	0.14	0.09	0.08	0.04	0.25	0.05	0.07	0.27	0.27
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	0	1	1	0	1

## Volume Module:

Base Vol:	1	2	1	583	3	206	71	1065	2	0	869	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	2	1	583	3	206	71	1065	2	0	869	174
Added Vol:	0	0	0	1	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	1	584	3	206	71	1065	2	0	869	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	2	1	584	3	206	71	1065	2	0	869	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	1	584	3	206	71	1065	2	0	869	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	1	584	3	206	71	1065	2	0	869	174

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.50	1.00	0.50	1.99	0.01	1.00	1.00	1.99	0.01	1.00	1.67	0.33
Final Sat.:	850	1700	850	3383	17	1700	1700	3394	6	1700	2833	567

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.17	0.12	0.04	0.31	0.31	0.00	0.31	0.31
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.684

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	104	241	53	166	750	70	20	1139	490	120	841	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	241	53	166	750	70	20	1139	490	120	841	106
Added Vol:	0	5	5	0	3	0	0	0	1	3	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	104	246	58	166	753	70	20	1139	491	123	841	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	246	58	166	753	70	20	1139	491	123	841	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	246	58	166	753	70	20	1139	491	123	841	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	246	58	166	753	70	20	1139	491	123	841	106

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.83	0.17	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3111	289	1700	5100	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.03	0.07	0.03	0.10	0.24	0.24	0.01	0.22	0.29	0.07	0.25	0.06
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.733

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 41 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

## Volume Module:

Base Vol:	157	1223	44	111	1342	270	97	639	469	170	732	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	1223	44	111	1342	270	97	639	469	170	732	147
Added Vol:	0	10	0	0	7	0	0	5	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	157	1233	44	111	1349	270	97	644	469	170	735	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	1233	44	111	1349	270	97	644	469	170	735	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1233	44	111	1349	270	97	644	469	170	735	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1233	44	111	1349	270	97	644	469	170	735	147

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.67	0.33
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2833	567

## Capacity Analysis Module:

Vol/Sat:	0.09	0.24	0.03	0.07	0.26	0.16	0.03	0.13	0.28	0.05	0.26	0.26
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.498

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

## Volume Module:

Base Vol:	0	0	1067	0	0	398	118	1507	0	0	1454	833
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	1067	0	0	398	118	1507	0	0	1454	833
Added Vol:	0	0	6	0	0	0	0	15	0	0	19	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1073	0	0	398	118	1522	0	0	1473	847
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	118	1522	0	0	1473	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	118	1522	0	0	1473	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	118	1522	0	0	1473	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.45	0.00	0.00	0.29	0.00
----------	------	------	------	------	------	------	------	------	------	------	------	------

Crit Moves: \*\*\*\*\*

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.815

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 55 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	3	1	0	1

## Volume Module:

Base Vol:	548	159	118	18	140	30	17	1901	338	182	1671	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	548	159	118	18	140	30	17	1901	338	182	1671	15
Added Vol:	0	0	0	0	0	0	0	22	0	0	32	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	548	159	118	18	140	30	17	1923	338	182	1703	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	548	159	118	18	140	30	17	1923	338	182	1703	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	548	159	118	18	140	30	17	1923	338	182	1703	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	548	159	118	18	140	30	17	1923	338	182	1703	15

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.33	0.38	0.29	1.00	1.00	1.00	1.00	3.40	0.60	1.00	3.00	1.00
Final Sat.:	2258	655	486	1700	1700	1700	1700	5783	1017	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.24	0.24	0.24	0.01	0.08	0.02	0.01	0.33	0.33	0.11	0.33	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.752

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	388	939	433	155	937	185	169	1538	255	325	1229	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	388	939	433	155	937	185	169	1538	255	325	1229	84
Added Vol:	0	0	6	3	0	0	0	22	0	9	32	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	388	939	439	158	937	185	169	1560	255	334	1261	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	388	939	439	158	937	185	169	1560	255	334	1261	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	388	939	439	158	937	185	169	1560	255	334	1261	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	388	939	439	158	937	185	169	1560	255	334	1261	89
OvlAdjVol:			272			101			61			10

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.11	0.18	0.26	0.05	0.18	0.11	0.05	0.31	0.15	0.10	0.25	0.05
OvlAdjV/S:			0.16			0.06			0.04			0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.828

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 58 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit					Prot+Permit					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		1 1 0	1		0		1 0 1	1		0		2 1 0	1		0		2 1 0

## Volume Module:

Base Vol:	88	357	12	179	190	401	323	1591	41	30	1239	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	357	12	179	190	401	323	1591	41	30	1239	245
Added Vol:	0	0	0	1	0	0	0	31	0	0	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	357	12	180	190	401	323	1622	41	30	1285	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	357	12	180	190	401	323	1622	41	30	1285	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	357	12	180	190	401	323	1622	41	30	1285	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	357	12	180	190	401	323	1622	41	30	1285	245

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.00	1.00	1.00	2.93	0.07	1.00	2.52	0.48
Final Sat.:	1700	3289	111	1700	1700	1700	1700	4974	126	1700	4283	817

## Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.11	0.11	0.11	0.24	0.19	0.33	0.33	0.02	0.30	0.30
Crit Moves:	****					****	****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	82	39	132	114	0	140	109	1604	106	118	1453	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	39	132	114	0	140	109	1604	106	118	1453	95
Added Vol:	0	0	0	1	0	0	0	32	0	0	47	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	39	132	115	0	140	109	1636	106	118	1500	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	39	132	115	0	140	109	1636	106	118	1500	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	39	132	115	0	140	109	1636	106	118	1500	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	39	132	115	0	140	109	1636	106	118	1500	96

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	2.00	3.00	1.00	1.00	2.82	0.18
Final Sat.:	1700	1700	1700	1700	0	1700	3400	5100	1700	1700	4793	307

## Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.08	0.07	0.00	0.08	0.03	0.32	0.06	0.07	0.31	0.31
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.377

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 19 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	

## Volume Module:

Base Vol:	0	0	0	7	0	3	6	1635	0	0	1539	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	7	0	3	6	1635	0	0	1539	7
Added Vol:	0	0	0	0	0	0	0	33	0	0	48	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	7	0	3	6	1668	0	0	1587	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	7	0	3	6	1668	0	0	1587	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	7	0	3	6	1668	0	0	1587	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	7	0	3	6	1668	0	0	1587	7

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.40	0.00	0.60	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2380	0	1020	1700	5100	0	0	5078	22

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.31	0.31
Crit Moves:				****				****				****

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.480

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 23 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	2	0	2	1	0	1	0	3	0	1

## Volume Module:

Base Vol:	42	2	61	36	0	12	124	1697	31	27	1675	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	2	61	36	0	12	124	1697	31	27	1675	16
Added Vol:	0	0	0	34	0	34	12	23	0	11	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	2	61	70	0	46	136	1720	31	38	1690	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	2	61	70	0	46	136	1720	31	38	1690	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	2	61	70	0	46	136	1720	31	38	1690	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	2	61	70	0	46	136	1720	31	38	1690	16

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.81	xxxx	1.19	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1623	77	1700	3078	0	2022	3400	5010	90	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.04	0.02	0.00	0.02	0.04	0.34	0.34	0.02	0.33	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.405

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	9	1	6	4	2	2	21	1478	57	63	1577	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1	6	4	2	2	21	1478	57	63	1577	6
Added Vol:	0	0	0	4	0	0	23	45	0	0	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1	6	8	2	2	44	1523	57	63	1611	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	1	6	8	2	2	44	1523	57	63	1611	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	6	8	2	2	44	1523	57	63	1611	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1	6	8	2	2	44	1523	57	63	1611	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.14	0.86	1.00	0.50	0.50	1.00	2.89	0.11	1.00	2.99	0.01
Final Sat.:	1700	243	1457	1700	850	850	1700	4916	184	1700	5081	19

## Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.31	0.31	0.04	0.32	0.32
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.666

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 34 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	3	0	0	790	11	172	215	1526	14	13	1568	365
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	0	790	11	172	215	1526	14	13	1568	365
Added Vol:	0	0	0	0	0	8	10	38	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	790	11	180	225	1564	14	13	1594	365
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	790	11	180	225	1564	14	13	1594	365
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	790	11	180	225	1564	14	13	1594	365
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	790	11	180	225	1564	14	13	1594	365

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.97	0.03	2.00	2.00	2.97	0.03	1.00	3.00	1.00
Final Sat.:	1700	1700	0	3353	47	3400	3400	5055	45	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.24	0.24	0.05	0.07	0.31	0.31	0.01	0.31	0.21
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 41 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	822	1498	272	186	1087	207	234	956	689	202	1174	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	822	1498	272	186	1087	207	234	956	689	202	1174	140
Added Vol:	13	0	0	0	0	7	10	10	19	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	835	1498	272	186	1087	214	244	966	708	202	1181	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	835	1498	272	186	1087	214	244	966	0	202	1181	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	835	1498	272	186	1087	214	244	966	0	202	1181	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	835	1498	272	186	1087	214	244	966	0	202	1181	140

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.29	0.16	0.05	0.21	0.13	0.07	0.19	0.00	0.06	0.23	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.786

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	10	2027	63	253	1711	47	132	40	20	103	22	562
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	2027	63	253	1711	47	132	40	20	103	22	562
Added Vol:	0	13	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	2040	63	253	1730	47	132	40	20	103	22	562
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	2040	63	253	1730	47	132	40	20	103	22	562
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2040	63	253	1730	47	132	40	20	103	22	562
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2040	63	253	1730	47	132	40	20	103	22	562

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.91	0.09	2.00	3.00	1.00	1.00	1.33	0.67	1.00	0.08	1.92
Final Sat.:	1700	4947	153	3400	5100	1700	1700	2267	1133	1700	128	3272

## Capacity Analysis Module:

Vol/Sat:	0.01	0.41	0.41	0.07	0.34	0.03	0.08	0.02	0.02	0.06	0.17	0.17
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.615

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

## Volume Module:

Base Vol:	0	1712	166	122	1224	0	0	0	0	315	0	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1712	166	122	1224	0	0	0	0	315	0	106
Added Vol:	0	6	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1718	166	122	1233	0	0	0	0	315	0	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1718	166	122	1233	0	0	0	0	315	0	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1718	166	122	1233	0	0	0	0	315	0	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1718	166	122	1233	0	0	0	0	315	0	106

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.74	0.26	1.00	3.00	0.00	0.00	0.00	0.00	1.50	0.00	0.50
Final Sat.:	0	4651	449	1700	5100	0	0	0	0	2544	0	856

## Capacity Analysis Module:

Vol/Sat:	0.00	0.37	0.37	0.07	0.24	0.00	0.00	0.00	0.00	0.12	0.00	0.12
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Los Alamitos/Cerritos	C xxxxx 0.745	C xxxxx 0.747	+ 0.002 V/C
# 2 Bloomfield/Cerritos	C xxxxx 0.739	C xxxxx 0.741	+ 0.001 V/C
# 3 Denni/Cerritos	C xxxxx 0.751	C xxxxx 0.754	+ 0.002 V/C
# 4 Moody/Cerritos	C xxxxx 0.756	C xxxxx 0.757	+ 0.001 V/C
# 5 Walker/Cerritos	C xxxxx 0.730	C xxxxx 0.734	+ 0.004 V/C
# 6 Valleyview/Cerritos	D xxxxx 0.834	D xxxxx 0.840	+ 0.006 V/C
# 7 I-605 NB Ramps/Katella	A xxxxx 0.590	A xxxxx 0.599	+ 0.009 V/C
# 8 Walnut-Wallingsford/Katella	C xxxxx 0.711	C xxxxx 0.718	+ 0.007 V/C
# 9 Los Alamitos/Katella	C xxxxx 0.745	C xxxxx 0.756	+ 0.011 V/C
# 10 Bloomfield/Katella	C xxxxx 0.742	C xxxxx 0.755	+ 0.014 V/C
# 11 Lexington/Katella	A xxxxx 0.592	B xxxxx 0.608	+ 0.016 V/C
# 12 Cottonwood/Katella	A xxxxx 0.447	A xxxxx 0.460	+ 0.014 V/C
# 13 Siboney/Katella	A xxxxx 0.524	A xxxxx 0.551	+ 0.027 V/C
# 14 Winners/Katella	A xxxxx 0.521	A xxxxx 0.591	+ 0.070 V/C
# 15 Walker/Katella	B xxxxx 0.687	B xxxxx 0.691	+ 0.003 V/C
# 16 Valleyview/Katella	C xxxxx 0.749	C xxxxx 0.758	+ 0.008 V/C
# 17 Valleyview/Orangewood	D xxxxx 0.826	D xxxxx 0.832	+ 0.005 V/C
# 19 Los Alamitos/Fraquhar	B xxxxx 0.618	B xxxxx 0.621	+ 0.003 V/C

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.747

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 43 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	2	1	0	2	0	1	1

## Volume Module:

Base Vol:	261	803	409	84	542	66	129	801	165	296	798	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	261	803	409	84	542	66	129	801	165	296	798	115
Added Vol:	0	7	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	261	810	409	84	551	66	129	801	165	296	798	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	261	810	409	84	551	66	129	801	165	296	798	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	810	409	84	551	66	129	801	165	296	798	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	261	810	409	84	551	66	129	801	165	296	798	115

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.08	0.24	0.24	0.05	0.16	0.04	0.08	0.24	0.10	0.17	0.23	0.07
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.741

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 42 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

## Volume Module:

Base Vol:	108	514	158	61	285	99	159	1104	104	98	1055	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	514	158	61	285	99	159	1104	104	98	1055	177
Added Vol:	0	4	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	518	158	61	289	99	159	1104	104	98	1055	177
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	518	158	61	289	99	159	1104	104	98	1055	177
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	518	158	61	289	99	159	1104	104	98	1055	177
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	518	158	61	289	99	159	1104	104	98	1055	177

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.53	0.47	1.00	1.49	0.51	1.00	1.83	0.17	1.00	1.71	0.29
Final Sat.:	1700	2605	795	1700	2532	868	1700	3107	293	1700	2912	488

## Capacity Analysis Module:

Vol/Sat:	0.06	0.20	0.20	0.04	0.11	0.11	0.09	0.36	0.36	0.06	0.36	0.36
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.754

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	56	180	77	95	78	81	123	1192	33	49	1113	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	180	77	95	78	81	123	1192	33	49	1113	209
Added Vol:	0	4	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	184	77	95	82	81	123	1192	33	49	1113	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	184	77	95	82	81	123	1192	33	49	1113	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	184	77	95	82	81	123	1192	33	49	1113	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	184	77	95	82	81	123	1192	33	49	1113	209

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.18	0.58	0.24	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.68	0.32
Final Sat.:	300	987	413	1700	1700	1700	1700	3400	1700	1700	2862	538

## Capacity Analysis Module:

Vol/Sat:	0.19	0.19	0.19	0.06	0.05	0.05	0.07	0.35	0.02	0.03	0.39	0.39
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	0	1	1	0	1

## Volume Module:

Base Vol:	3	0	0	250	0	151	224	1131	1	0	1228	416
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	0	250	0	151	224	1131	1	0	1228	416
Added Vol:	0	0	0	4	0	0	0	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	254	0	151	224	1131	1	0	1228	420
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	254	0	151	224	1131	1	0	1228	420
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	254	0	151	224	1131	1	0	1228	420
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	254	0	151	224	1131	1	0	1228	420

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	2.00	0.00	1.00	1.00	1.99	0.01	1.00	1.49	0.51
Final Sat.:	1700	1700	0	3400	0	1700	1700	3397	3	1700	2533	867

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.07	0.00	0.09	0.13	0.33	0.33	0.00	0.48	0.48
Crit Moves:	****					****	****				****	

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.734

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 41 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	502	737	213	106	449	46	95	1068	237	93	1124	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	502	737	213	106	449	46	95	1068	237	93	1124	157
Added Vol:	4	7	7	0	9	0	0	0	4	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	506	744	220	106	458	46	95	1068	241	102	1124	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	506	744	220	106	458	46	95	1068	241	102	1124	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	506	744	220	106	458	46	95	1068	241	102	1124	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	506	744	220	106	458	46	95	1068	241	102	1124	157

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.82	0.18	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3090	310	1700	5100	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.15	0.22	0.13	0.06	0.15	0.15	0.06	0.21	0.14	0.06	0.33	0.09
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.840

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 62 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

## Volume Module:

Base Vol:	345	1893	224	146	1059	201	317	854	280	100	667	128
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	1893	224	146	1059	201	317	854	280	100	667	128
Added Vol:	0	15	0	0	18	0	0	7	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	345	1908	224	146	1077	201	317	861	280	100	676	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	345	1908	224	146	1077	201	317	861	280	100	676	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1908	224	146	1077	201	317	861	280	100	676	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	1908	224	146	1077	201	317	861	280	100	676	128

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.68	0.32
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2859	541

## Capacity Analysis Module:

Vol/Sat:	0.20	0.37	0.13	0.09	0.21	0.12	0.09	0.17	0.16	0.03	0.24	0.24
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

## Volume Module:

Base Vol:	0	0	742	0	0	159	184	1835	0	0	1675	846
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	742	0	0	159	184	1835	0	0	1675	846
Added Vol:	0	0	13	0	0	0	0	31	0	0	21	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	755	0	0	159	184	1866	0	0	1696	860
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	184	1866	0	0	1696	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	184	1866	0	0	1696	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	184	1866	0	0	1696	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.55	0.00	0.00	0.33	0.00
----------	------	------	------	------	------	------	------	------	------	------	------	------

Crit Moves: \*\*\*\*\*

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.718

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 39 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	1	0	1	0

## Volume Module:

Base Vol:	307	74	160	19	66	60	25	2057	365	182	2079	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	307	74	160	19	66	60	25	2057	365	182	2079	11
Added Vol:	0	0	0	0	0	0	0	45	0	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	307	74	160	19	66	60	25	2102	365	182	2114	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	307	74	160	19	66	60	25	2102	365	182	2114	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	307	74	160	19	66	60	25	2102	365	182	2114	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	307	74	160	19	66	60	25	2102	365	182	2114	11

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.14	0.27	0.59	1.00	1.00	1.00	1.00	3.41	0.59	1.00	3.00	1.00
Final Sat.:	1929	465	1006	1700	1700	1700	1700	5794	1006	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.01	0.04	0.04	0.01	0.36	0.36	0.11	0.41	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.756

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	456	878	366	137	965	219	255	1438	493	302	1514	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	456	878	366	137	965	219	255	1438	493	302	1514	95
Added Vol:	0	0	13	9	0	0	0	45	0	11	35	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	456	878	379	146	965	219	255	1483	493	313	1549	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	456	878	379	146	965	219	255	1483	493	313	1549	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	878	379	146	965	219	255	1483	493	313	1549	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	878	379	146	965	219	255	1483	493	313	1549	102
OvlAdjVol:	222			91			265			29		

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.13	0.17	0.22	0.04	0.19	0.13	0.08	0.29	0.29	0.09	0.30	0.06
OvlAdjV/S:	0.13			0.05			0.16			0.02		
Crit Moves:	****	****					****	****				

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.755

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	2	1	0	1

## Volume Module:

Base Vol:	46	105	25	171	160	181	279	1614	77	59	1747	235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	105	25	171	160	181	279	1614	77	59	1747	235
Added Vol:	0	0	0	4	0	0	0	67	0	0	54	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	105	25	175	160	181	279	1681	77	59	1801	239
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	105	25	175	160	181	279	1681	77	59	1801	239
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	105	25	175	160	181	279	1681	77	59	1801	239
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	105	25	175	160	181	279	1681	77	59	1801	239

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.62	0.38	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.65	0.35
Final Sat.:	1700	2746	654	1700	1700	1700	1700	4877	223	1700	4503	598

## Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.04	0.10	0.09	0.11	0.16	0.34	0.34	0.03	0.40	0.40
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	94	55	161	126	0	107	105	1524	72	124	1674	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	55	161	126	0	107	105	1524	72	124	1674	99
Added Vol:	0	0	0	9	0	0	0	75	0	0	62	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	55	161	135	0	107	105	1599	72	124	1736	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	55	161	135	0	107	105	1599	72	124	1736	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	55	161	135	0	107	105	1599	72	124	1736	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	55	161	135	0	107	105	1599	72	124	1736	107

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.12	0.00	0.88	2.00	3.00	1.00	1.00	2.83	0.17
Final Sat.:	1700	1700	1700	1897	0	1503	3400	5100	1700	1700	4804	296

## Capacity Analysis Module:

Vol/Sat:	0.06	0.03	0.09	0.07	0.00	0.07	0.03	0.31	0.04	0.07	0.36	0.36
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.460

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

## Volume Module:

Base Vol:	0	0	0	14	0	9	28	1836	0	0	1897	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	14	0	9	28	1836	0	0	1897	8
Added Vol:	0	0	0	0	0	0	0	84	0	0	70	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	9	28	1920	0	0	1967	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	9	28	1920	0	0	1967	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	0	9	28	1920	0	0	1967	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	0	9	28	1920	0	0	1967	8

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.22	0.00	0.78	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2070	0	1330	1700	5100	0	0	5079	21

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.38	0.00	0.00	0.39	0.39
Crit Moves:				****				****				****

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	0	1

## Volume Module:

Base Vol:	82	4	58	75	3	64	129	1701	32	68	1825	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	4	58	75	3	64	129	1701	32	68	1825	38
Added Vol:	0	0	0	19	0	19	30	59	0	15	55	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	4	58	94	3	83	159	1760	32	83	1880	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	4	58	94	3	83	159	1760	32	83	1880	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	4	58	94	3	83	159	1760	32	83	1880	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	4	58	94	3	83	159	1760	32	83	1880	38

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.57	0.05	1.38	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1621	79	1700	2663	85	2352	3400	5009	91	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.05	0.05	0.03	0.04	0.04	0.04	0.05	0.35	0.35	0.05	0.37	0.02
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.591

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted				Permitted				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	48	2	50	32	0	46	110	1728	10	38	1785	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	2	50	32	0	46	110	1728	10	38	1785	6
Added Vol:	0	0	0	40	0	0	59	34	0	0	88	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	2	50	72	0	46	169	1762	10	38	1873	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	2	50	72	0	46	169	1762	10	38	1873	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	2	50	72	0	46	169	1762	10	38	1873	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	2	50	72	0	46	169	1762	10	38	1873	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.04	0.96	1.00	0.00	1.00	1.00	2.98	0.02	1.00	2.99	0.01
Final Sat.:	1700	65	1635	1700	0	1700	1700	5071	29	1700	5084	16

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.03	0.04	0.00	0.03	0.10	0.35	0.35	0.02	0.37	0.37
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	27	15	4	596	1	213	312	1600	5	0	1726	602
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	15	4	596	1	213	312	1600	5	0	1726	602
Added Vol:	0	0	0	0	0	26	23	51	0	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	15	4	596	1	239	335	1651	5	0	1788	602
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	15	4	596	1	239	335	1651	5	0	1788	602
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	15	4	596	1	239	335	1651	5	0	1788	602
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	15	4	596	1	239	335	1651	5	0	1788	602

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.99	0.01	2.00	2.00	2.99	0.01	1.00	3.00	1.00
Final Sat.:	1700	1404	296	3394	6	3400	3400	5085	15	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.02	0.01	0.01	0.18	0.18	0.07	0.10	0.32	0.32	0.00	0.35	0.35
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.758

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
Added Vol:	27	0	0	0	0	18	15	15	21	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	692	1474	176	228	1351	248	261	1078	1026	325	1016	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	692	1474	176	228	1351	248	261	1078	0	325	1016	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	692	1474	176	228	1351	248	261	1078	0	325	1016	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	692	1474	176	228	1351	248	261	1078	0	325	1016	217

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.14	0.29	0.10	0.07	0.26	0.15	0.08	0.21	0.00	0.10	0.20	0.13
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.832

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 60 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	19	1925	100	579	2104	136	112	37	22	87	42	445
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	1925	100	579	2104	136	112	37	22	87	42	445
Added Vol:	0	27	0	0	21	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	1952	100	579	2125	136	112	37	22	87	42	445
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	1952	100	579	2125	136	112	37	22	87	42	445
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	1952	100	579	2125	136	112	37	22	87	42	445
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	1952	100	579	2125	136	112	37	22	87	42	445

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.85	0.15	2.00	3.00	1.00	1.00	1.25	0.75	1.00	0.17	1.83
Final Sat.:	1700	4851	249	3400	5100	1700	1700	2132	1268	1700	293	3107

## Capacity Analysis Module:

Vol/Sat:	0.01	0.40	0.40	0.17	0.42	0.08	0.07	0.02	0.02	0.05	0.14	0.14
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

## Volume Module:

Base Vol:	0	1554	165	129	1487	0	0	0	0	392	0	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1554	165	129	1487	0	0	0	0	392	0	136
Added Vol:	0	13	0	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1567	165	129	1498	0	0	0	0	392	0	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1567	165	129	1498	0	0	0	0	392	0	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1567	165	129	1498	0	0	0	0	392	0	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1567	165	129	1498	0	0	0	0	392	0	136

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.71	0.29	1.00	3.00	0.00	0.00	0.00	0.00	1.48	0.00	0.52
Final Sat.:	0	4614	486	1700	5100	0	0	0	0	2524	0	876

## Capacity Analysis Module:

Vol/Sat:	0.00	0.34	0.34	0.08	0.29	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Los Alamitos/Cerritos	C	xxxxxx 0.714	C	xxxxxx 0.725	+ 0.011 V/C
# 2 Bloomfield/Cerritos	C	xxxxxx 0.703	C	xxxxxx 0.707	+ 0.004 V/C
# 3 Denni/Cerritos	B	xxxxxx 0.602	B	xxxxxx 0.626	+ 0.024 V/C
# 4 Moody/Cerritos	A	xxxxxx 0.580	A	xxxxxx 0.594	+ 0.014 V/C
# 5 Walker/Cerritos	B	xxxxxx 0.690	C	xxxxxx 0.711	+ 0.021 V/C
# 6 Valleyview/Cerritos	C	xxxxxx 0.742	C	xxxxxx 0.755	+ 0.013 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxxx 0.500	A	xxxxxx 0.503	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	D	xxxxxx 0.823	D	xxxxxx 0.828	+ 0.005 V/C
# 9 Los Alamitos/Katella	C	xxxxxx 0.755	C	xxxxxx 0.764	+ 0.008 V/C
# 10 Bloomfield/Katella	D	xxxxxx 0.830	D	xxxxxx 0.838	+ 0.008 V/C
# 11 Lexington/Katella	A	xxxxxx 0.587	B	xxxxxx 0.613	+ 0.026 V/C
# 12 Cottonwood/Katella	A	xxxxxx 0.375	A	xxxxxx 0.392	+ 0.016 V/C
# 13 Siboney/Katella	A	xxxxxx 0.468	A	xxxxxx 0.520	+ 0.053 V/C
# 14 Winners/Katella	A	xxxxxx 0.401	A	xxxxxx 0.424	+ 0.023 V/C
# 15 Walker/Katella	B	xxxxxx 0.667	B	xxxxxx 0.695	+ 0.028 V/C
# 16 Valleyview/Katella	C	xxxxxx 0.733	C	xxxxxx 0.756	+ 0.022 V/C
# 17 Valleyview/Orangewood	C	xxxxxx 0.795	D	xxxxxx 0.805	+ 0.011 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxxx 0.622	B	xxxxxx 0.624	+ 0.002 V/C

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.725

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	178	621	335	94	753	90	130	800	129	247	706	138
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	181	630	340	95	764	91	132	812	131	251	717	140
Added Vol:	10	13	2	0	11	1	4	9	22	3	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	643	342	95	775	92	136	821	153	254	720	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	643	342	95	775	92	136	821	153	254	720	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	643	342	95	775	92	136	821	153	254	720	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	643	342	95	775	92	136	821	153	254	720	140

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.06	0.19	0.20	0.06	0.23	0.05	0.08	0.24	0.09	0.15	0.21	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.707

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 38 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	121	312	192	168	569	90	31	826	115	172	724	100
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	123	317	195	171	578	91	31	838	117	175	735	101
Added Vol:	0	5	0	0	5	0	0	10	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	322	195	171	583	91	31	848	117	175	741	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	322	195	171	583	91	31	848	117	175	741	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	322	195	171	583	91	31	848	117	175	741	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	322	195	171	583	91	31	848	117	175	741	102

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.25	0.75	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.76	0.24
Final Sat.:	1700	2117	1283	1700	2939	461	1700	2989	411	1700	2990	410

Capacity Analysis Module:

Vol/Sat:	0.07	0.15	0.15	0.10	0.20	0.20	0.02	0.28	0.28	0.10	0.25	0.25
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.626

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	23	79	49	239	153	128	63	845	86	112	793	137
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	23	80	50	243	155	130	64	858	87	114	805	139
Added Vol:	1	18	15	0	21	0	0	9	1	3	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	98	65	243	176	130	64	867	88	117	811	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	98	65	243	176	130	64	867	88	117	811	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	98	65	243	176	130	64	867	88	117	811	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	98	65	243	176	130	64	867	88	117	811	139

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	0.52	0.35	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	221	891	588	1700	1700	1700	1700	3400	1700	1700	2902	498

## Capacity Analysis Module:

Vol/Sat:	0.11	0.11	0.11	0.14	0.10	0.08	0.04	0.25	0.05	0.07	0.28	0.28
Crit Moves:	****			****				****			****	

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	1	0	1	1	0

## Volume Module:

Base Vol:	1	2	1	583	3	206	71	1065	2	0	869	174
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	1	2	1	592	3	209	72	1081	2	0	882	177
Added Vol:	0	0	0	19	0	1	6	19	0	0	5	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	1	611	3	210	78	1100	2	0	887	189
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	2	1	611	3	210	78	1100	2	0	887	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	1	611	3	210	78	1100	2	0	887	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	1	611	3	210	78	1100	2	0	887	189

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.50	1.00	0.50	1.99	0.01	1.00	1.00	1.99	0.01	1.00	1.65	0.35
Final Sat.:	850	1700	850	3383	17	1700	1700	3394	6	1700	2804	596

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.18	0.18	0.12	0.05	0.32	0.32	0.00	0.32	0.32
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.711

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 38 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

Volume Module:

Base Vol:	104	241	53	166	750	70	20	1139	490	120	841	106
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	106	245	54	168	761	71	20	1156	497	122	854	108
Added Vol:	12	16	0	0	20	0	1	18	19	1	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	261	54	168	781	71	21	1174	516	123	859	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	261	54	168	781	71	21	1174	516	123	859	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	261	54	168	781	71	21	1174	516	123	859	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	261	54	168	781	71	21	1174	516	123	859	108

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.83	0.17	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3117	283	1700	5100	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.08	0.03	0.10	0.25	0.25	0.01	0.23	0.30	0.07	0.25	0.06
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.755

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

Volume Module:

Base Vol:	157	1223	44	111	1342	270	97	639	469	170	732	147
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	159	1241	45	113	1362	274	98	649	476	173	743	149
Added Vol:	1	35	8	0	45	1	7	9	2	9	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	1276	53	113	1407	275	105	658	478	182	749	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	1276	53	113	1407	275	105	658	478	182	749	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	1276	53	113	1407	275	105	658	478	182	749	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	1276	53	113	1407	275	105	658	478	182	749	149

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.67	0.33
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2835	565

Capacity Analysis Module:

Vol/Sat:	0.09	0.25	0.03	0.07	0.28	0.16	0.03	0.13	0.28	0.05	0.26	0.26
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.503

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

Volume Module:

Base Vol:	0	0	1067	0	0	398	118	1507	0	0	1454	833
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	1083	0	0	404	120	1530	0	0	1476	845
Added Vol:	0	0	23	0	0	0	0	12	0	0	28	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1106	0	0	404	120	1542	0	0	1504	855
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	120	1542	0	0	1504	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	120	1542	0	0	1504	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	120	1542	0	0	1504	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.45	0.00	0.00	0.29	0.00
Crit Moves:					****				****			

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.828

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 58 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	0	1	0	1	0	1	1	0	3	1	0	

## Volume Module:

Base Vol:	548	159	118	18	140	30	17	1901	338	182	1671	15
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	556	161	120	18	142	30	17	1930	343	185	1696	15
Added Vol:	0	0	0	2	0	0	0	34	0	0	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	556	161	120	20	142	30	17	1964	343	185	1730	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	556	161	120	20	142	30	17	1964	343	185	1730	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	556	161	120	20	142	30	17	1964	343	185	1730	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	556	161	120	20	142	30	17	1964	343	185	1730	15

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.33	0.38	0.29	1.00	1.00	1.00	1.00	3.41	0.59	1.00	3.00	1.00
Final Sat.:	2258	655	486	1700	1700	1700	1700	5789	1011	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.25	0.25	0.25	0.01	0.08	0.02	0.01	0.34	0.34	0.11	0.34	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.764

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 45 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	388	939	433	155	937	185	169	1538	255	325	1229	84
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	394	953	439	157	951	188	172	1561	259	330	1247	85
Added Vol:	0	6	3	12	12	12	11	25	0	3	22	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	394	959	442	169	963	200	183	1586	259	333	1269	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	394	959	442	169	963	200	183	1586	259	333	1269	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	394	959	442	169	963	200	183	1586	259	333	1269	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	394	959	442	169	963	200	183	1586	259	333	1269	95
OvlAdjVol:			276			109			62			11

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.12	0.19	0.26	0.05	0.19	0.12	0.05	0.31	0.15	0.10	0.25	0.06
OvlAdjV/S:			0.16			0.06			0.04			0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.838

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 61 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit					Prot+Permit					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	1	1	0	1	0	1	0	1	1	0	2	1	0	1	0	2	1	0

Volume Module:

Base Vol:	88	357	12	179	190	401	323	1591	41	30	1239	245
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	89	362	12	182	193	407	328	1615	42	30	1258	249
Added Vol:	1	1	1	4	1	0	0	40	1	1	35	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	363	13	186	194	407	328	1655	43	31	1293	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	363	13	186	194	407	328	1655	43	31	1293	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	363	13	186	194	407	328	1655	43	31	1293	253
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	363	13	186	194	407	328	1655	43	31	1293	253

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.51	0.49
Final Sat.:	1700	3281	119	1700	1700	1700	1700	4972	128	1700	4266	834

Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.11	0.11	0.11	0.24	0.19	0.33	0.33	0.02	0.30	0.30
Crit Moves:	****					****	****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 30 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	82	39	132	114	0	140	109	1604	106	118	1453	95
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	83	40	134	116	0	142	111	1628	108	120	1475	96
Added Vol:	0	1	0	20	0	1	0	59	0	5	52	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	41	134	136	0	143	111	1687	108	125	1527	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	41	134	136	0	143	111	1687	108	125	1527	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	41	134	136	0	143	111	1687	108	125	1527	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	41	134	136	0	143	111	1687	108	125	1527	127

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	2.00	3.00	1.00	1.00	2.77	0.23
Final Sat.:	1700	1700	1700	1700	0	1700	3400	5100	1700	1700	4707	393

## Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.08	0.08	0.00	0.08	0.03	0.33	0.06	0.07	0.32	0.32
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.392

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

## Volume Module:

Base Vol:	0	0	0	7	0	3	6	1635	0	0	1539	7
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	0	7	0	3	6	1660	0	0	1562	7
Added Vol:	0	0	0	0	0	0	0	84	0	0	88	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	7	0	3	6	1744	0	0	1650	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	7	0	3	6	1744	0	0	1650	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	7	0	3	6	1744	0	0	1650	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	7	0	3	6	1744	0	0	1650	7

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.40	0.00	0.60	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2380	0	1020	1700	5100	0	0	5078	22

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.32	0.32
Crit Moves:				****				****				****

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.520

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 25 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	2	0	2	1	0	1	0	3	0	1

Volume Module:

Base Vol:	42	2	61	36	0	12	124	1697	31	27	1675	16
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	43	2	62	37	0	12	126	1722	31	27	1700	16
Added Vol:	0	0	0	0	0	0	31	78	0	81	95	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	2	62	37	0	12	157	1800	31	108	1795	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	2	62	37	0	12	157	1800	31	108	1795	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	2	62	37	0	12	157	1800	31	108	1795	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	2	62	37	0	12	157	1800	31	108	1795	16

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	2.00	0.00	1.00	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1623	77	1700	3400	0	1700	3400	5012	88	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.04	0.01	0.00	0.01	0.05	0.36	0.36	0.06	0.35	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.424

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 21 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	9	1	6	4	2	2	21	1478	57	63	1577	6
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	9	1	6	4	2	2	21	1500	58	64	1601	6
Added Vol:	0	0	0	0	0	0	30	117	0	0	140	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1	6	4	2	2	51	1617	58	64	1741	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	1	6	4	2	2	51	1617	58	64	1741	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	6	4	2	2	51	1617	58	64	1741	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1	6	4	2	2	51	1617	58	64	1741	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.14	0.86	1.00	0.50	0.50	1.00	2.90	0.10	1.00	2.99	0.01
Final Sat.:	1700	243	1457	1700	850	850	1700	4924	176	1700	5082	18

## Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.33	0.33	0.04	0.34	0.34
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 37 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	3	0	0	790	11	172	215	1526	14	13	1568	365
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	3	0	0	802	11	175	218	1549	14	13	1592	370
Added Vol:	0	0	0	0	0	40	28	89	0	0	100	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	802	11	215	246	1638	14	13	1692	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	802	11	215	246	1638	14	13	1692	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	802	11	215	246	1638	14	13	1692	370
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	802	11	215	246	1638	14	13	1692	370

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.97	0.03	2.00	2.00	2.97	0.03	1.00	3.00	1.00
Final Sat.:	1700	1700	0	3353	47	3400	3400	5056	44	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.24	0.24	0.06	0.07	0.32	0.32	0.01	0.33	0.22
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.756

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

Volume Module:

Base Vol:	822	1498	272	186	1087	207	234	956	689	202	1174	140
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	834	1520	276	189	1103	210	238	970	699	205	1192	142
Added Vol:	33	3	2	0	4	51	41	18	30	3	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	867	1523	278	189	1107	261	279	988	729	208	1208	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	867	1523	278	189	1107	261	279	988	0	208	1208	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	867	1523	278	189	1107	261	279	988	0	208	1208	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	867	1523	278	189	1107	261	279	988	0	208	1208	142

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.17	0.30	0.16	0.06	0.22	0.15	0.08	0.19	0.00	0.06	0.24	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.805

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 53 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	10	2027	63	253	1711	47	132	40	20	103	22	562
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	10	2057	64	257	1737	48	134	41	20	105	22	570
Added Vol:	0	29	0	8	29	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	2086	64	265	1766	48	134	41	20	105	22	579
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	2086	64	265	1766	48	134	41	20	105	22	579
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2086	64	265	1766	48	134	41	20	105	22	579
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2086	64	265	1766	48	134	41	20	105	22	579

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.91	0.09	2.00	3.00	1.00	1.00	1.33	0.67	1.00	0.07	1.93
Final Sat.:	1700	4948	152	3400	5100	1700	1700	2267	1133	1700	126	3274

## Capacity Analysis Module:

Vol/Sat:	0.01	0.42	0.42	0.08	0.35	0.03	0.08	0.02	0.02	0.06	0.18	0.18
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.624

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

Volume Module:

Base Vol:	0	1712	166	122	1224	0	0	0	0	315	0	106
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	1738	168	124	1242	0	0	0	0	320	0	108
Added Vol:	0	8	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1746	168	124	1257	0	0	0	0	320	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1746	168	124	1257	0	0	0	0	320	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1746	168	124	1257	0	0	0	0	320	0	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1746	168	124	1257	0	0	0	0	320	0	108

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.74	0.26	1.00	3.00	0.00	0.00	0.00	0.00	1.49	0.01	0.50
Final Sat.:	0	4651	449	1700	5100	0	0	0	0	2544	0	856

Capacity Analysis Module:

Vol/Sat:	0.00	0.38	0.38	0.07	0.25	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:	****			****						****		

\*\*\*\*\*



Impact Analysis Report  
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Los Alamitos/Cerritos	C	xxxxxx 0.756	C	xxxxxx 0.770	+ 0.014 V/C
# 2 Bloomfield/Cerritos	C	xxxxxx 0.750	C	xxxxxx 0.757	+ 0.007 V/C
# 3 Denni/Cerritos	C	xxxxxx 0.762	D	xxxxxx 0.812	+ 0.051 V/C
# 4 Moody/Cerritos	C	xxxxxx 0.766	C	xxxxxx 0.782	+ 0.016 V/C
# 5 Walker/Cerritos	C	xxxxxx 0.740	C	xxxxxx 0.755	+ 0.016 V/C
# 6 Valleyview/Cerritos	D	xxxxxx 0.846	D	xxxxxx 0.861	+ 0.015 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxxx 0.598	B	xxxxxx 0.602	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	C	xxxxxx 0.721	C	xxxxxx 0.726	+ 0.005 V/C
# 9 Los Alamitos/Katella	C	xxxxxx 0.755	C	xxxxxx 0.766	+ 0.011 V/C
# 10 Bloomfield/Katella	C	xxxxxx 0.752	C	xxxxxx 0.762	+ 0.010 V/C
# 11 Lexington/Katella	A	xxxxxx 0.600	B	xxxxxx 0.623	+ 0.023 V/C
# 12 Cottonwood/Katella	A	xxxxxx 0.453	A	xxxxxx 0.470	+ 0.017 V/C
# 13 Siboney/Katella	A	xxxxxx 0.531	A	xxxxxx 0.556	+ 0.024 V/C
# 14 Winners/Katella	A	xxxxxx 0.528	A	xxxxxx 0.560	+ 0.032 V/C
# 15 Walker/Katella	B	xxxxxx 0.697	C	xxxxxx 0.703	+ 0.006 V/C
# 16 Valleyview/Katella	C	xxxxxx 0.760	C	xxxxxx 0.771	+ 0.011 V/C
# 17 Valleyview/Orangewood	D	xxxxxx 0.838	D	xxxxxx 0.848	+ 0.010 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxxx 0.627	B	xxxxxx 0.630	+ 0.003 V/C

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.770

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 46 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	2	1	0	2	0	1	1

Volume Module:

Base Vol:	261	803	409	84	542	66	129	801	165	296	798	115
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	265	815	415	85	550	67	131	813	167	300	810	117
Added Vol:	22	10	3	0	13	4	2	21	18	3	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	825	418	85	563	71	133	834	185	303	827	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	825	418	85	563	71	133	834	185	303	827	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	825	418	85	563	71	133	834	185	303	827	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	825	418	85	563	71	133	834	185	303	827	117

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.08	0.24	0.25	0.05	0.17	0.04	0.08	0.25	0.11	0.18	0.24	0.07
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	108	514	158	61	285	99	159	1104	104	98	1055	177
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	110	522	160	62	289	100	161	1121	106	99	1071	180
Added Vol:	0	4	0	0	5	0	0	24	0	0	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	526	160	62	294	100	161	1145	106	99	1090	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	526	160	62	294	100	161	1145	106	99	1090	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	526	160	62	294	100	161	1145	106	99	1090	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	526	160	62	294	100	161	1145	106	99	1090	180

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.53	0.47	1.00	1.49	0.51	1.00	1.83	0.17	1.00	1.72	0.28
Final Sat.:	1700	2605	795	1700	2535	865	1700	3113	287	1700	2919	481

Capacity Analysis Module:

Vol/Sat:	0.06	0.20	0.20	0.04	0.12	0.12	0.09	0.37	0.37	0.06	0.37	0.37
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.812

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 55 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	56	180	77	95	78	81	123	1192	33	49	1113	209
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	57	183	78	96	79	82	125	1210	33	50	1130	212
Added Vol:	9	25	27	0	37	0	0	8	16	18	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	208	105	96	116	82	125	1218	49	68	1141	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	208	105	96	116	82	125	1218	49	68	1141	212
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	208	105	96	116	82	125	1218	49	68	1141	212
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	208	105	96	116	82	125	1218	49	68	1141	212

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.17	0.55	0.28	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.69	0.31
Final Sat.:	296	932	472	1700	1700	1700	1700	3400	1700	1700	2867	533

## Capacity Analysis Module:

Vol/Sat:	0.22	0.22	0.22	0.06	0.07	0.05	0.07	0.36	0.03	0.04	0.40	0.40
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.782

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	3	0	0	250	0	151	224	1131	1	0	1228	416
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	3	0	0	254	0	153	227	1148	1	0	1246	422
Added Vol:	0	0	0	14	0	2	8	25	0	0	28	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	268	0	155	235	1173	1	0	1274	428
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	268	0	155	235	1173	1	0	1274	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	268	0	155	235	1173	1	0	1274	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	268	0	155	235	1173	1	0	1274	428

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	2.00	0.00	1.00	1.00	1.99	0.01	1.00	1.50	0.50
Final Sat.:	1700	1700	0	3400	0	1700	1700	3397	3	1700	2545	855

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.09	0.14	0.35	0.35	0.00	0.50	0.50
Crit Moves:	****					****	****				****	

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.755

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

Volume Module:

Base Vol:	502	737	213	106	449	46	95	1068	237	93	1124	157
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	510	748	216	108	456	47	96	1084	241	94	1141	159
Added Vol:	6	13	0	0	15	0	2	24	14	2	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	516	761	216	108	471	47	98	1108	255	96	1169	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	516	761	216	108	471	47	98	1108	255	96	1169	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	516	761	216	108	471	47	98	1108	255	96	1169	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	516	761	216	108	471	47	98	1108	255	96	1169	159

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.82	0.18	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3093	307	1700	5100	1700	1700	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.15	0.22	0.13	0.06	0.15	0.15	0.06	0.22	0.15	0.06	0.34	0.09
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.861

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 69 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		3	0		1			1		0		3	0		1		

Volume Module:

Base Vol:	345	1893	224	146	1059	201	317	854	280	100	667	128
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	350	1921	227	148	1075	204	322	867	284	101	677	130
Added Vol:	2	29	6	0	38	2	7	15	1	7	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	352	1950	233	148	1113	206	329	882	285	108	703	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	352	1950	233	148	1113	206	329	882	285	108	703	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	352	1950	233	148	1113	206	329	882	285	108	703	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	352	1950	233	148	1113	206	329	882	285	109	703	130

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.69	0.31
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2870	530

Capacity Analysis Module:

Vol/Sat:	0.21	0.38	0.14	0.09	0.22	0.12	0.10	0.17	0.17	0.03	0.24	0.24
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.602  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 29 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Include					Ignore				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	0	0	2	1	1

## Volume Module:

Base Vol:	0	0	742	0	0	159	184	1835	0	0	1675	846
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	753	0	0	161	187	1863	0	0	1700	859
Added Vol:	0	0	26	0	0	0	0	14	0	0	25	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	779	0	0	161	187	1877	0	0	1725	867
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	187	1877	0	0	1725	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	187	1877	0	0	1725	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	187	1877	0	0	1725	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.55	0.00	0.00	0.34	0.00	
Crit Moves:							****	****					

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	3	1	0	1

## Volume Module:

Base Vol:	307	74	160	19	66	60	25	2057	365	182	2079	11
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	312	75	162	19	67	61	25	2088	370	185	2110	11
Added Vol:	0	0	0	1	0	0	1	36	0	0	31	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	75	162	20	67	61	26	2124	370	185	2141	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	312	75	162	20	67	61	26	2124	370	185	2141	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	75	162	20	67	61	26	2124	370	185	2141	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	75	162	20	67	61	26	2124	370	185	2141	13

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.14	0.27	0.59	1.00	1.00	1.00	1.00	3.41	0.59	1.00	3.00	1.00
Final Sat.:	1929	465	1006	1700	1700	1700	1700	5790	1010	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.01	0.04	0.04	0.02	0.37	0.37	0.11	0.42	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.766

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 46 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	456	878	366	137	965	219	255	1438	493	302	1514	95
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	463	891	371	139	979	222	259	1460	500	307	1537	96
Added Vol:	0	13	3	10	8	13	16	21	0	3	20	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	463	904	374	149	987	235	275	1481	500	310	1557	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	463	904	374	149	987	235	275	1481	500	310	1557	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	463	904	374	149	987	235	275	1481	500	310	1557	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	463	904	374	149	987	235	275	1481	500	310	1557	107
OvlAdjVol:			220			98			269			33

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.14	0.18	0.22	0.04	0.19	0.14	0.08	0.29	0.29	0.09	0.31	0.06
OvlAdjV/S:			0.13			0.06			0.16			0.02
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.762

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 45 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit					Prot+Permit					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1		0		1	1		0		1	1		0		2	1		0		2

Volume Module:

Base Vol:	46	105	25	171	160	181	279	1614	77	59	1747	235
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	47	107	25	174	162	184	283	1638	78	60	1773	239
Added Vol:	1	1	1	3	1	0	0	34	1	1	35	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	108	26	177	163	184	283	1672	79	61	1808	242
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	108	26	177	163	184	283	1672	79	61	1808	242
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	108	26	177	163	184	283	1672	79	61	1808	242
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	108	26	177	163	184	283	1672	79	61	1808	242

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.61	0.39	1.00	1.00	1.00	1.00	2.86	0.14	1.00	2.65	0.35
Final Sat.:	1700	2731	669	1700	1700	1700	1700	4869	231	1700	4499	601

Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.04	0.10	0.10	0.11	0.17	0.34	0.34	0.04	0.40	0.40
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.623  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 30 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

Volume Module:

Base Vol:	94	55	161	126	0	107	105	1524	72	124	1674	99
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	95	56	163	128	0	109	107	1547	73	126	1699	100
Added Vol:	0	10	0	16	5	1	1	52	0	6	52	30
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	66	163	144	5	110	108	1599	73	132	1751	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	66	163	144	5	110	108	1599	73	132	1751	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	66	163	144	5	110	108	1599	73	132	1751	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	66	163	144	5	110	108	1599	73	132	1751	130

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.11	0.04	0.85	2.00	3.00	1.00	1.00	2.79	0.21
Final Sat.:	1700	1700	1700	1893	66	1442	3400	5100	1700	1700	4746	354

Capacity Analysis Module:

Vol/Sat:	0.06	0.04	0.10	0.08	0.08	0.08	0.03	0.31	0.04	0.08	0.37	0.37
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	0	14	0	9	28	1836	0	0	1897	8
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	0	14	0	9	28	1864	0	0	1925	8
Added Vol:	0	0	0	0	0	0	0	74	0	0	88	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	9	28	1938	0	0	2013	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	9	28	1938	0	0	2013	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	0	9	28	1938	0	0	2013	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	0	9	28	1938	0	0	2013	8

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.22	xxxx	0.78	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2070	0	1330	1700	5100	0	0	5080	20

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.38	0.00	0.00	0.40	0.40
Crit Moves:				****				****				****

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.556

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	0	1	1	0	1	0	1	2	0	2	1	0	1	0	3	0	1

Volume Module:

Base Vol:	82	4	58	75	3	64	129	1701	32	68	1825	38
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	83	4	59	76	3	65	131	1727	32	69	1852	39
Added Vol:	0	0	0	0	0	0	36	72	0	45	90	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	4	59	76	3	65	167	1799	32	114	1942	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	4	59	76	3	65	167	1799	32	114	1942	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	4	59	76	3	65	167	1799	32	114	1942	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	4	59	76	3	65	167	1799	32	114	1942	39

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.59	0.06	1.35	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1621	79	1700	2694	108	2299	3400	5010	90	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.05	0.05	0.03	0.03	0.03	0.03	0.05	0.36	0.36	0.07	0.38	0.02
Crit Moves:	****			****			****			****		

\*\*\*\*\*

-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

Volume Module:

Base Vol:	48	2	50	32	0	46	110	1728	10	38	1785	6
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	49	2	51	32	0	47	112	1754	10	39	1812	6
Added Vol:	0	0	0	0	0	0	16	92	0	0	116	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	2	51	32	0	47	128	1846	10	39	1928	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	2	51	32	0	47	128	1846	10	39	1928	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	2	51	32	0	47	128	1846	10	39	1928	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	2	51	32	0	47	128	1846	10	39	1928	6

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.04	0.96	1.00	0.00	1.00	1.00	2.98	0.02	1.00	2.99	0.01
Final Sat.:	1700	65	1635	1700	0	1700	1700	5072	28	1700	5084	16

Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.03	0.02	0.00	0.03	0.08	0.36	0.36	0.02	0.38	0.38
Crit Moves:	****					****	****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100

Critical Vol./Cap.(X): 0.703

Loss Time (sec): 5

Average Delay (sec/veh): xxxxxx

Optimal Cycle: 37

Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	27	15	4	596	1	213	312	1600	5	0	1726	602
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	27	15	4	605	1	216	317	1624	5	0	1752	611
Added Vol:	0	0	0	0	0	30	19	73	0	0	85	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	15	4	605	1	246	336	1697	5	0	1837	611
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	15	4	605	1	246	336	1697	5	0	1837	611
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	15	4	605	1	246	336	1697	5	0	1837	611
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	15	4	605	1	246	336	1697	5	0	1837	611

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.99	0.01	2.00	2.00	2.99	0.01	1.00	3.00	1.00
Final Sat.:	1700	1404	296	3394	6	3400	3400	5085	15	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.02	0.01	0.01	0.18	0.18	0.07	0.10	0.33	0.33	0.00	0.36	0.36
Crit Moves:	****			****			****			****		

\*\*\*\*\*



-----

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.771

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 47 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

Volume Module:

Base Vol:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	675	1496	179	231	1371	233	250	1079	1020	330	1013	220
Added Vol:	27	5	4	0	6	40	31	15	27	5	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	702	1501	183	231	1377	273	281	1094	1047	335	1032	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	702	1501	183	231	1377	273	281	1094	0	335	1032	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	702	1501	183	231	1377	273	281	1094	0	335	1032	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	702	1501	183	231	1377	273	281	1094	0	335	1032	220

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.14	0.29	0.11	0.07	0.27	0.16	0.08	0.21	0.00	0.10	0.20	0.13
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.848

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 64 Level Of Service: D

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 1 0 2 0 3 0 1 1 0 1 1 1

-----|-----|-----|-----|

## Volume Module:

Base Vol: 19 1925 100 579 2104 136 112 37 22 87 42 445

Growth Adj: 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01

Initial Bse: 19 1954 101 588 2136 138 114 38 22 88 43 452

Added Vol: 0 29 0 6 31 0 0 0 0 0 0 7

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 19 1983 101 594 2167 138 114 38 22 88 43 459

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 19 1983 101 594 2167 138 114 38 22 88 43 459

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 19 1983 101 594 2167 138 114 38 22 88 43 459

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 19 1983 102 594 2167 138 114 38 22 88 43 459

-----|-----|-----|-----|

## Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 2.85 0.15 2.00 3.00 1.00 1.00 1.25 0.75 1.00 0.17 1.83

Final Sat.: 1700 4852 248 3400 5100 1700 1700 2132 1268 1700 289 3111

-----|-----|-----|-----|

## Capacity Analysis Module:

Vol/Sat: 0.01 0.41 0.41 0.17 0.42 0.08 0.07 0.02 0.02 0.05 0.15 0.15

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.630

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

## Volume Module:

Base Vol:	0	1554	165	129	1487	0	0	0	0	392	0	136
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	1577	167	131	1509	0	0	0	0	398	0	138
Added Vol:	0	16	0	0	12	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1593	167	131	1521	0	0	0	0	398	0	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1593	167	131	1521	0	0	0	0	398	0	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1593	167	131	1521	0	0	0	0	398	0	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1593	167	131	1521	0	0	0	0	398	0	138

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.71	0.29	1.00	3.00	0.00	0.00	0.00	0.00	1.48	0.00	0.52
Final Sat.:	0	4615	485	1700	5100	0	0	0	0	2524	0	876

## Capacity Analysis Module:

Vol/Sat:	0.00	0.35	0.35	0.08	0.30	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Los Alamitos/Cerritos	C xxxxxx 0.714	C xxxxxx 0.726	+ 0.011 V/C
# 2 Bloomfield/Cerritos	C xxxxxx 0.703	C xxxxxx 0.707	+ 0.004 V/C
# 3 Denni/Cerritos	B xxxxxx 0.602	B xxxxxx 0.626	+ 0.024 V/C
# 4 Moody/Cerritos	A xxxxxx 0.580	A xxxxxx 0.594	+ 0.014 V/C
# 5 Walker/Cerritos	B xxxxxx 0.690	C xxxxxx 0.714	+ 0.024 V/C
# 6 Valleyview/Cerritos	C xxxxxx 0.742	C xxxxxx 0.756	+ 0.014 V/C
# 7 I-605 NB Ramps/Katella	A xxxxxx 0.500	A xxxxxx 0.508	+ 0.008 V/C
# 8 Walnut-Wallingsford/Katella	D xxxxxx 0.823	D xxxxxx 0.831	+ 0.008 V/C
# 9 Los Alamitos/Katella	C xxxxxx 0.755	C xxxxxx 0.770	+ 0.015 V/C
# 10 Bloomfield/Katella	D xxxxxx 0.830	D xxxxxx 0.848	+ 0.017 V/C
# 11 Lexington/Katella	A xxxxxx 0.587	B xxxxxx 0.620	+ 0.034 V/C
# 12 Cottonwood/Katella	A xxxxxx 0.375	A xxxxxx 0.399	+ 0.023 V/C
# 13 Siboney/Katella	A xxxxxx 0.468	A xxxxxx 0.543	+ 0.076 V/C
# 14 Winners/Katella	A xxxxxx 0.401	A xxxxxx 0.450	+ 0.049 V/C
# 15 Walker/Katella	B xxxxxx 0.667	C xxxxxx 0.703	+ 0.036 V/C
# 16 Valleyview/Katella	C xxxxxx 0.733	C xxxxxx 0.762	+ 0.029 V/C
# 17 Valleyview/Orangewood	C xxxxxx 0.795	D xxxxxx 0.808	+ 0.013 V/C
# 19 Los Alamitos/Fraquhar	B xxxxxx 0.622	B xxxxxx 0.625	+ 0.003 V/C

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	178	621	335	94	753	90	130	800	129	247	706	138
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	181	630	340	95	764	91	132	812	131	251	717	140
Added Vol:	10	17	2	0	14	1	4	9	22	3	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	647	342	95	778	92	136	821	153	254	720	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	647	342	95	778	92	136	821	153	254	720	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	647	342	95	778	92	136	821	153	254	720	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	647	342	95	778	92	136	821	153	254	720	140

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.06	0.19	0.20	0.06	0.23	0.05	0.08	0.24	0.09	0.15	0.21	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.707

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 38 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

## Volume Module:

Base Vol:	121	312	192	168	569	90	31	826	115	172	724	100
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	123	317	195	171	578	91	31	838	117	175	735	101
Added Vol:	0	5	0	0	5	0	0	10	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	322	195	171	583	91	31	848	117	175	741	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	322	195	171	583	91	31	848	117	175	741	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	322	195	171	583	91	31	848	117	175	741	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	322	195	171	583	91	31	848	117	175	741	102

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.25	0.75	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.76	0.24
Final Sat.:	1700	2117	1283	1700	2939	461	1700	2989	411	1700	2990	410

## Capacity Analysis Module:

Vol/Sat:	0.07	0.15	0.15	0.10	0.20	0.20	0.02	0.28	0.28	0.10	0.25	0.25
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Denni/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.626

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	1	0	0	1	1	0	2	0	1	1	0

## Volume Module:

Base Vol:	23	79	49	239	153	128	63	845	86	112	793	137
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	23	80	50	243	155	130	64	858	87	114	805	139
Added Vol:	1	18	15	0	21	0	0	9	1	3	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	98	65	243	176	130	64	867	88	117	811	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	98	65	243	176	130	64	867	88	117	811	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	98	65	243	176	130	64	867	88	117	811	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	98	65	243	176	130	64	867	88	117	811	139

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	0.52	0.35	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	221	891	588	1700	1700	1700	1700	3400	1700	1700	2902	498

## Capacity Analysis Module:

Vol/Sat:	0.11	0.11	0.11	0.14	0.10	0.08	0.04	0.25	0.05	0.07	0.28	0.28
Crit Moves:	****			****				****			****	

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	0	1	1	0	1

## Volume Module:

Base Vol:	1	2	1	583	3	206	71	1065	2	0	869	174
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	1	2	1	592	3	209	72	1081	2	0	882	177
Added Vol:	0	0	0	19	0	1	6	19	0	0	5	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	2	1	611	3	210	78	1100	2	0	887	189
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	2	1	611	3	210	78	1100	2	0	887	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	2	1	611	3	210	78	1100	2	0	887	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	2	1	611	3	210	78	1100	2	0	887	189

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.50	1.00	0.50	1.99	0.01	1.00	1.00	1.99	0.01	1.00	1.65	0.35
Final Sat.:	850	1700	850	3383	17	1700	1700	3394	6	1700	2804	596

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.18	0.18	0.12	0.05	0.32	0.32	0.00	0.32	0.32
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.714

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 39 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	104	241	53	166	750	70	20	1139	490	120	841	106
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	106	245	54	168	761	71	20	1156	497	122	854	108
Added Vol:	12	21	5	0	23	0	1	18	19	5	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	266	59	168	784	71	21	1174	516	127	859	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	266	59	168	784	71	21	1174	516	127	859	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	266	59	168	784	71	21	1174	516	127	859	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	266	59	168	784	71	21	1174	516	127	859	108

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.83	0.17	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3118	282	1700	5100	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.03	0.08	0.03	0.10	0.25	0.25	0.01	0.23	0.30	0.07	0.25	0.06
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.756

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

## Volume Module:

Base Vol:	157	1223	44	111	1342	270	97	639	469	170	732	147
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	159	1241	45	113	1362	274	98	649	476	173	743	149
Added Vol:	1	45	8	0	51	1	7	14	2	9	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	1286	53	113	1413	275	105	663	478	182	752	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	1286	53	113	1413	275	105	663	478	182	752	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	1286	53	113	1413	275	105	663	478	182	752	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	1286	53	113	1413	275	105	663	478	182	752	149

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.67	0.33
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2837	563

## Capacity Analysis Module:

Vol/Sat:	0.09	0.25	0.03	0.07	0.28	0.16	0.03	0.13	0.28	0.05	0.27	0.27
Crit Moves:	****			****			****		****	****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.508

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

## Volume Module:

Base Vol:	0	0	1067	0	0	398	118	1507	0	0	1454	833
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	1083	0	0	404	120	1530	0	0	1476	845
Added Vol:	0	0	29	0	0	0	0	27	0	0	47	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	1112	0	0	404	120	1557	0	0	1523	868
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	120	1557	0	0	1523	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	120	1557	0	0	1523	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	120	1557	0	0	1523	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.46	0.00	0.00	0.30	0.00
Crit Moves:					****				****			

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.831

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 59 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	1	0	1	0

## Volume Module:

Base Vol:	548	159	118	18	140	30	17	1901	338	182	1671	15
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	556	161	120	18	142	30	17	1930	343	185	1696	15
Added Vol:	0	0	0	2	0	0	0	55	0	0	67	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	556	161	120	20	142	30	17	1985	343	185	1763	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	556	161	120	20	142	30	17	1985	343	185	1763	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	556	161	120	20	142	30	17	1985	343	185	1763	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	556	161	120	20	142	30	17	1985	343	185	1763	15

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.33	0.38	0.29	1.00	1.00	1.00	1.00	3.41	0.59	1.00	3.00	1.00
Final Sat.:	2258	655	486	1700	1700	1700	1700	5798	1002	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.25	0.25	0.25	0.01	0.08	0.02	0.01	0.34	0.34	0.11	0.35	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.770

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 46 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	388	939	433	155	937	185	169	1538	255	325	1229	84
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	394	953	439	157	951	188	172	1561	259	330	1247	85
Added Vol:	0	6	9	15	12	12	11	46	0	12	55	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	394	959	448	172	963	200	183	1607	259	342	1302	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	394	959	448	172	963	200	183	1607	259	342	1302	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	394	959	448	172	963	200	183	1607	259	342	1302	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	394	959	448	172	963	200	183	1607	259	342	1302	100
OvlAdjVol:			278			109			62			14

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.12	0.19	0.26	0.05	0.19	0.12	0.05	0.32	0.15	0.10	0.26	0.06
OvlAdjV/S:			0.16			0.06			0.04			0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.848

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 64 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Prot+Permit				Prot+Permit				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	1	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	88	357	12	179	190	401	323	1591	41	30	1239	245
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	89	362	12	182	193	407	328	1615	42	30	1258	249
Added Vol:	1	1	1	5	1	0	0	71	1	1	82	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	363	13	187	194	407	328	1686	43	31	1340	253
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	363	13	187	194	407	328	1686	43	31	1340	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	363	13	187	194	407	328	1686	43	31	1340	253
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	363	13	187	194	407	328	1686	43	31	1340	253

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.93	0.07	1.00	1.00	1.00	1.00	2.93	0.07	1.00	2.52	0.48
Final Sat.:	1700	3281	119	1700	1700	1700	1700	4974	126	1700	4291	809

## Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.11	0.11	0.11	0.24	0.19	0.34	0.34	0.02	0.31	0.31
Crit Moves:	****					****	****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.620

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	82	39	132	114	0	140	109	1604	106	118	1453	95
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	83	40	134	116	0	142	111	1628	108	120	1475	96
Added Vol:	0	1	0	22	0	1	0	91	0	5	99	32
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	41	134	138	0	143	111	1719	108	125	1574	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	41	134	138	0	143	111	1719	108	125	1574	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	41	134	138	0	143	111	1719	108	125	1574	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	41	134	138	0	143	111	1719	108	125	1574	128

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.00	1.00	2.00	3.00	1.00	1.00	2.77	0.23
Final Sat.:	1700	1700	1700	1700	0	1700	3400	5100	1700	1700	4715	385

## Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.08	0.08	0.00	0.08	0.03	0.34	0.06	0.07	0.33	0.33
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.399

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

## Volume Module:

Base Vol:	0	0	0	7	0	3	6	1635	0	0	1539	7
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	0	7	0	3	6	1660	0	0	1562	7
Added Vol:	0	0	0	0	0	0	0	118	0	0	136	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	7	0	3	6	1778	0	0	1698	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	7	0	3	6	1778	0	0	1698	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	7	0	3	6	1778	0	0	1698	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	7	0	3	6	1778	0	0	1698	7

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.40	0.00	0.60	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2380	0	1020	1700	5100	0	0	5079	21

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.33	0.33
Crit Moves:				****				****				****

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.543

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	0		1		0	0		1		0	2		0		2	1		0		3

## Volume Module:

Base Vol:	42	2	61	36	0	12	124	1697	31	27	1675	16
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	43	2	62	37	0	12	126	1722	31	27	1700	16
Added Vol:	0	0	0	34	0	34	43	100	0	92	110	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	2	62	71	0	46	169	1822	31	119	1810	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	2	62	71	0	46	169	1822	31	119	1810	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	2	62	71	0	46	169	1822	31	119	1810	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	2	62	71	0	46	169	1822	31	119	1810	16

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.81	xxxx	1.19	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1623	77	1700	3082	0	2018	3400	5013	87	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.04	0.02	0.00	0.02	0.05	0.36	0.36	0.07	0.35	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.450

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	9	1	6	4	2	2	21	1478	57	63	1577	6
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	9	1	6	4	2	2	21	1500	58	64	1601	6
Added Vol:	0	0	0	4	0	0	52	162	0	0	174	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1	6	8	2	2	73	1662	58	64	1775	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	1	6	8	2	2	73	1662	58	64	1775	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	6	8	2	2	73	1662	58	64	1775	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	1	6	8	2	2	73	1662	58	64	1775	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.14	0.86	1.00	0.50	0.50	1.00	2.90	0.10	1.00	2.99	0.01
Final Sat.:	1700	243	1457	1700	850	850	1700	4928	172	1700	5083	17

## Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.34	0.34	0.04	0.35	0.35
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.703

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 37 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	3	0	0	790	11	172	215	1526	14	13	1568	365
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	3	0	0	802	11	175	218	1549	14	13	1592	370
Added Vol:	0	0	0	0	0	48	38	127	0	0	127	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	802	11	223	256	1676	14	13	1719	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	802	11	223	256	1676	14	13	1719	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	802	11	223	256	1676	14	13	1719	370
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	802	11	223	256	1676	14	13	1719	370

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.97	0.03	2.00	2.00	2.97	0.03	1.00	3.00	1.00
Final Sat.:	1700	1700	0	3353	47	3400	3400	5057	43	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.24	0.24	0.07	0.08	0.33	0.33	0.01	0.34	0.22
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.762

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 45 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	822	1498	272	186	1087	207	234	956	689	202	1174	140
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	834	1520	276	189	1103	210	238	970	699	205	1192	142
Added Vol:	45	3	2	0	4	58	50	28	49	3	23	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	879	1523	278	189	1107	268	288	998	748	208	1215	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	879	1523	278	189	1107	268	288	998	0	208	1215	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	879	1523	278	189	1107	268	288	998	0	208	1215	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	879	1523	278	189	1107	268	288	998	0	208	1215	142

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.17	0.30	0.16	0.06	0.22	0.16	0.08	0.20	0.00	0.06	0.24	0.08
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.808

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 54 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	10	2027	63	253	1711	47	132	40	20	103	22	562
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	10	2057	64	257	1737	48	134	41	20	105	22	570
Added Vol:	0	42	0	8	47	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	2099	64	265	1784	48	134	41	20	105	22	579
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	2099	64	265	1784	48	134	41	20	105	22	579
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	2099	64	265	1784	48	134	41	20	105	22	579
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	2099	64	265	1784	48	134	41	20	105	22	579

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.91	0.09	2.00	3.00	1.00	1.00	1.33	0.67	1.00	0.07	1.93
Final Sat.:	1700	4949	151	3400	5100	1700	1700	2267	1133	1700	126	3274

## Capacity Analysis Module:

Vol/Sat:	0.01	0.42	0.42	0.08	0.35	0.03	0.08	0.02	0.02	0.06	0.18	0.18
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.625

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	1	0	1	0	0

## Volume Module:

Base Vol:	0	1712	166	122	1224	0	0	0	0	0	315	0	106
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	1738	168	124	1242	0	0	0	0	0	320	0	108
Added Vol:	0	14	0	0	24	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1752	168	124	1266	0	0	0	0	0	320	0	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1752	168	124	1266	0	0	0	0	0	320	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1752	168	124	1266	0	0	0	0	0	320	0	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1752	168	124	1266	0	0	0	0	0	320	0	108

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.74	0.26	1.00	3.00	0.00	0.00	0.00	0.00	1.49	0.01	0.50
Final Sat.:	0	4652	448	1700	5100	0	0	0	0	2544	0	856

## Capacity Analysis Module:

Vol/Sat:	0.00	0.38	0.38	0.07	0.25	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Crit Moves:	****			****						****		

\*\*\*\*\*

Impact Analysis Report  
Level Of Service

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Los Alamitos/Cerritos	C xxxxx 0.756	C xxxxx 0.769	+ 0.013 V/C
# 2 Bloomfield/Cerritos	C xxxxx 0.750	C xxxxx 0.758	+ 0.008 V/C
# 3 Denni/Cerritos	C xxxxx 0.762	D xxxxx 0.817	+ 0.055 V/C
# 4 Moody/Cerritos	C xxxxx 0.766	C xxxxx 0.784	+ 0.017 V/C
# 5 Walker/Cerritos	C xxxxx 0.740	C xxxxx 0.759	+ 0.019 V/C
# 6 Valleyview/Cerritos	D xxxxx 0.846	D xxxxx 0.866	+ 0.020 V/C
# 7 I-605 NB Ramps/Katella	A xxxxx 0.598	B xxxxx 0.611	+ 0.013 V/C
# 8 Walnut-Wallingsford/Katella	C xxxxx 0.721	C xxxxx 0.733	+ 0.012 V/C
# 9 Los Alamitos/Katella	C xxxxx 0.755	C xxxxx 0.773	+ 0.018 V/C
# 10 Bloomfield/Katella	C xxxxx 0.752	C xxxxx 0.776	+ 0.024 V/C
# 11 Lexington/Katella	A xxxxx 0.600	B xxxxx 0.630	+ 0.030 V/C
# 12 Cottonwood/Katella	A xxxxx 0.453	A xxxxx 0.484	+ 0.031 V/C
# 13 Siboney/Katella	A xxxxx 0.531	A xxxxx 0.584	+ 0.052 V/C
# 14 Winners/Katella	A xxxxx 0.528	B xxxxx 0.629	+ 0.101 V/C
# 15 Walker/Katella	B xxxxx 0.697	C xxxxx 0.722	+ 0.025 V/C
# 16 Valleyview/Katella	C xxxxx 0.760	C xxxxx 0.779	+ 0.019 V/C
# 17 Valleyview/Orangewood	D xxxxx 0.838	D xxxxx 0.853	+ 0.015 V/C
# 19 Los Alamitos/Fraquhar	B xxxxx 0.627	B xxxxx 0.633	+ 0.006 V/C

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #1 Los Alamitos/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.769

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 46 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	261	803	409	84	542	66	129	801	165	296	798	115
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	265	815	415	85	550	67	131	813	167	300	810	117
Added Vol:	22	18	3	0	22	4	2	21	18	3	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	833	418	85	572	71	133	834	185	303	827	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	833	418	85	572	71	133	834	185	303	827	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	833	418	85	572	71	133	834	185	303	827	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	833	418	85	572	71	133	834	185	303	827	117

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3400	1700	1700	3400	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.08	0.25	0.25	0.05	0.17	0.04	0.08	0.25	0.11	0.18	0.24	0.07
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #2 Bloomfield/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.758

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 44 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	1	0	1	1	0	1	0	1	1	0

## Volume Module:

Base Vol:	108	514	158	61	285	99	159	1104	104	98	1055	177
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	110	522	160	62	289	100	161	1121	106	99	1071	180
Added Vol:	0	8	0	0	9	0	0	24	0	0	19	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	530	160	62	298	100	161	1145	106	99	1090	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	530	160	62	298	100	161	1145	106	99	1090	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	530	160	62	298	100	161	1145	106	99	1090	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	530	160	62	298	100	161	1145	106	99	1090	180

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.54	0.46	1.00	1.50	0.50	1.00	1.83	0.17	1.00	1.72	0.28
Final Sat.:	1700	2610	790	1700	2543	857	1700	3113	287	1700	2919	481

## Capacity Analysis Module:

Vol/Sat:	0.06	0.20	0.20	0.04	0.12	0.12	0.09	0.37	0.37	0.06	0.37	0.37
Crit Moves:	****			****			****			****		

\*\*\*\*\*

```

-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #3 Denni/Cerritos
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.817
Loss Time (sec):      5          Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        56          Level Of Service:          D
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Split Phase      Split Phase      Prot+Permit      Prot+Permit
Rights:      Include      Include      Include      Include
Min. Green:      0 0 0      0 0 0      0 0 0      0 0 0
Y+R:      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:      0 0 1! 0 0      1 0 1 0 1      1 0 2 0 1      1 0 1 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:      56 180 77      95 78 81      123 1192 33      49 1113 209
Growth Adj:      1.01 1.01 1.01      1.01 1.01 1.01      1.01 1.01 1.01      1.01 1.01 1.01
Initial Bse:      57 183 78      96 79 82      125 1210 33      50 1130 212
Added Vol:      9 29 27      0 41 0      0 8 16      18 11 0
PasserByVol:      0 0 0      0 0 0      0 0 0      0 0 0
Initial Fut:      66 212 105      96 120 82      125 1218 49      68 1141 212
User Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Volume:      66 212 105      96 120 82      125 1218 49      68 1141 212
Reduct Vol:      0 0 0      0 0 0      0 0 0      0 0 0
Reduced Vol:      66 212 105      96 120 82      125 1218 49      68 1141 212
PCE Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
MLF Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
FinalVolume:      66 212 105      96 120 82      125 1218 49      68 1141 212
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:      1700 1700 1700      1700 1700 1700      1700 1700 1700      1700 1700 1700
Adjustment:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
Lanes:      0.17 0.56 0.27      1.00 1.00 1.00      1.00 2.00 1.00      1.00 1.69 0.31
Final Sat.:      292 940 467      1700 1700 1700      1700 3400 1700      1700 2867 533
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:      0.23 0.23 0.23      0.06 0.07 0.05      0.07 0.36 0.03      0.04 0.40 0.40
Crit Moves:      ****      ****      ****      ****
*****

```

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #4 Moody/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.784

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	1	0	1	1	0	1

## Volume Module:

Base Vol:	3	0	0	250	0	151	224	1131	1	0	1228	416
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	3	0	0	254	0	153	227	1148	1	0	1246	422
Added Vol:	0	0	0	18	0	2	8	25	0	0	28	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	0	272	0	155	235	1173	1	0	1274	432
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	0	272	0	155	235	1173	1	0	1274	432
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	272	0	155	235	1173	1	0	1274	432
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	0	272	0	155	235	1173	1	0	1274	432

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	2.00	0.00	1.00	1.00	1.99	0.01	1.00	1.49	0.51
Final Sat.:	1700	1700	0	3400	0	1700	1700	3397	3	1700	2539	861

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.09	0.14	0.35	0.35	0.00	0.50	0.50
Crit Moves:	****					****	****				****	

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #5 Walker/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.759

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 45 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	1	0	1	1	0	1	0	3	0	1	1	0	2	0	1

## Volume Module:

Base Vol:	502	737	213	106	449	46	95	1068	237	93	1124	157
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	510	748	216	108	456	47	96	1084	241	94	1141	159
Added Vol:	10	20	7	0	24	0	2	24	18	10	28	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	520	768	223	108	480	47	98	1108	259	104	1169	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	520	768	223	108	480	47	98	1108	259	104	1169	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	520	768	223	108	480	47	98	1108	259	104	1169	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	520	768	223	108	480	47	98	1108	259	104	1169	159

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	1.82	0.18	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	3400	3400	1700	1700	3098	302	1700	5100	1700	1700	3400	1700

## Capacity Analysis Module:

Vol/Sat:	0.15	0.23	0.13	0.06	0.15	0.15	0.06	0.22	0.15	0.06	0.34	0.09
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #6 Valleyview/Cerritos

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.866

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 71 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	3	0	1	2	0	1	1	0

## Volume Module:

Base Vol:	345	1893	224	146	1059	201	317	854	280	100	667	128
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	350	1921	227	148	1075	204	322	867	284	101	677	130
Added Vol:	2	43	6	0	55	2	7	23	1	7	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	352	1964	233	148	1130	206	329	890	285	108	711	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	352	1964	233	148	1130	206	329	890	285	108	711	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	352	1964	233	148	1130	206	329	890	285	108	711	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	352	1964	233	148	1130	206	329	890	285	109	711	130

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.69	0.31
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	5100	1700	3400	2875	525

## Capacity Analysis Module:

Vol/Sat:	0.21	0.39	0.14	0.09	0.22	0.12	0.10	0.17	0.17	0.03	0.25	0.25
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #7 I-605 NB Ramps/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.611  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 30 Level Of Service: B  
 \*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Include				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	

## Volume Module:

Base Vol:	0	0	742	0	0	159	184	1835	0	0	1675	846
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	753	0	0	161	187	1863	0	0	1700	859
Added Vol:	0	0	39	0	0	0	0	45	0	0	46	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	792	0	0	161	187	1908	0	0	1746	881
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	0	0	0	187	1908	0	0	1746	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	187	1908	0	0	1746	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	0	0	0	187	1908	0	0	1746	0

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	1700	0	0	1700	1700	3400	0	0	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.56	0.00	0.00	0.34	0.00
Crit Moves:					****				****			

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #8 Walnut-Wallingsford/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.733

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 41 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	1	0	1	0

## Volume Module:

Base Vol:	307	74	160	19	66	60	25	2057	365	182	2079	11
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	312	75	162	19	67	61	25	2088	370	185	2110	11
Added Vol:	0	0	0	1	0	0	1	81	0	0	66	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	75	162	20	67	61	26	2169	370	185	2176	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	312	75	162	20	67	61	26	2169	370	185	2176	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	75	162	20	67	61	26	2169	370	185	2176	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	75	162	20	67	61	26	2169	370	185	2176	13

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.14	0.27	0.59	1.00	1.00	1.00	1.00	3.42	0.58	1.00	3.00	1.00
Final Sat.:	1929	465	1006	1700	1700	1700	1700	5808	992	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.01	0.04	0.04	0.02	0.37	0.37	0.11	0.43	0.01
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #9 Los Alamitos/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.773

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 47 Level Of Service: C

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Ovl Ovl Ovl Ovl

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 3 0 1 2 0 3 0 1

-----|-----|-----|-----|

## Volume Module:

Base Vol: 456 878 366 137 965 219 255 1438 493 302 1514 95

Growth Adj: 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01

Initial Bse: 463 891 371 139 979 222 259 1460 500 307 1537 96

Added Vol: 0 13 17 19 8 13 16 65 0 14 55 19

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 463 904 388 158 987 235 275 1525 500 321 1592 115

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 463 904 388 158 987 235 275 1525 500 321 1592 115

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 463 904 388 158 987 235 275 1525 500 321 1592 115

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 463 904 388 158 987 235 275 1525 500 321 1592 115

OvlAdjVol: 228 98 269 36

-----|-----|-----|-----|

## Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 3.00 1.00 2.00 3.00 1.00 2.00 3.00 1.00 2.00 3.00

Final Sat.: 3400 5100 1700 3400 5100 1700 3400 5100 1700 3400 5100

-----|-----|-----|-----|

## Capacity Analysis Module:

Vol/Sat: 0.14 0.18 0.23 0.05 0.19 0.14 0.08 0.30 0.29 0.09 0.31 0.07

OvlAdjV/S: 0.13 0.06 0.16 0.02

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #10 Bloomfield/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.776

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 47 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	2	1	0	1

## Volume Module:

Base Vol:	46	105	25	171	160	181	279	1614	77	59	1747	235
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	47	107	25	174	162	184	283	1638	78	60	1773	239
Added Vol:	1	1	1	8	1	0	0	101	1	1	89	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	108	26	182	163	184	283	1739	79	61	1862	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	108	26	182	163	184	283	1739	79	61	1862	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	108	26	182	163	184	283	1739	79	61	1862	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	48	108	26	182	163	184	283	1739	79	61	1862	246

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.61	0.39	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.65	0.35
Final Sat.:	1700	2731	669	1700	1700	1700	1700	4878	222	1700	4506	594

## Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.04	0.11	0.10	0.11	0.17	0.36	0.36	0.04	0.41	0.41
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #11 Lexington/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.630

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	1	0	1	0	0	2	0	3	0	1	1	0	2	1	0

## Volume Module:

Base Vol:	94	55	161	126	0	107	105	1524	72	124	1674	99
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	95	56	163	128	0	109	107	1547	73	126	1699	100
Added Vol:	0	10	0	24	5	1	1	127	0	6	113	38
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	66	163	152	5	110	108	1674	73	132	1812	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	66	163	152	5	110	108	1674	73	132	1812	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	66	163	152	5	110	108	1674	73	132	1812	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	66	163	152	5	110	108	1674	73	132	1812	138

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.14	0.04	0.82	2.00	3.00	1.00	1.00	2.79	0.21
Final Sat.:	1700	1700	1700	1938	64	1398	3400	5100	1700	1700	4738	362

## Capacity Analysis Module:

Vol/Sat:	0.06	0.04	0.10	0.08	0.08	0.08	0.03	0.33	0.04	0.08	0.38	0.38
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #12 Cottonwood/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.484

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 23 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	2	1	0

## Volume Module:

Base Vol:	0	0	0	14	0	9	28	1836	0	0	1897	8
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	0	0	14	0	9	28	1864	0	0	1925	8
Added Vol:	0	0	0	0	0	0	0	157	0	0	157	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	9	28	2021	0	0	2082	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	9	28	2021	0	0	2082	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	0	9	28	2021	0	0	2082	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	0	9	28	2021	0	0	2082	8

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.22	xxxx	0.78	1.00	3.00	0.00	0.00	2.99	0.01
Final Sat.:	0	0	0	2070	0	1330	1700	5100	0	0	5080	20

## Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.40	0.00	0.00	0.41	0.41
Crit Moves:				****				****				****

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #13 Siboney/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.584

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	0		1		0	0		1		0	2		0		2	1		0		3

## Volume Module:

Base Vol:	82	4	58	75	3	64	129	1701	32	68	1825	38
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	83	4	59	76	3	65	131	1727	32	69	1852	39
Added Vol:	0	0	0	19	0	19	65	131	0	60	145	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	4	59	95	3	84	196	1858	32	129	1997	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	4	59	95	3	84	196	1858	32	129	1997	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	4	59	95	3	84	196	1858	32	129	1997	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	4	59	95	3	84	196	1858	32	129	1997	39

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.95	0.05	1.00	1.57	0.05	1.38	2.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1621	79	1700	2664	85	2351	3400	5012	88	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.05	0.05	0.03	0.04	0.04	0.04	0.06	0.37	0.37	0.08	0.39	0.02
Crit Moves:	****					****	****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #14 Winners/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.629

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted				Permitted				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	1	0	0	1	0	1	0	2	1	0	1	0	2	1	0

## Volume Module:

Base Vol:	48	2	50	32	0	46	110	1728	10	38	1785	6
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	49	2	51	32	0	47	112	1754	10	39	1812	6
Added Vol:	0	0	0	40	0	0	74	125	0	0	204	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	2	51	72	0	47	186	1879	10	39	2016	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	2	51	72	0	47	186	1879	10	39	2016	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	2	51	72	0	47	186	1879	10	39	2016	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	2	51	72	0	47	186	1879	10	39	2016	6

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.04	0.96	1.00	0.00	1.00	1.00	2.98	0.02	1.00	2.99	0.01
Final Sat.:	1700	65	1635	1700	0	1700	1700	5073	27	1700	5085	15

## Capacity Analysis Module:

Vol/Sat:	0.03	0.03	0.03	0.04	0.00	0.03	0.11	0.37	0.37	0.02	0.40	0.40
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #15 Walker/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.722

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	1	0	1	0	0	2	0	2	1	0	1

## Volume Module:

Base Vol:	27	15	4	596	1	213	312	1600	5	0	1726	602
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	27	15	4	605	1	216	317	1624	5	0	1752	611
Added Vol:	0	0	0	0	0	57	41	124	0	0	147	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	15	4	605	1	273	358	1748	5	0	1899	611
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	15	4	605	1	273	358	1748	5	0	1899	611
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	15	4	605	1	273	358	1748	5	0	1899	611
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	15	4	605	1	273	358	1748	5	0	1899	611

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.99	0.01	2.00	2.00	2.99	0.01	1.00	3.00	1.00
Final Sat.:	1700	1404	296	3394	6	3400	3400	5085	15	1700	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.02	0.01	0.01	0.18	0.18	0.08	0.11	0.34	0.34	0.00	0.37	0.36
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #16 Valleyview/Katella

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.779

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 48 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	3	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1

## Volume Module:

Base Vol:	665	1474	176	228	1351	230	246	1063	1005	325	998	217
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	675	1496	179	231	1371	233	250	1079	1020	330	1013	220
Added Vol:	54	5	4	0	6	57	46	30	48	5	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	729	1501	183	231	1377	290	296	1109	1068	335	1049	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	729	1501	183	231	1377	290	296	1109	0	335	1049	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	729	1501	183	231	1377	290	296	1109	0	335	1049	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	729	1501	183	231	1377	290	296	1109	0	335	1049	220

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	5100	5100	1700	3400	5100	1700	3400	5100	1700	3400	5100	1700

## Capacity Analysis Module:

Vol/Sat:	0.14	0.29	0.11	0.07	0.27	0.17	0.09	0.22	0.00	0.10	0.21	0.13
Crit Moves:	****			****			****			****		

\*\*\*\*\*

## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #17 Valleyview/Orangewood

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.853

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 66 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	0	2	1	0	2	0	3	0	1	1	0	1	1	0	1	0	0	1	1

## Volume Module:

Base Vol:	19	1925	100	579	2104	136	112	37	22	87	42	445
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	19	1954	101	588	2136	138	114	38	22	88	43	452
Added Vol:	0	56	0	6	53	0	0	0	0	0	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	2010	101	594	2189	138	114	38	22	88	43	459
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	2010	101	594	2189	138	114	38	22	88	43	459
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	2010	101	594	2189	138	114	38	22	88	43	459
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	2010	102	594	2189	138	114	38	22	88	43	459

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.86	0.14	2.00	3.00	1.00	1.00	1.25	0.75	1.00	0.17	1.83
Final Sat.:	1700	4855	245	3400	5100	1700	1700	2132	1268	1700	289	3111

## Capacity Analysis Module:

Vol/Sat:	0.01	0.41	0.41	0.17	0.43	0.08	0.07	0.02	0.02	0.05	0.15	0.15
Crit Moves:	****			****			****			****		

\*\*\*\*\*



## Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #19 Los Alamitos/Fraquhar

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.633

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	

## Volume Module:

Base Vol:	0	1554	165	129	1487	0	0	0	0	392	0	136
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	1577	167	131	1509	0	0	0	0	398	0	138
Added Vol:	0	30	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1607	167	131	1531	0	0	0	0	398	0	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1607	167	131	1531	0	0	0	0	398	0	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1607	167	131	1531	0	0	0	0	398	0	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1607	167	131	1531	0	0	0	0	398	0	138

## Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.72	0.28	1.00	3.00	0.00	0.00	0.00	0.00	1.48	0.00	0.52
Final Sat.:	0	4619	481	1700	5100	0	0	0	0	2524	0	876

## Capacity Analysis Module:

Vol/Sat:	0.00	0.35	0.35	0.08	0.30	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Crit Moves:	****			****						****		

\*\*\*\*\*

---



















## **APPENDIX D**

### **HCM WORKSHEETS**

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1507	0	0	1454	833	0	0	1067	0	0	398
Future Volume (vph)	118	1507	0	0	1454	833	0	0	1067	0	0	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.97	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4677	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4677	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	1638	0	0	1580	905	0	0	1160	0	0	433
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	1638	0	0	1901	561	0	0	1160	0	0	433
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	13.2	112.1			89.9	112.1			112.1			112.1
Effective Green, g (s)	13.2	112.1			89.9	112.1			112.1			112.1
Actuated g/C Ratio	0.12	1.00			0.80	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	208	3539			3750	1362			1611			1611
v/s Ratio Prot	0.07				0.41							
v/s Ratio Perm		0.46				0.41			c0.72			0.27
v/c Ratio	0.62	0.46			0.51	0.41			0.72			0.27
Uniform Delay, d1	47.0	0.0			3.7	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	5.3	0.1			0.1	0.9			1.6			0.1
Delay (s)	52.4	0.1			3.8	0.9			1.6			0.1
Level of Service	D	A			A	A			A			A
Approach Delay (s)		3.9			3.2			1.6			0.1	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			2.8									A
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			112.1									9.0
Intersection Capacity Utilization			114.4%									H
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	84	10	69	217	74
Future Vol, veh/h	77	84	10	69	217	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	91	11	75	236	80
Number of Lanes	1	0	1	1	2	1








Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.8	9.1	8.1
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	48%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	52%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	69	161	109	109	74
LT Vol	10	0	77	0	0	0
Through Vol	0	69	0	109	109	0
RT Vol	0	0	84	0	0	74
Lane Flow Rate	11	75	175	118	118	80
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.018	0.117	0.256	0.168	0.168	0.06
Departure Headway (Hd)	6.122	5.618	5.264	5.114	5.114	2.665
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	583	636	681	702	702	1338
Service Time	3.875	3.371	3.009	2.843	2.843	0.393
HCM Lane V/C Ratio	0.019	0.118	0.257	0.168	0.168	0.06
HCM Control Delay	9	9.1	9.8	8.9	8.9	5.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1	0.6	0.6	0.2

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	1835	0	0	1675	846	0	0	742	0	0	159
Future Volume (vph)	184	1835	0	0	1675	846	0	0	742	0	0	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.98	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4703	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4703	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	1995	0	0	1821	920	0	0	807	0	0	173
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	200	1995	0	0	2107	616	0	0	807	0	0	173
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	15.8	108.1			83.3	108.1			108.1			108.1
Effective Green, g (s)	15.8	108.1			83.3	108.1			108.1			108.1
Actuated g/C Ratio	0.15	1.00			0.77	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	258	3539			3624	1362			1611			1611
v/s Ratio Prot	c0.11				0.45							
v/s Ratio Perm		c0.56				0.45			0.50			0.11
v/c Ratio	0.78	0.56			0.58	0.45			0.50			0.11
Uniform Delay, d1	44.4	0.0			5.2	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	13.5	0.2			0.2	1.1			0.2			0.0
Delay (s)	58.0	0.2			5.4	1.1			0.2			0.0
Level of Service	E	A			A	A			A			A
Approach Delay (s)		5.5			4.4			0.2			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			4.1									A
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			108.1									9.0
Intersection Capacity Utilization			103.3%									G
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	35	91	243	70	97
Future Vol, veh/h	89	35	91	243	70	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	38	99	264	76	105
Number of Lanes	1	0	1	1	2	1



















Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.3	10.8	6.9
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	72%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	28%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	243	124	35	35	97
LT Vol	91	0	89	0	0	0
Through Vol	0	243	0	35	35	0
RT Vol	0	0	35	0	0	97
Lane Flow Rate	99	264	135	38	38	105
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.158	0.386	0.22	0.056	0.056	0.084
Departure Headway (Hd)	5.765	5.261	5.875	5.32	5.32	2.866
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	620	681	609	671	671	1238
Service Time	3.517	3.013	3.632	3.066	3.066	0.611
HCM Lane V/C Ratio	0.16	0.388	0.222	0.057	0.057	0.085
HCM Control Delay	9.6	11.3	10.3	8.4	8.4	5.9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.6	1.8	0.8	0.2	0.2	0.3

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1522	0	0	1473	847	0	0	1073	0	0	398
Future Volume (vph)	118	1522	0	0	1473	847	0	0	1073	0	0	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.97	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4677	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4677	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	1654	0	0	1601	921	0	0	1166	0	0	433
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	1654	0	0	1928	571	0	0	1166	0	0	433
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	13.2	112.3			90.1	112.3			112.3			112.3
Effective Green, g (s)	13.2	112.3			90.1	112.3			112.3			112.3
Actuated g/C Ratio	0.12	1.00			0.80	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	208	3539			3752	1362			1611			1611
v/s Ratio Prot	0.07				0.41							
v/s Ratio Perm		0.47				0.42			0.72			0.27
v/c Ratio	0.62	0.47			0.51	0.42			0.72			0.27
Uniform Delay, d1	47.1	0.0			3.7	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	5.3	0.1			0.1	1.0			1.6			0.1
Delay (s)	52.5	0.1			3.9	1.0			1.6			0.1
Level of Service	D	A			A	A			A			A
Approach Delay (s)		3.9			3.2			1.6			0.1	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		2.9			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		112.3			Sum of lost time (s)			9.0				
Intersection Capacity Utilization		115.2%			ICU Level of Service			H				
Analysis Period (min)		15										
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	84	10	69	217	74
Future Vol, veh/h	77	84	10	69	217	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	91	11	75	236	80
Number of Lanes	1	0	1	1	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.8	9.1	8.1
HCM LOS	A	A	A








Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	48%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	52%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	69	161	109	109	74
LT Vol	10	0	77	0	0	0
Through Vol	0	69	0	109	109	0
RT Vol	0	0	84	0	0	74
Lane Flow Rate	11	75	175	118	118	80
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.018	0.117	0.256	0.168	0.168	0.06
Departure Headway (Hd)	6.122	5.618	5.264	5.114	5.114	2.665
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	583	636	681	702	702	1338
Service Time	3.875	3.371	3.009	2.843	2.843	0.393
HCM Lane V/C Ratio	0.019	0.118	0.257	0.168	0.168	0.06
HCM Control Delay	9	9.1	9.8	8.9	8.9	5.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1	0.6	0.6	0.2



# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	1866	0	0	1696	860	0	0	755	0	0	159
Future Volume (vph)	184	1866	0	0	1696	860	0	0	755	0	0	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.98	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4702	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4702	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	2028	0	0	1843	935	0	0	821	0	0	173
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	200	2028	0	0	2134	626	0	0	821	0	0	173
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	15.8	108.8			84.0	108.8			108.8			108.8
Effective Green, g (s)	15.8	108.8			84.0	108.8			108.8			108.8
Actuated g/C Ratio	0.15	1.00			0.77	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	257	3539			3630	1362			1611			1611
v/s Ratio Prot	c0.11				0.45							
v/s Ratio Perm		c0.57				0.46			0.51			0.11
v/c Ratio	0.78	0.57			0.59	0.46			0.51			0.11
Uniform Delay, d1	44.8	0.0			5.2	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	13.8	0.2			0.2	1.1			0.3			0.0
Delay (s)	58.6	0.2			5.4	1.1			0.3			0.0
Level of Service	E	A			A	A			A			A
Approach Delay (s)		5.5			4.5			0.3			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			4.1									
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			108.8									
Intersection Capacity Utilization			105.0%									
Analysis Period (min)			15									
c Critical Lane Group												






# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

### Intersection

Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	35	91	243	70	97
Future Vol, veh/h	89	35	91	243	70	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	38	99	264	76	105
Number of Lanes	1	0	1	1	2	1








Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.3	10.8	6.9
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	72%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	28%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	243	124	35	35	97
LT Vol	91	0	89	0	0	0
Through Vol	0	243	0	35	35	0
RT Vol	0	0	35	0	0	97
Lane Flow Rate	99	264	135	38	38	105
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.158	0.386	0.22	0.056	0.056	0.084
Departure Headway (Hd)	5.765	5.261	5.875	5.32	5.32	2.866
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	620	681	609	671	671	1238
Service Time	3.517	3.013	3.632	3.066	3.066	0.611
HCM Lane V/C Ratio	0.16	0.388	0.222	0.057	0.057	0.085
HCM Control Delay	9.6	11.3	10.3	8.4	8.4	5.9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.6	1.8	0.8	0.2	0.2	0.3

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1542	0	0	1504	855	0	0	1106	0	0	404
Future Volume (vph)	120	1542	0	0	1504	855	0	0	1106	0	0	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.97	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4678	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4678	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1676	0	0	1635	929	0	0	1202	0	0	439
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	0	0
Lane Group Flow (vph)	130	1676	0	0	1965	576	0	0	1202	0	0	439
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	13.3	113.9			91.6	113.9			113.9			113.9
Effective Green, g (s)	13.3	113.9			91.6	113.9			113.9			113.9
Actuated g/C Ratio	0.12	1.00			0.80	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	206	3539			3762	1362			1611			1611
v/s Ratio Prot	0.07				0.42							
v/s Ratio Perm		0.47				0.42			c0.75			0.27
v/c Ratio	0.63	0.47			0.52	0.42			0.75			0.27
Uniform Delay, d1	48.0	0.0			3.8	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	6.2	0.1			0.1	1.0			1.9			0.1
Delay (s)	54.1	0.1			3.9	1.0			1.9			0.1
Level of Service	D	A			A	A			A			A
Approach Delay (s)		4.0			3.2			1.9			0.1	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			3.0									A
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			113.9									9.0
Intersection Capacity Utilization			117.8%									H
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	85	10	70	220	75
Future Vol, veh/h	78	85	10	70	220	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	92	11	76	239	82
Number of Lanes	1	0	1	1	2	1






















Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.9	9.2	8.1
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	48%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	52%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	70	163	110	110	75
LT Vol	10	0	78	0	0	0
Through Vol	0	70	0	110	110	0
RT Vol	0	0	85	0	0	75
Lane Flow Rate	11	76	177	120	120	82
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.019	0.119	0.26	0.17	0.17	0.061
Departure Headway (Hd)	6.138	5.634	5.28	5.123	5.123	2.673
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	582	634	679	701	701	1333
Service Time	3.891	3.387	3.022	2.854	2.854	0.403
HCM Lane V/C Ratio	0.019	0.12	0.261	0.171	0.171	0.062
HCM Control Delay	9	9.2	9.9	8.9	8.9	5.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1	0.6	0.6	0.2

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  							
Traffic Volume (vph)	187	1877	0	0	1725	867	0	0	779	0	0	161
Future Volume (vph)	187	1877	0	0	1725	867	0	0	779	0	0	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.98	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4703	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4703	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	2040	0	0	1875	942	0	0	847	0	0	175
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	203	2040	0	0	2168	631	0	0	847	0	0	175
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	15.8	109.4			84.6	109.4			109.4			109.4
Effective Green, g (s)	15.8	109.4			84.6	109.4			109.4			109.4
Actuated g/C Ratio	0.14	1.00			0.77	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	255	3539			3636	1362			1611			1611
v/s Ratio Prot	c0.11				0.46							
v/s Ratio Perm		c0.58				0.46			0.53			0.11
v/c Ratio	0.80	0.58			0.60	0.46			0.53			0.11
Uniform Delay, d1	45.2	0.0			5.2	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	15.7	0.2			0.3	1.1			0.3			0.0
Delay (s)	60.9	0.2			5.5	1.1			0.3			0.0
Level of Service	E	A			A	A			A			A
Approach Delay (s)		5.7			4.5			0.3			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			4.2									
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			109.4									
Intersection Capacity Utilization			106.8%									
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	36	92	247	71	98
Future Vol, veh/h	90	36	92	247	71	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	39	100	268	77	107
Number of Lanes	1	0	1	1	2	1



















Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.4	10.9	7
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	71%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	29%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	247	126	36	36	98
LT Vol	92	0	90	0	0	0
Through Vol	0	247	0	36	36	0
RT Vol	0	0	36	0	0	98
Lane Flow Rate	100	268	137	39	39	107
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.16	0.393	0.224	0.057	0.057	0.085
Departure Headway (Hd)	5.775	5.272	5.885	5.335	5.335	2.881
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	679	608	669	669	1231
Service Time	3.53	3.027	3.646	3.082	3.082	0.627
HCM Lane V/C Ratio	0.162	0.395	0.225	0.058	0.058	0.087
HCM Control Delay	9.6	11.4	10.4	8.4	8.4	5.9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.6	1.9	0.9	0.2	0.2	0.3

# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1557	0	0	1523	868	0	0	1112	0	0	404
Future Volume (vph)	120	1557	0	0	1523	868	0	0	1112	0	0	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.97	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4678	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4678	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1692	0	0	1655	943	0	0	1209	0	0	439
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	0	0
Lane Group Flow (vph)	130	1692	0	0	1991	585	0	0	1209	0	0	439
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	13.4	114.5			92.1	114.5			114.5			114.5
Effective Green, g (s)	13.4	114.5			92.1	114.5			114.5			114.5
Actuated g/C Ratio	0.12	1.00			0.80	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	207	3539			3762	1362			1611			1611
v/s Ratio Prot	0.07				0.43							
v/s Ratio Perm		0.48				0.43			c0.75			0.27
v/c Ratio	0.63	0.48			0.53	0.43			0.75			0.27
Uniform Delay, d1	48.2	0.0			3.8	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	5.8	0.1			0.1	1.0			2.0			0.1
Delay (s)	54.0	0.1			3.9	1.0			2.0			0.1
Level of Service	D	A			A	A			A			A
Approach Delay (s)		3.9			3.3			2.0			0.1	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			3.0									A
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			114.5									9.0
Intersection Capacity Utilization			118.6%									H
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	85	10	70	220	75
Future Vol, veh/h	78	85	10	70	220	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	92	11	76	239	82
Number of Lanes	1	0	1	1	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.9	9.2	8.1
HCM LOS	A	A	A




















Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	48%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	52%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	70	163	110	110	75
LT Vol	10	0	78	0	0	0
Through Vol	0	70	0	110	110	0
RT Vol	0	0	85	0	0	75
Lane Flow Rate	11	76	177	120	120	82
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.019	0.119	0.26	0.17	0.17	0.061
Departure Headway (Hd)	6.138	5.634	5.28	5.123	5.123	2.673
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	582	634	679	701	701	1333
Service Time	3.891	3.387	3.022	2.854	2.854	0.403
HCM Lane V/C Ratio	0.019	0.12	0.261	0.171	0.171	0.062
HCM Control Delay	9	9.2	9.9	8.9	8.9	5.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1	0.6	0.6	0.2



# HCM Signalized Intersection Capacity Analysis

## 7: I-605 NB off-ramp & Katella

07/17/2019






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	1908	0	0	1746	881	0	0	792	0	0	161
Future Volume (vph)	187	1908	0	0	1746	881	0	0	792	0	0	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0			4.5	4.0			2.0			2.0
Lane Util. Factor	1.00	0.95			0.86	0.86			1.00			1.00
Frt	1.00	1.00			0.98	0.85			0.86			0.86
Flt Protected	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (prot)	1770	3539			4703	1362			1611			1611
Flt Permitted	0.95	1.00			1.00	1.00			1.00			1.00
Satd. Flow (perm)	1770	3539			4703	1362			1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	2074	0	0	1898	958	0	0	861	0	0	175
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	203	2074	0	0	2196	642	0	0	861	0	0	175
Turn Type	Prot	NA			NA	Free			Perm			Perm
Protected Phases	7				8							
Permitted Phases		4				Free			4			4
Actuated Green, G (s)	15.9	110.3			85.4	110.3			110.3			110.3
Effective Green, g (s)	15.9	110.3			85.4	110.3			110.3			110.3
Actuated g/C Ratio	0.14	1.00			0.77	1.00			1.00			1.00
Clearance Time (s)	4.5	2.0			4.5				2.0			2.0
Vehicle Extension (s)	3.0	3.0			3.0				3.0			3.0
Lane Grp Cap (vph)	255	3539			3641	1362			1611			1611
v/s Ratio Prot	c0.11				0.47							
v/s Ratio Perm		c0.59				0.47			0.53			0.11
v/c Ratio	0.80	0.59			0.60	0.47			0.53			0.11
Uniform Delay, d1	45.6	0.0			5.3	0.0			0.0			0.0
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.00
Incremental Delay, d2	15.7	0.3			0.3	1.2			0.3			0.0
Delay (s)	61.3	0.3			5.6	1.2			0.3			0.0
Level of Service	E	A			A	A			A			A
Approach Delay (s)		5.7			4.6			0.3			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			4.3									A
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			110.3									9.0
Intersection Capacity Utilization			108.4%									G
Analysis Period (min)			15									
c Critical Lane Group												

# HCM 6th AWSC

## 18: Lexington & Fraquhar

07/17/2019

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	36	92	247	71	98
Future Vol, veh/h	90	36	92	247	71	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	39	100	268	77	107
Number of Lanes	1	0	1	1	2	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	3	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.4	10.9	7
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	71%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	29%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	247	126	36	36	98
LT Vol	92	0	90	0	0	0
Through Vol	0	247	0	36	36	0
RT Vol	0	0	36	0	0	98
Lane Flow Rate	100	268	137	39	39	107
Geometry Grp	8	8	7	7	7	7
Degree of Util (X)	0.16	0.393	0.224	0.057	0.057	0.085
Departure Headway (Hd)	5.775	5.272	5.885	5.335	5.335	2.881
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	679	608	669	669	1231
Service Time	3.53	3.027	3.646	3.082	3.082	0.627
HCM Lane V/C Ratio	0.162	0.395	0.225	0.058	0.058	0.087
HCM Control Delay	9.6	11.4	10.4	8.4	8.4	5.9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.6	1.9	0.9	0.2	0.2	0.3



---

## APPENDIX K

# TRIBAL CULTURAL RESOURCES CONSULTATION



**This page intentionally left blank**



## APPENDIX K

### AB 52 TRIBAL CONSULTATION RECORD



**This page intentionally left blank**

## Local Government Tribal Consultation List Request

### Native American Heritage Commission

1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691  
916-373-3710  
916-373-5471 – Fax  
[nahe@nahe.ca.gov](mailto:nahe@nahe.ca.gov)

#### Type of List Requested

☒ CEQA Tribal Consultation List (AB 52) – *Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2*

☐ General Plan (SB 18) - *Per Government Code § 65352.3.*

#### Local Action Type:

\_\_\_ General Plan \_\_\_ General Plan Element \_\_\_ General Plan Amendment

\_\_\_ Specific Plan \_\_\_ Specific Plan Amendment \_\_\_ Pre-planning Outreach Activity

#### Required Information

Project Title: Cypress City Center

Local Government/Lead Agency: City of Cypress

Contact Person: John Ramirez

Street Address: 5725 Orange Avenue

City: Cypress, CA Zip: 90630

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: CityPlanner@cypressca.org

#### Specific Area Subject to Proposed Action

County: Orange City/Community: Cypress

#### Project Description:

The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park.

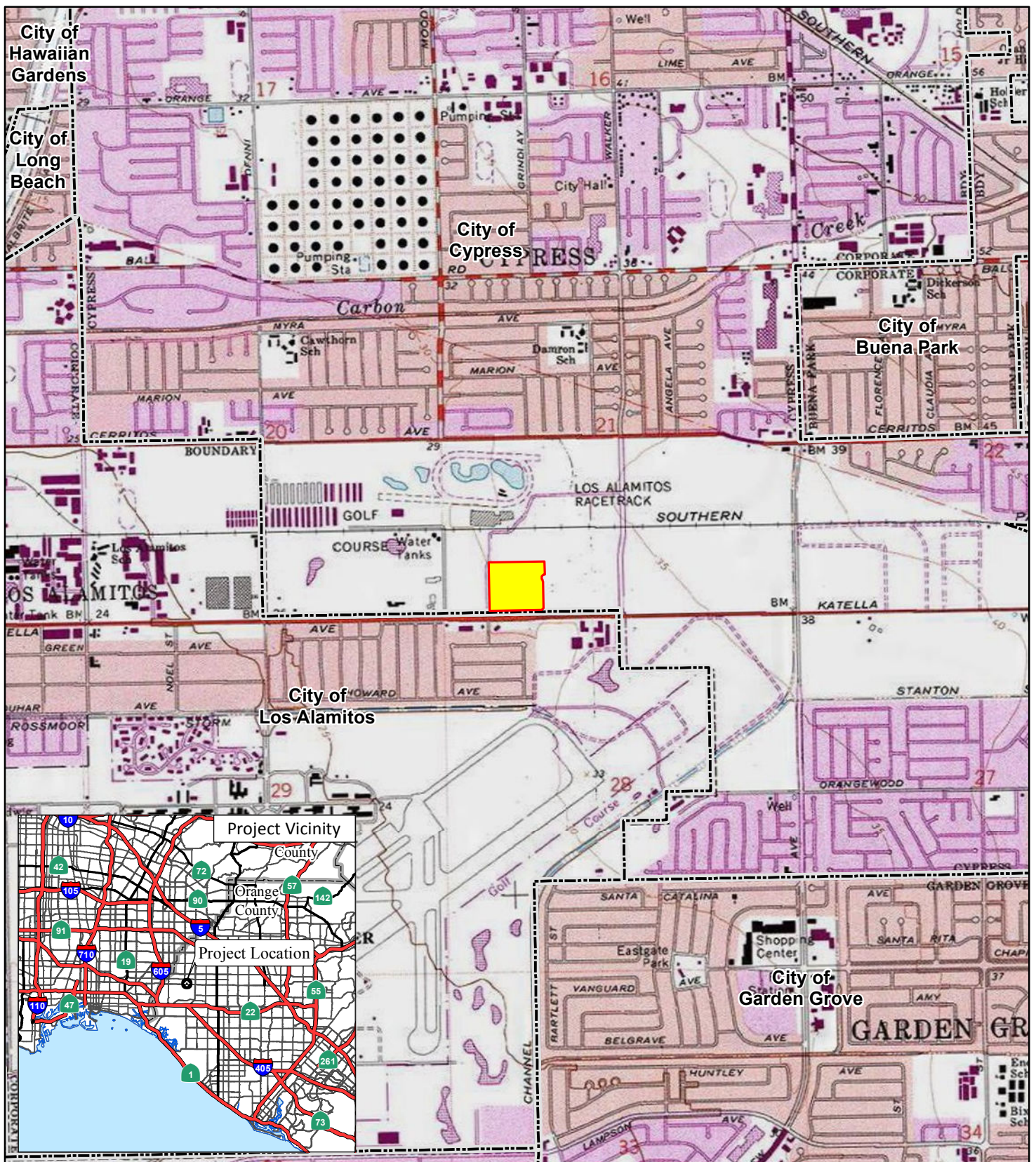
#### Additional Request

☒ Sacred Lands File Search - *Required Information:*

USGS Quadrangle Name(s): Los Alamitos, California

Township: 4 South Range: 11 West Section(s): 28





#### LEGEND

- Project Site
- City Boundary



0 1000 2000  
FEET

SOURCE: USGS 7.5' Quad., Los Alamitos, CA (1981)

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

FIGURE 1

*Cypress City Center*  
Regional and Project Location



**NATIVE AMERICAN HERITAGE COMMISSION**  
Cultural and Environmental Department  
1550 Harbor Blvd., Suite 100  
West Sacramento, CA 95691 Phone: (916) 373-3710  
Email: [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
Website: <http://www.nahc.ca.gov>



December 4, 2019

John Ramirez  
City of Cypress

VIA Email to: [cityplanner@cypressca.org](mailto:cityplanner@cypressca.org)

RE: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Cypress City Center Project, Orange County

Dear Mr. Ramirez:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the NAHC was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: [steven.quinn@nahc.ca.gov](mailto:steven.quinn@nahc.ca.gov).

Sincerely,



Steven Quinn  
Associate Governmental Program Analyst

Attachment

**Native American Heritage Commission  
Tribal Consultation List  
Orange County  
12/4/2019**

**Agua Caliente Band of Cahuilla Indians**

Jeff Grubbe, Chairperson  
5401 Dinah Shore Drive Cahuilla  
Palm Springs, CA, 92264  
Phone: (760) 699 - 6800  
Fax: (760) 699-6919

**Gabrielino /Tongva Nation**

Sandonne Goad, Chairperson  
106 1/2 Judge John Aiso St., Gabrielino  
#231  
Los Angeles, CA, 90012  
Phone: (951) 807 - 0479  
sgoad@gabrielino-tongva.com

**Campo Band of Diegueno Mission Indians**

Ralph Goff, Chairperson  
36190 Church Road, Suite 1 Diegueno  
Campo, CA, 91906  
Phone: (619) 478 - 9046  
Fax: (619) 478-5818  
rgoff@campo-nsn.gov

**Gabrielino Tongva Indians of California Tribal Council**

Robert Dorame, Chairperson  
P.O. Box 490 Gabrielino  
Bellflower, CA, 90707  
Phone: (562) 761 - 6417  
Fax: (562) 761-6417  
gtongva@gmail.com

**Ewiiapaayp Tribe**

Michael Garcia, Vice Chairperson  
4054 Willows Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 6315  
Fax: (619) 445-9126  
michaelg@leaningrock.net

**Gabrielino-Tongva Tribe**

Charles Alvarez,  
23454 Vanowen Street Gabrielino  
West Hills, CA, 91307  
Phone: (310) 403 - 6048  
roadkingcharles@aol.com

**Ewiiapaayp Tribe**

Robert Pinto, Chairperson  
4054 Willows Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 6315  
Fax: (619) 445-9126  
wmicklin@leaningrock.net

**Jamul Indian Village**

Erica Pinto, Chairperson  
P.O. Box 612 Diegueno  
Jamul, CA, 91935  
Phone: (619) 669 - 4785  
Fax: (619) 669-4817  
epinto@jiv-nsn.gov

**Gabrieleno Band of Mission Indians - Kizh Nation**

Andrew Salas, Chairperson  
P.O. Box 393 Gabrieleno  
Covina, CA, 91723  
Phone: (626) 926 - 4131  
admin@gabrielenoindians.org

**Jamul Indian Village**

Lisa Cumper, Tribal Historic  
Preservation Officer  
P.O. Box 612 Diegueno  
Jamul, CA, 91935  
Phone: (619) 669 - 4855  
lcumper@jiv-nsn.gov

**Gabrieleno/Tongva San Gabriel Band of Mission Indians**

Anthony Morales, Chairperson  
P.O. Box 693 Gabrieleno  
San Gabriel, CA, 91778  
Phone: (626) 483 - 3564  
Fax: (626) 286-1262  
GTTribalcouncil@aol.com

**Juaneno Band of Mission Indians**

Sonia Johnston, Chairperson  
P.O. Box 25628 Juaneno  
Santa Ana, CA, 92799  
sonia.johnston@sbcglobal.net

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Cypress City Center Project, Orange County.

**Native American Heritage Commission  
Tribal Consultation List  
Orange County  
12/4/2019**

**Juaneno Band of Mission  
Indians Acjachemen Nation -  
Belardes**

Matias Belardes, Chairperson  
32161 Avenida Los Amigos Juaneno  
San Juan Capistrano, CA, 92675  
Phone: (949) 293 - 8522  
kaamalam@gmail.com

**Manzanita Band of Kumeyaay  
Nation**

Angela Elliott Santos, Chairperson  
P.O. Box 1302 Diegueno  
Boulevard, CA, 91905  
Phone: (619) 766 - 4930  
Fax: (619) 766-4957

**Juaneno Band of Mission  
Indians Acjachemen Nation -  
Romero**

Teresa Romero, Chairperson  
31411-A La Matanza Street Juaneno  
San Juan Capistrano, CA, 92675  
Phone: (949) 488 - 3484  
Fax: (949) 488-3294  
tromero@juaneno.com

**Mesa Grande Band of Diegueno  
Mission Indians**

Michael Linton, Chairperson  
P.O. Box 270 Diegueno  
Santa Ysabel, CA, 92070  
Phone: (760) 782 - 3818  
Fax: (760) 782-9092  
mesagrandeband@msn.com

**La Jolla Band of Luiseno  
Indians**

Fred Nelson, Chairperson  
22000 Highway 76 Luiseno  
Pauma Valley, CA, 92061  
Phone: (760) 742 - 3771

**Pala Band of Mission Indians**

Shasta Gaughen, Tribal Historic  
Preservation Officer  
PMB 50, 35008 Pala Temecula Cupeno  
Rd. Luiseno  
Pala, CA, 92059  
Phone: (760) 891 - 3515  
Fax: (760) 742-3189  
sgaughen@palatribe.com

**La Posta Band of Diegueno  
Mission Indians**

Gwendolyn Parada, Chairperson  
8 Crestwood Road Diegueno  
Boulevard, CA, 91905  
Phone: (619) 478 - 2113  
Fax: (619) 478-2125  
LP13boots@aol.com

**Pauma Band of Luiseno Indians**

Temet Aguilar, Chairperson  
P.O. Box 369 Luiseno  
Pauma Valley, CA, 92061  
Phone: (760) 742 - 1289  
Fax: (760) 742-3422  
bennaecalac@aol.com

**La Posta Band of Diegueno  
Mission Indians**

Javaughn Miller, Tribal  
Administrator  
8 Crestwood Road Diegueno  
Boulevard, CA, 91905  
Phone: (619) 478 - 2113  
Fax: (619) 478-2125  
jmillier@LPtribe.net

**Pechanga Band of Luiseno  
Indians**

Mark Macarro, Chairperson  
P.O. Box 1477 Luiseno  
Temecula, CA, 92593  
Phone: (951) 770 - 6000  
Fax: (951) 695-1778  
epreston@pechanga-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Cypress City Center Project, Orange County.

**Native American Heritage Commission  
Tribal Consultation List  
Orange County  
12/4/2019**

***Rincon Band of Luiseno Indians***

Cheryl Madrigal, Tribal Historic  
Preservation Officer  
One Government Center Lane Luiseno  
Valley Center, CA, 92082  
Phone: (760) 297 - 2635  
crd@rincon-nsn.gov

***Viejas Band of Kumeyaay  
Indians***

John Christman, Chairperson  
1 Viejas Grade Road Diegueno  
Alpine, CA, 91901  
Phone: (619) 445 - 3810  
Fax: (619) 445-5337

***Rincon Band of Luiseno Indians***

Bo Mazzetti, Chairperson  
One Government Center Lane Luiseno  
Valley Center, CA, 92082  
Phone: (760) 749 - 1051  
Fax: (760) 749-5144  
bomazzetti@aol.com

***San Luis Rey Band of Mission  
Indians***

San Luis Rey, Tribal Council  
1889 Sunset Drive Luiseno  
Vista, CA, 92081  
Phone: (760) 724 - 8505  
Fax: (760) 724-2172  
cjmojado@slrmissionindians.org

***San Pasqual Band of Diegueno  
Mission Indians***

Allen Lawson, Chairperson  
P.O. Box 365 Diegueno  
Valley Center, CA, 92082  
Phone: (760) 749 - 3200  
Fax: (760) 749-3876  
allenl@sanpasqualtribe.org

***Soboba Band of Luiseno  
Indians***

Scott Cozart, Chairperson  
P. O. Box 487 Cahuilla  
San Jacinto, CA, 92583 Luiseno  
Phone: (951) 654 - 2765  
Fax: (951) 654-4198  
jontiveros@soboba-nsn.gov

***Sycuan Band of the Kumeyaay  
Nation***

Cody Martinez, Chairperson  
1 Kwaaypaay Court Kumeyaay  
El Cajon, CA, 92019  
Phone: (619) 445 - 2613  
Fax: (619) 445-1927  
ssilva@sycuan-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Cypress City Center Project, Orange County.



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Allen Lawson, Chairperson  
San Pasqual Band of Diegueño Mission Indians  
P.O. Box 365  
Valley Center, CA 92082

Dear Honorable Chairperson Lawson:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Stacy Berry, Mayor**

**Rob Johnson, Mayor Pro Tem**

**Jon E. Peat, Council Member**

**Paulo M. Morales, Council Member**

**Marlellen Yarc, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700

[www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Andrew Salas, Chairperson

Gabrieleno Band of Mission Indians – Kizh Nation

P.O. Box 393

Covina, CA 91723

Dear Honorable Chairperson Salas:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP

City Planner

City of Cypress

Attachment: Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Angela Elliott Santos, Chairperson  
Manzanita Band of Kumeyaay Nation  
P.O. Box 1302  
Boulevard, CA 91905

Dear Honorable Chairperson Elliott Santos:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Anthony Morales, Chairperson  
Gabrieleno/Tongva San Gabriel Band of Mission Indians  
P.O. Box 693  
San Gabriel, CA 91778

Dear Honorable Chairperson Morales:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Bo Mazzetti, Chairperson  
Rincon Band of Luiseño Indians  
One Government Center Lane  
Valley Center, CA 92082

Dear Honorable Chairperson Mazzetti:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Marjellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Charles Alvarez  
Gabrielino-Tongva Tribe  
23454 Vanowen Street  
West Hills, CA 91307

Dear Mr. Alvarez:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Cheryl Madrigal, Tribal Historic Preservation Officer  
Rincon Band of Luisefño Indians  
One Government Center Lane  
Valley Center, CA 92082

Dear Ms. Madrigal:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Cody Martinez, Chairperson  
Sycuan Band of the Kumeyaay Nation  
1 Kwaaypaay Court  
El Cajon, CA 92019

Dear Honorable Chairperson Martinez:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment: Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Erica Pinto, Chairperson  
Jamul Indian Village  
P.O. Box 612  
Jamul, CA 91935

Dear Honorable Chairperson Pinto:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Fred Nelson, Chairperson  
La Jolla Band of Luiseño Indians  
22000 Highway 76  
Pauma Valley, CA 92061

Dear Honorable Chairperson Nelson:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Gwendolyn Parada, Chairperson  
La Posta Band of Diegueño Mission Indians  
8 Crestwood Road  
Boulevard, CA 91905

Dear Honorable Chairperson Parada:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Javaughn Miller, Tribal Administrator  
La Posta Band of Diegueño Mission Indians  
8 Crestwood Road  
Boulevard, CA 91905

Dear Tribal Administrator Miller:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Jeff Grubbe, Chairperson  
Agua Caliente Band of Cahuilla Indians  
5401 Dinah Shore Drive  
Palm Springs, CA 92264

Dear Honorable Chairperson Grubbe:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

John Christman, Chairperson  
Viejas Band of Kumeyaay Indians  
1 Viejas Grade Road  
Alpine, CA 91901

Dear Honorable Chairperson Christman:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Lisa Cumper, Tribal Historic Preservation Officer  
Jamul Indian Village  
P.O. Box 612  
Jamul, CA 91935

Dear Ms. Cumper

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Mark Macarro, Chairperson  
Pechanga Band of Luiseño Indians  
P.O. Box 1477  
Temecula, CA 92593

Dear Honorable Chairperson Macarro:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Matias Belardes, Chairperson

Juaneño Band of Mission Indians Acjachemen Nation – Belardes

32161 Avenida Los Amigos

San Juan Capistrano, CA 92675

Dear Honorable Chairperson Belardes:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP

City Planner

City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Michael Garcia, Vice Chairperson  
Ewiiapaayp Tribe  
4054 Willows Road  
Alpine, CA 91901

Dear Honorable Vice Chairperson Garcia:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Michael Linton, Chairperson  
Mesa Grande Band of Diegueño Mission Indians  
P.O. Box 270  
Santa Ysabel, CA 92070

Dear Honorable Chairperson Linton:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Ralph Goff, Chairperson  
Campo Band of Diegueno Mission Indians  
36190 Church Road, Suite 1  
Campo, CA 91906

Dear Honorable Chairperson Goff:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Robert Dorame, Chairperson  
Gabrielino Tongva Indians of California Tribal Council  
P.O. Box 490  
Bellflower, CA 90707

Dear Honorable Chairperson Dorame:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Robert Pinto, Chairperson  
Ewiiapaayp Tribe  
4054 Willows Road  
Alpine, CA 91901

Dear Honorable Chairperson Pinto:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

San Luis Rey Tribal Councilmember  
San Luis Rey Band of Mission Indians  
1889 Sunset Drive  
Vista, CA 92081

Dear Honorable Tribal Councilmember:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Sandonne Goad, Chairperson  
Gabrielino/Tongva Nation  
106 ½ Judge John Aiso Street, #231  
Los Angeles, CA 90012

Dear Honorable Chairperson Goad:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Marlellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Scott Cozart, Chairperson  
Soboba Band of Luiseño Indians  
P.O. Box 487  
San Jacinto, CA 92583

Dear Honorable Chairperson Cozart:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Shasta Gaughen, Tribal Historic Preservation Officer  
Pala Band of Mission Indians  
PMB 50, 35008 Pala Temecula Road  
Pala, CA 92059

Dear Ms. Gaughen:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment: Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Sonia Johnston, Chairperson  
Juaneño Band of Mission Indians  
P.O. Box 25628  
Santa Ana, CA 92799

Dear Honorable Chairperson Johnston:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700

[www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Temet Aguilar, Chairperson  
Pauma Band of Luiseño Indians  
P.O. Box 3696  
Pauma Valley, CA 92061

Dear Honorable Chairperson Aguilar:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment: Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 [www.cypressca.org](http://www.cypressca.org)

December 10, 2019

Teresa Romero, Chairperson

Juaneño Band of Mission Indians Acjachemen Nation – Romero

31411-A La Matanza Street

San Juan Capistrano, CA 92675

Dear Honorable Chairperson Romero:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP

City Planner

City of Cypress

Attachment: Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 13, 2019

Joseph Ontiveros, Cultural Resource Director  
Soboba Band of Luiseño Indians  
P.O. Box 487  
San Jacinto, CA 92581

Dear Mr. Ontiveros:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 13, 2019

Joyce Stanfield Perry, Tribal Manager  
Juaneño Band of Mission Indians Acjachemen Nation  
4955 Paseo Segovia  
Irvine, CA 92603

Dear Ms. Perry:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**



# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 13, 2019

Sam Dunlap  
Gabrielino Tongva Tribe  
Via email: [TongvaTCR@gmail.com](mailto:TongvaTCR@gmail.com)

Dear Mr. Dunlap:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, December 13, 2019 5:00 PM  
**To:** tongvatcr@gmail.com  
**Subject:** Assembly Bill 52 letter - on behalf of City of Cypress  
**Attachments:** Sam Dunlap.pdf

Good afternoon, Sam. Please see the attached Assembly Bill 52 project notification letter, sent on behalf of the City of Cypress. As noted in the letter, please contact the City Planner on the project with any questions or concerns. Thank you! Have a great weekend.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)





# CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700      [www.cypressca.org](http://www.cypressca.org)

December 13, 2019

Sam Dunlap  
Gabrielino Tongva Tribe  
Via email: [TongvaTCR@gmail.com](mailto:TongvaTCR@gmail.com)

Dear Mr. Dunlap:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC Section 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

Shea Properties is proposing the Cypress City Center Project (proposed project) on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle in Cypress, California, which is currently an undeveloped paved parking lot. The proposed project involves the construction and operation of a mixed use development on the project site. The proposed project includes a 43,200 square-foot (sf) theater with approximately 840 seats, a five-story hotel with up to 120 rooms, approximately 20,800 sf of retail and restaurant uses, and a four-story residential component with up to 251 apartment units and a variety of amenities, including a fitness center, clubhouse, leasing/lounge area, main recreation courtyard, and a dog park. Proposed offsite improvements include curb, sidewalk, and landscaped parkway improvements along Katella Avenue, Winners Circle, and Siboney Street. Off-site storm drain improvements along the north edge of the project site within an existing storm drain easement are also included as part of assumed capital improvements for Assessment District 1. Figure 1 (attached) shows the location of the project site within Cypress and the larger region.

A search of the Sacred Lands File conducted by the Native American Heritage Commission was negative for the presence of tribal cultural resources in the project site.

If you have any questions or concerns about the project, please contact me via email at [CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org) or by phone at (714) 229-6727.

Sincerely,

John P. Ramirez, AICP  
City Planner  
City of Cypress

Attachment:    Figure 1 – Project Location

**Rob Johnson, Mayor**

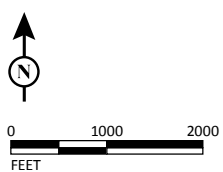
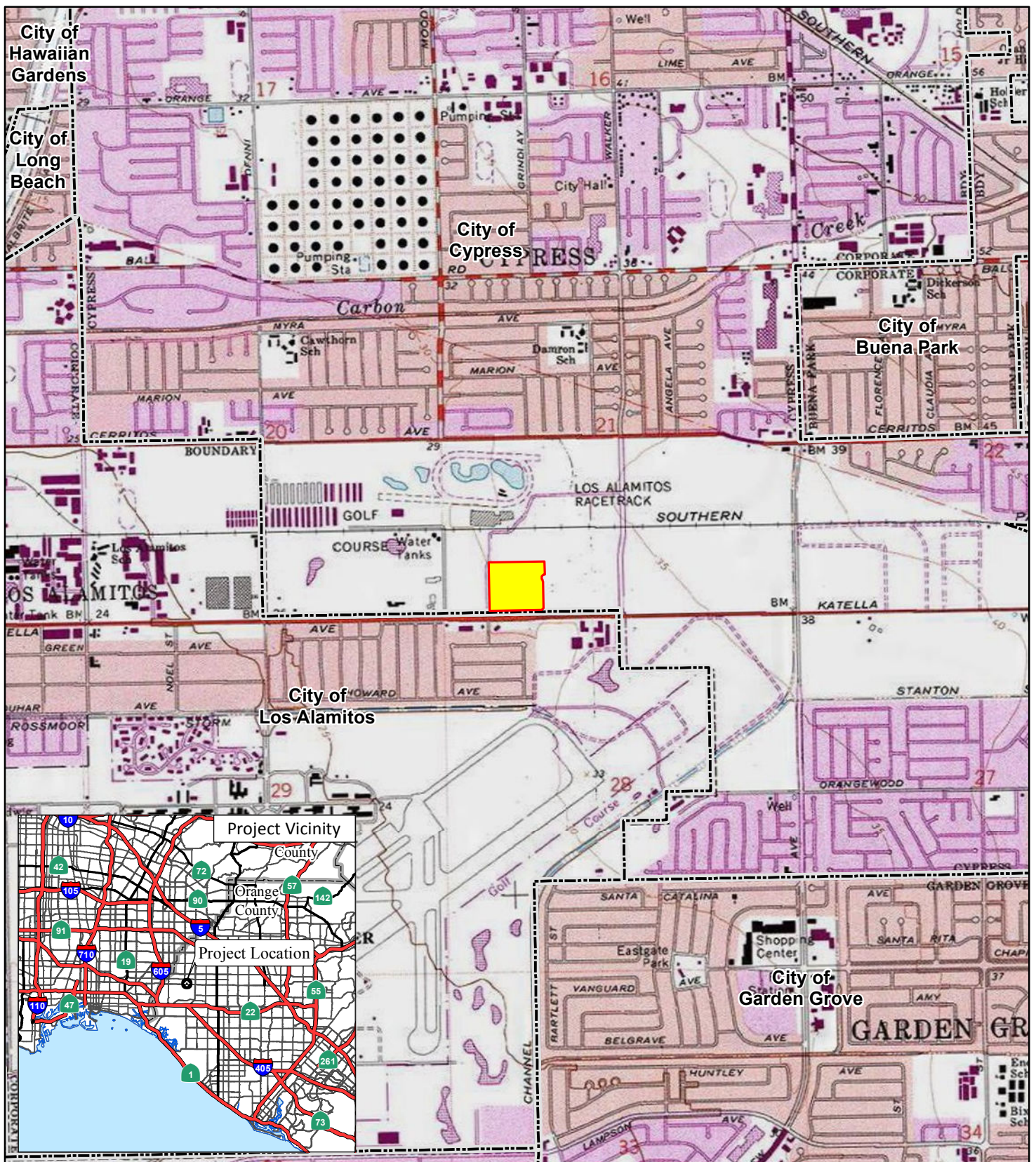
**Mariellen Yarc, Mayor Pro Tem**

**Paulo M. Morales, Council Member**

**Stacy Berry, Council Member**

**Jon E. Peat, Council Member**





SOURCE: USGS 7.5' Quad., Los Alamitos, CA (1981)

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

Cypress City Center  
Regional and Project Location





## GABRIELENO BAND OF MISSION INDIANS - KIZH NATION

Historically known as The San Gabriel Band of Mission Indians  
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Project Name: The Cypress City Center Project located at the northwest corner of Katella Avenue and Winners Circle in Cypress, California

Dear John P. Ramirez,

Thank you for your letter dated December 10, 2019 regarding AB52 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note: AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman  
Gabrieleno Band of Mission Indians – Kizh Nation  
1(844)390-0787

Andrew Salas, Chairman  
Albert Perez, treasurer I

Nadine Salas, Vice-Chairman  
Martha Gonzalez Lemos, treasurer II

Dr. Christina Swindall Martinez, secretary  
Richard Gradias, Chairman of the council of Elders

PO Box 393 Covina, CA 91723

[www.gabrielenoindians@yahoo.com](http://www.gabrielenoindians@yahoo.com)

[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Tuesday, January 28, 2020 1:17 PM  
**To:** Ryan Bensley; Kerrie Collison  
**Subject:** FW: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center  
**Attachments:** Kizh Nation Mitigation Measures 01\_2020.pdf

### John P. Ramirez, AICP

*City Planner*

Community Development Department

City of Cypress

**From:** Administration Gabrieleno <admin@gabrielenoindians.org>  
**Sent:** Friday, January 17, 2020 1:29 PM  
**To:** City Planner <CityPlanner@cypressca.org>  
**Cc:** Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

---

**From:** City Planner

**Sent:** Friday, January 17, 2020 12:28 PM

**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>

**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress



## Gabrieleno Band of Mission Indians – Kizh Nation

### *Protection of Tribal Cultural Resources (TCRs)*

#### **Most Important Things for Agencies to Know About AB52:**

- An EIR, MND, or ND can not be certified until AB-52 tribal consultation has concluded.
- Agreed mitigation measures with the tribe, **MUST** be recommended for inclusion in the environmental document.
- Signature confirming acceptance of these mitigation measures recommended by our Tribal Government is required within 14 days of receipt to conclude AB52 consultation.

#### **Tribal Cultural Resources Mitigation Measures within Kizh Nation Tribal Territory:**

Note: To avoid compliance issues with the following laws, all Native American Monitoring shall be conducted by a documented lineal descendant from the ancestral Tribe of the project area (NAGPRA Law 10.14)

- The Native American Graves Protection and Repatriation Act (NAGPRA), Public Law-101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048.
- CEQA Guidelines Section 15064.5, PRC 5097.98 (d)(1).
- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

*If you are receiving these measures, The Gabrieleno Band of Mission Indians Kizh -Nation are the direct lineal descendants of your project area. The Kizh Nation ONLY responds and consults on projects within their ANCESTRAL tribal territory. Therefore, to remain in compliance with above referenced laws and to enable our Tribe with the ability to protect and preserve our last remaining and irreplaceable Tribal Cultural Resources, it is recommended that the project applicant retain a qualified professional tribal monitor/consultant from the Gabrieleno Band of Mission Indians Kizh -Nation. The Kizh Nation possesses Tribal archives including documented historical information as well as multiple members who possess unique knowledge derived from oral tradition passed down through generations of the Tribe in order to provide the expertise needed to identify whether a project is located within a culturally sensitive area given its proximity to village areas, commerce areas, recreation areas, ceremonial areas, and burial locations.*

#### **Native American Heritage Commission (NAHC) Guidelines for Native American Monitors/Consultants**

**(approved 9/13/05):** By acting as a liaison between Native American, archaeologist, developers, contactors and public agency, a Native American monitor/consultant can ensure that cultural features are treated appropriately from the Native American point of view. This can help others involved in a project to coordinate mitigation measures. These guidelines are intended to provide prospective monitors/consultants, and people who hire monitors/consultants, with an understanding of the scope and extent of knowledge that should be expected.

**Mitigation Guidelines for Tribal Cultural Resources (TCRs):** CEQA now defines TCRs as an independent element separate from archaeological resources. Environmental documents shall address a separate Tribal Cultural Resources section that includes a thorough analysis of the impacts to only TCRs and includes separate and independent mitigation measures created with tribal input under AB-52 consultations. Therefore, all agreements, mitigation, and conditions of approval regarding TCRs shall be handled solely with the Tribal Government and conversely all agreements, mitigation, and conditions of approval regarding Archaeological Resources shall be handled by an Archaeological resource company.



## MITIGATION MEASURES

**Retain a Native American Monitor/Consultant:** The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

**Unanticipated Discovery of Tribal Cultural and Archaeological Resources:** Upon discovery of any tribal cultural or archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All tribal cultural and archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request preservation in place or recovery for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place (CEQA Guidelines Section 15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources.

**Public Resources Code Sections 21083.2(b)** for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. All Tribal Cultural Resources shall be returned to the Tribe. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to the Tribe or a local school or historical society in the area for educational purposes.

### **Unanticipated Discovery of Human Remains and Associated Funerary Objects:**

Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.



### **Resource Assessment & Continuation of Work Protocol:**

Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

### **Kizh-Gabrieleno Procedures for burials and funerary remains:**

If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term “human remains” encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

### **Treatment Measures:**

Prior to the continuation of ground disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.



**Professional Standards:** Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

Acceptance of Tribal Government Recommended Mitigation Measures:

By \_\_\_\_\_  
Lead Agency Representative Signature

Date: \_\_\_\_\_

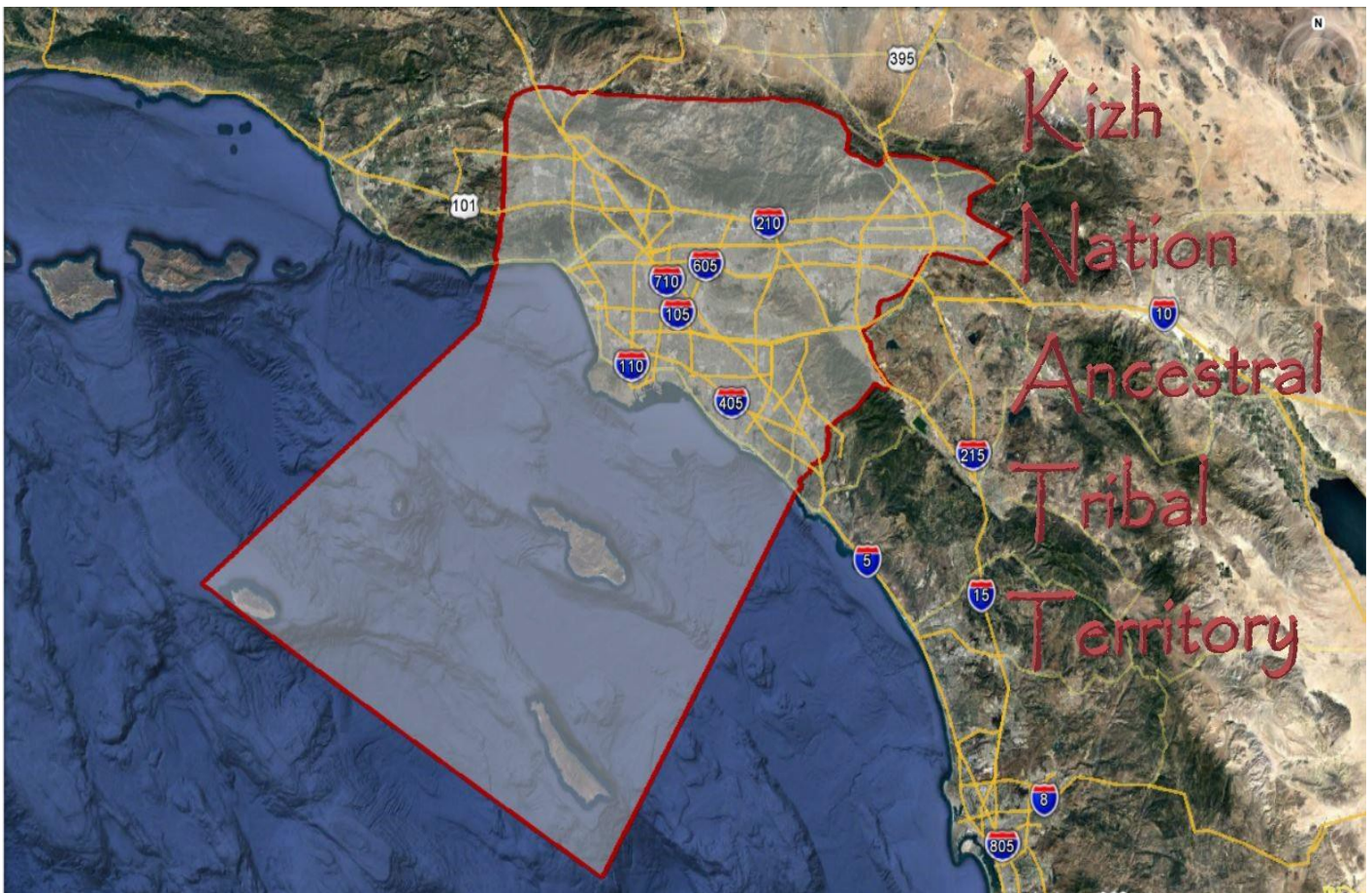
Revised: January 2020





## Attachment A

Kizh Nation Ancestral Tribal Territory extended along the coast from Malibu Creek in Los Angeles County down to Aliso Creek in Orange County and encompassed the Channel Islands of Catalina (Pimugna), San Nicolas (Haraasnga), and San Clemente (Kiinkenga). Our inland border was the San Gabriel Mountains (Hidakupa) and eastwardly our territory extended to parts of San Bernardino (Waatsngna), Orange, and Riverside counties.



## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Wednesday, January 29, 2020 1:39 PM  
**To:** Ryan Bensley; Project Planner; 'Jeff Zwack'; Kerrie Collison  
**Cc:** 'Allen, Margit'; Marlene Watanabe  
**Subject:** FW: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center  
**Attachments:** Kizh Nation Mitigation Measures 01\_2020.pdf; Fig3.7.pdf

---

**From:** City Planner  
**Sent:** Wednesday, January 29, 2020 1:38 PM  
**To:** 'Administration Gabrieleno' <admin@gabrielenoindians.org>  
**Cc:** Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

Thank you for providing us the proposed mitigation measures. I really appreciate it. I wanted to follow up with a little more detailed information on the geotechnical information on the site and the anticipated excavation associated with the project, and provide some more specific wording for the first mitigation measure given the nature of the site and anticipated excavation.

Proposed excavation is approximately 1 to 2 feet deep throughout the entire project site. Additional excavation for geopiers will be conducted within building pads for three of the structures (theater, hotel, and apartment complex). The geopier excavation will extend approximately 15 feet deep.

The majority of the project site has existing fill to a depth of 2 to 5 feet, with the southeastern corner having existing fill to a depth of 7 to 9 feet, and very few spots in the project site have existing fill to a depth of less than 1 foot. Excavation for geopiers and the building pad for Shop Building 3 (as identified on Figure 3.7 attached) have potential to encounter tribal cultural resources due to shallow fill depths in those areas. Additionally, excavation activities for utilities throughout the project (dry utilities, water, sewer, storm drain, and underground detention basins) have potential to encounter tribal cultural resources due to their depth, which is typically more than 5 feet deep. As such, Native American monitoring should be conducted for Shop 3 building pad, geopier, and utility excavation activities due to their potential to encounter tribal cultural resources.

Below is the recommended mitigation for Tribal Cultural Resources.

**Mitigation Measure TCR-1**

**Tribal Cultural Resources.** Prior to the issuance of a grading permit, the Applicant/Developer shall retain a Gabrieleno Native American Tribal representative to monitor ground-disturbing construction activities occurring for pad grading of Shop 3 (the northernmost retail building

proposed directly to the west of Winners Circle) and occurring for all geopier installation throughout the site. The retained Gabrieleno Native American Tribal representative shall be present at the cultural resources awareness training to construction personnel, and shall provide additional Tribal Cultural Resources awareness information at the same meeting. Ground disturbing activities associated with pavement removal and initial site wide grading (at a maximum anticipated depth of 1 to 2 feet deep) shall not require Tribal monitoring. However, if Tribal Cultural Resources are encountered during the unmonitored excavation activities previously specified, contractors shall stop work in the immediate area of the find and contact the retained Gabrieleno Native American Tribal representative to assess the find. Tribal monitoring shall also be required during excavation trenching for dry utilities, water, sewer, storm drain, and underground detention basin installation. Tribal monitoring shall not be conducted after initial excavation of native (previously undisturbed) soil has occurred (i.e., no Tribal monitoring shall be required for landscaping activities occurring after completion of project grading and trenching, as this soil will have been previously monitored). On-site Tribal monitoring shall be considered complete after project grading and trenching are completed and no disturbance to native (previously undisturbed) soils are anticipated.

If Tribal Cultural Resources are discovered during construction activities, ground disturbing activities in the immediate vicinity of the find shall be halted until the find is assessed by the Tribal monitor. The Applicant/Developer shall determine whether to contact the on-call archaeologist for his/her assistance in the assessment of the find. Ground disturbing construction activities shall be allowed to continue in other portions of the project while the find is being assessed. If the find is determined to be a Tribal Cultural Resource, the Gabrieleno Native American Tribe whose representative is responsible for Tribal monitoring shall coordinate with the Applicant/Developer to determine appropriate treatment of the resource.

Please note that if human remains are encountered, Regulatory Compliance Measure CUL-1 shall be followed. Adherence to Regulatory Compliance Measure CUL-1 involves following State Health and Safety Code Section 7050.5 and State Public Resource Code Section 5097.98, including coordination with the County Coroner and the Native American Heritage Commission, as well as a Most Likely Descendant (if the human remains are determined to be Native American). We assume that the Mitigation Measure listed above is agreeable to (add name of Tribe) and unless we hear otherwise by end of business on Friday January 31, 2020, we will conclude the consultation phase.

Thank you again for your time and for your willingness to share with me details about your community's history.

I very much appreciate it,

John

**John P. Ramirez, AICP**  
*City Planner*  
Community Development Department  
City of Cypress

**From:** Administration Gabrieleno <[admin@gabrielenoindians.org](mailto:admin@gabrielenoindians.org)>

**Sent:** Friday, January 17, 2020 1:29 PM

**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>

**Cc:** Matthew Teutimez <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

---

**From:** City Planner  
**Sent:** Friday, January 17, 2020 12:28 PM  
**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>  
**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>  
**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Thursday, January 30, 2020 7:30 PM  
**To:** Ryan Bensley; Kerrie Collison; Project Planner; jzwack@annealtagroup.com  
**Subject:** Fwd: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

**From:** Andy Salas <chairman@gabrielenoindians.org>  
**Date:** January 30, 2020 at 2:32:00 PM PST  
**To:** City Planner <CityPlanner@cypressca.org>  
**Cc:** Administration Gabrieleno Indians <admin@gabrielenoindians.org>, Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Re: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Mr. Ramirez,

We thank you for your efforts in creating a very detailed mitigation. We are in agreement with the specified ground disturbance activities and the locations outlined for onsite monitoring. Since we are both in concurrence with this mitigation please utilize it in your environmental document for this project. Please provide us with a copy of this environmental document with the incorporated mitigation. Following the inclusion of the mitigation in your environmental document, the AB52 consultation will conclude.

We thank you for your time and effort in this matter.

On Wed, Jan 29, 2020 at 1:37 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

Thank you for providing us the proposed mitigation measures. I really appreciate it. I wanted to follow up with a little more detailed information on the geotechnical information on the site and the anticipated excavation associated with the project, and provide some more specific wording for the first mitigation measure given the nature of the site and anticipated excavation.

Proposed excavation is approximately 1 to 2 feet deep throughout the entire project site. Additional excavation for geopiers will be conducted within building pads for three of the

structures (theater, hotel, and apartment complex). The geopier excavation will extend approximately 15 feet deep.

The majority of the project site has existing fill to a depth of 2 to 5 feet, with the southeastern corner having existing fill to a depth of 7 to 9 feet, and very few spots in the project site have existing fill to a depth of less than 1 foot. Excavation for geopiers and the building pad for Shop Building 3 (as identified on Figure 3.7 attached) have potential to encounter tribal cultural resources due to shallow fill depths in those areas. Additionally, excavation activities for utilities throughout the project (dry utilities, water, sewer, storm drain, and underground detention basins) have potential to encounter tribal cultural resources due to their depth, which is typically more than 5 feet deep. As such, Native American monitoring should be conducted for Shop 3 building pad, geopier, and utility excavation activities due to their potential to encounter tribal cultural resources.

Below is the recommended mitigation for Tribal Cultural Resources.

**Mitigation Measure TCR-**

**1 Tribal Cultural Resources.**

Prior to the issuance of a grading permit, the Applicant/Developer shall retain a Gabrieleno Native American Tribal representative to monitor ground-disturbing construction activities occurring for pad grading of Shop 3 (the northernmost retail building proposed directly to the west of Winners Circle) and occurring for all geopier installation throughout the site. The retained Gabrieleno Native American Tribal representative shall be present at the cultural resources awareness training to construction personnel, and shall provide additional Tribal Cultural Resources awareness information at the same meeting. Ground disturbing activities associated with pavement removal and initial site wide grading (at a maximum anticipated depth of 1 to 2 feet deep) shall not require Tribal monitoring. However, if Tribal Cultural Resources are encountered during the unmonitored excavation activities previously specified, contractors shall stop work in the immediate area of the find and contact the retained Gabrieleno Native American Tribal representative to assess the find. Tribal monitoring shall also be required during excavation trenching for dry utilities, water, sewer, storm drain, and underground detention basin installation. Tribal monitoring shall not be conducted after initial excavation of native (previously undisturbed) soil has occurred (i.e., no Tribal monitoring shall be required for landscaping activities occurring after completion of project grading and trenching, as this soil will have been previously monitored). On-site Tribal monitoring shall be considered complete after project grading and trenching are completed and no disturbance to native (previously undisturbed) soils are anticipated.



If Tribal Cultural Resources are discovered during construction activities, ground disturbing activities in the immediate vicinity of the find shall be halted until the find is assessed by the Tribal monitor. The Applicant/Developer shall determine whether to contact the on-call archaeologist for his/her assistance in the assessment of the find. Ground disturbing construction activities shall be allowed to continue in other portions of the project while the find is being assessed. If the find is determined to be a Tribal Cultural Resource, the Gabrieleno Native American Tribe whose representative is responsible for Tribal monitoring shall coordinate with the Applicant/Developer to determine appropriate treatment of the resource.

Please note that if human remains are encountered, Regulatory Compliance Measure CUL-1 shall be followed. Adherence to Regulatory Compliance Measure CUL-1 involves following State Health and Safety Code Section 7050.5 and State Public Resource Code Section 5097.98, including coordination with the County Coroner and the Native American Heritage Commission, as well as a Most Likely Descendant (if the human remains are determined to be Native American). We assume that the Mitigation Measure listed above is agreeable to (add name of Tribe) and unless we hear otherwise by end of business on Friday January 31, 2020, we will conclude the consultation phase.

Thank you again for your time and for your willingness to share with me details about your community's history.

I very much appreciate it,

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

**From:** Administration Gabrieleno <[admin@gabrielenoindians.org](mailto:admin@gabrielenoindians.org)>

**Sent:** Friday, January 17, 2020 1:29 PM

**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>

**Cc:** Matthew Teutimez <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center



Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723

Office: 844-390-0787

website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

---

**From:** City Planner

**Sent:** Friday, January 17, 2020 12:28 PM

**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>

**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress



## APPENDIX K

### SB 18 TRIBAL CONSULTATION RECORD



**This page intentionally left blank**

**SENATE BILL 18 NATIVE AMERICAN CONSULTATION RECORD**  
**Cypress City Center Project, Cypress, Orange County, California**

Date the Sacred Lands File (SLF) Search and Consultation list request was submitted to the Native American Heritage Commission (NAHC): July 11, 2019

Date the NAHC responded: August 1, 2019

Results of the NAHC SLF Search: The Sacred Lands File search was completed with **negative** results for the presence of Native American cultural resources in the project site. The NAHC recommended that the 21 individuals listed in the table below be contacted for information regarding cultural resources that could be affected by the project.

<b>Groups/Individuals Contacted</b>	<b>Date of Project Notification Letter</b>	<b>Date of Tribal Response to Letter</b>	<b>Date and Results of Follow-up Telephone Calls and/or Emails</b>
Agua Caliente Band of Cahuilla Indians Patricia Garcia-Plotkin, Director <i>Cahuilla</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:42 PM</u> : A follow-up email was sent to Ms. Garcia-Plotkin.  <u>09/24/2019, 2:37 PM</u> : Larry Fossum (on behalf of Patricia Garcia-Plotkin) responded that the project is not within the Tribe's Traditional Use Area and they defer to other tribes in the area.
Agua Caliente Band of Cahuilla Indians Jeff Grubbe, Chairperson <i>Cahuilla</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:42 PM</u> : A follow-up email was sent to Chairperson Grubbe via Ms. Garcia-Plotkin.  No further follow-up necessary (see entry for Patricia Garcia-Plotkin, above).
Gabrieleno Band of Mission Indians – Kizh Nation Andrew Salas, Chairperson <i>Gabrieleno</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:45 PM</u> : A follow-up email was sent to Chairperson Salas. At <u>4:07 PM</u> , a response was received. Ms. Brandy Salas, Administrative Assistant, sent a letter via email requesting consultation with the lead agency to discuss the project and surrounding location.  <u>09/23/2019, 9:05 AM</u> : A City Planner with the City of Cypress emailed the tribe, requesting to schedule a consultation call by 10/04/2019 if possible.  <u>09/24/2019, 2:34 PM</u> : Ms. Salas responded that the next available consultation would be on 10/17/2019 at 1 PM.  Further communication with Chairperson Salas pursuant to Senate Bill 18 was conducted in

**SENATE BILL 18 NATIVE AMERICAN CONSULTATION RECORD**  
**Cypress City Center Project, Cypress, Orange County, California**

<b>Groups/Individuals Contacted</b>	<b>Date of Project Notification Letter</b>	<b>Date of Tribal Response to Letter</b>	<b>Date and Results of Follow-up Telephone Calls and/or Emails</b>
			<p>conjunction with Assembly Bill 52 efforts. Proposed Tribal Cultural Resources mitigation measures for the project were sent to Chairperson Salas by the City on January 29, 2020.</p> <p><u>01/30/2020, 2:32 PM</u>: The Tribe accepted the proposed mitigation measures and indicated that consultation has concluded.</p>
<p>Gabrielino/Tongva San Gabriel Band of Mission Indians  Anthony Morales, Chairperson  <i>Gabrielino</i></p>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:47 PM</u>: A follow-up email was sent to Chairperson Morales.</p> <p><u>09/27/2019, 2:53 PM</u>: A second follow-up email was sent to Chairperson Morales.</p>
<p>Gabrielino/Tongva Nation  Sandonne Goad, Chairperson  <i>Gabrielino</i></p>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:49 PM</u>: A follow-up email was sent to Chairperson Goad.</p> <p><u>09/27/2019, 2:55 PM</u>: A second follow-up email was sent to Chairperson Goad.</p>
<p>Gabrielino Tongva Indians of California Tribal Council  Robert Dorame, Chairperson  <i>Gabrielino</i></p>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:50 PM</u>: A follow-up email was sent to Chairperson Dorame.</p> <p><u>09/27/2019, 2:56 PM</u>: A second follow-up email was sent to Chairperson Dorame.</p>
<p>Gabrielino-Tongva Tribe  Charles Alvarez  <i>Gabrielino</i></p>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:51</u>: A follow-up email was sent to Mr. Alvarez.</p> <p><u>09/20/2019</u>: The letter sent to Mr. Alvarez via Certified Mail was returned as undeliverable. It was noted by the Post Office that the letter was unclaimed and unable to be forwarded.</p> <p><u>09/27/2019, 2:56 PM</u>: A second follow-up email was sent to Mr. Alvarez.</p>
<p>Juaneño Band of Mission Indians  Sonia Johnston, Tribal Chairperson</p>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:52 PM</u>: A follow-up email was sent to Chairperson Johnston.</p>

**SENATE BILL 18 NATIVE AMERICAN CONSULTATION RECORD**  
**Cypress City Center Project, Cypress, Orange County, California**

<b>Groups/Individuals Contacted</b>	<b>Date of Project Notification Letter</b>	<b>Date of Tribal Response to Letter</b>	<b>Date and Results of Follow-up Telephone Calls and/or Emails</b>
<i>Juaneño</i>			<p><u>09/13/2019</u>: The letter sent to Chairperson Johnston via Certified Mail was returned as undeliverable. It was noted by the Post Office that the P.O. Box has been closed with no forwarding address.</p> <p><u>09/27/2019, 2:57 PM</u>: A second follow-up email was sent to Chairperson Johnston.</p>
Juaneño Band of Mission Indians Acjachemen Nation – Belardes Joyce Perry, Tribal Manager <i>Juaneño</i>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:53</u>: A follow-up email was sent to Ms. Perry.</p> <p><u>09/27/2019, 2:58 PM</u>: A second follow-up email was sent to Ms. Perry.</p>
Juaneño Band of Mission Indians Acjachemen Nation Matias Belardes, Chairperson <i>Juaneño</i>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:53 PM</u>: A follow-up email was sent to Chairperson Belardes via Ms. Perry.</p> <p><u>09/24/2019</u>: The letter sent to Chairperson Belardes via Certified Mail was returned as undeliverable. It was noted by the Post Office that the letter was unclaimed and unable to be forwarded.</p> <p><u>09/27/2019, 2:58 PM</u>: A second follow-up email was sent to Chairperson Belardes via Ms. Perry.</p>
Juaneño Band of Mission Indians Acjachemen Nation – Romero Teresa Romero, Chairperson <i>Juaneño</i>	08/26/2019	No response was received.	<p><u>09/09/2019, 1:54 PM</u>: A follow-up email was sent to Chairperson Romero.</p> <p><u>09/24/2019</u>: The letter sent to Chairperson Romero via Certified Mail was returned as undeliverable. It was noted by the Post Office that the letter was unclaimed and unable to be forwarded.</p> <p><u>09/27/2019, 2:59 PM</u>: A second follow-up email was sent to Chairperson Romero.</p>
La Jolla Band of Luiseño Indians	08/26/2019	No response was received.	<u>09/27/2019, 2:48 PM</u> : A follow-up phone call was

**SENATE BILL 18 NATIVE AMERICAN CONSULTATION RECORD**  
**Cypress City Center Project, Cypress, Orange County, California**

<b>Groups/Individuals Contacted</b>	<b>Date of Project Notification Letter</b>	<b>Date of Tribal Response to Letter</b>	<b>Date and Results of Follow-up Telephone Calls and/or Emails</b>
Fred Nelson, Chairperson <i>Luiŕeño</i>			made to the La Jolla Band tribal office. The mailbox was full; no voice message could be left.
Pala Band of Mission Indians Shasta Gaughen, Tribal Historic Preservation Officer <i>Cupeño Luiŕeño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:55 PM</u> : A follow-up email was sent to Ms. Gaughen.  <u>09/27/2019, 2:59 PM</u> : A second follow-up email was sent to Ms. Gaughen.  <u>09/30/2019, 8:48 AM</u> : Alexis Wallick, Assistant Tribal Historic Preservation Officer, responded on behalf of Ms. Gaughen via email with an attached letter. The letter stated that they defer to the wishes of Tribes in closer proximity to the project area.
Pauma Band of Luiŕeño Indians Temet Aguilar, Chairperson <i>Luiŕeño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:56 PM</u> : A follow-up email was sent to Chairperson Aguilar.  <u>09/27/2019, 3:00 PM</u> : A second follow-up email was sent to Chairperson Aguilar.
Pechanga Band of Luiŕeño Indians Paul Macarro, Cultural Resources Coordinator <i>Luiŕeño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1: 56 PM</u> : A follow-up email was sent to Mr. Macarro. At <u>3:14 PM</u> , Mr. Macarro responded with a phone call to say that the project is outside of the Tribe's area, and that they will send a formal response via letter. Mr. Macarro also thanked LSA for reaching out regarding the project and respecting the consultation process.
Pechanga Band of Luiŕeño Indians Mark Macarro, Chairperson <i>Luiŕeño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:57 PM</u> : A follow-up email was sent to Chairperson Macarro.  <i>Please see response from Mr. Paul Macarro, above.</i>
Rincon Band of Luiŕeño Indians Jim McPherson, Tribal Historic Preservation Officer <i>Luiŕeño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:58 PM</u> : A follow-up email was sent to Mr. McPherson.  <u>09/27/2019, 3:01 PM</u> : A second follow-up email was sent to Mr. McPherson.



**SENATE BILL 18 NATIVE AMERICAN CONSULTATION RECORD**  
**Cypress City Center Project, Cypress, Orange County, California**

<b>Groups/Individuals Contacted</b>	<b>Date of Project Notification Letter</b>	<b>Date of Tribal Response to Letter</b>	<b>Date and Results of Follow-up Telephone Calls and/or Emails</b>
			<i>See response from Chairperson Mazzetti, below.</i>
Rincon Band of Luiseño Indians Bo Mazzetti, Chairperson <i>Luiseño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:57 PM</u> : A follow-up email was sent to Chairperson Mazzetti.  <u>09/27/2019, 3:00 PM</u> : A second follow-up email was sent to Chairperson Mazzetti. At <u>3:36 PM</u> , Chairperson Mazzetti responded that they do not have any issues on this project and that other tribes in the area will be taking the lead.
San Luis Rey Band of Mission Indians San Luis Rey Tribal Council <i>Luiseño</i>	08/26/2019	No response was received.	<u>09/09/2019, 1:58 PM</u> : A follow-up email was sent to the Tribal Council.  <u>09/10/2019, 10:11 AM</u> : Cami Mojado responded with a phone call and stated that her group defers to local tribes due to her group's presence in San Diego County, not Orange County.
Soboba Band of Luiseño Indians Scott Cozart, Chairperson <i>Cahuilla Luiseño</i>	08/26/2019	No response was received.	<u>09/09/2019, 2:00 PM</u> : A follow-up email was sent to Chairperson Cozart via Mr. Ontiveros.  <u>09/27/2019, 3:01 PM</u> : A second follow-up email was sent to Chairperson Cozart via Mr. Ontiveros.
Soboba Band of Luiseño Indians Joseph Ontiveros, Cultural Resource Department <i>Cahuilla Luiseño</i>	08/26/2019	No response was received.	<u>09/09/2019, 2:00 PM</u> : A follow-up email was sent to Mr. Ontiveros.  <u>09/27/2019, 3:01 PM</u> : A second follow-up email was sent to Mr. Ontiveros.

## Local Government Tribal Consultation List Request

### Native American Heritage Commission

1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691  
916-373-3710  
916-373-5471 – Fax  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)

#### Type of List Requested

- ☐ CEQA Tribal Consultation List (AB 52) – *Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2*
- ☒ General Plan (SB 18) – *Per Government Code § 65352.3.*

#### Local Action Type:

☐ General Plan   ☐ General Plan Element   ☐ General Plan Amendment  
☐ Specific Plan   ☒ Specific Plan Amendment   ☐ Pre-planning Outreach Activity

#### Required Information

Project Title: Cypress Town Center

Local Government/Lead Agency: City of Cypress

Contact Person: Amy Stonich

Street Address: 5725 Orange Avenue

City: Cypress, CA      Zip: 90630

Phone: 714-229-6727      Fax: \_\_\_\_\_

Email: CityPlanner@cypressca.org

#### Specific Area Subject to Proposed Action

County: Orange      City/Community: Cypress

#### Project Description:

The Project Site is within the boundaries of the Cypress Business and Professional Center Specific Plan, and specifically occupies a portion of Planning Area 5, which is designated as “Professional Office.” The Modified Project proposes residential and hotel land uses that are not consistent with allowable uses within the Professional Office designation in the Specific Plan. As such, the Modified Project would require a Specific Plan Amendment.

#### Additional Request

- ☒ Sacred Lands File Search – *Required Information:*

USGS Quadrangle Name(s): Los Alamitos

Township: 4 South      Range: 11 West      Section(s): 28



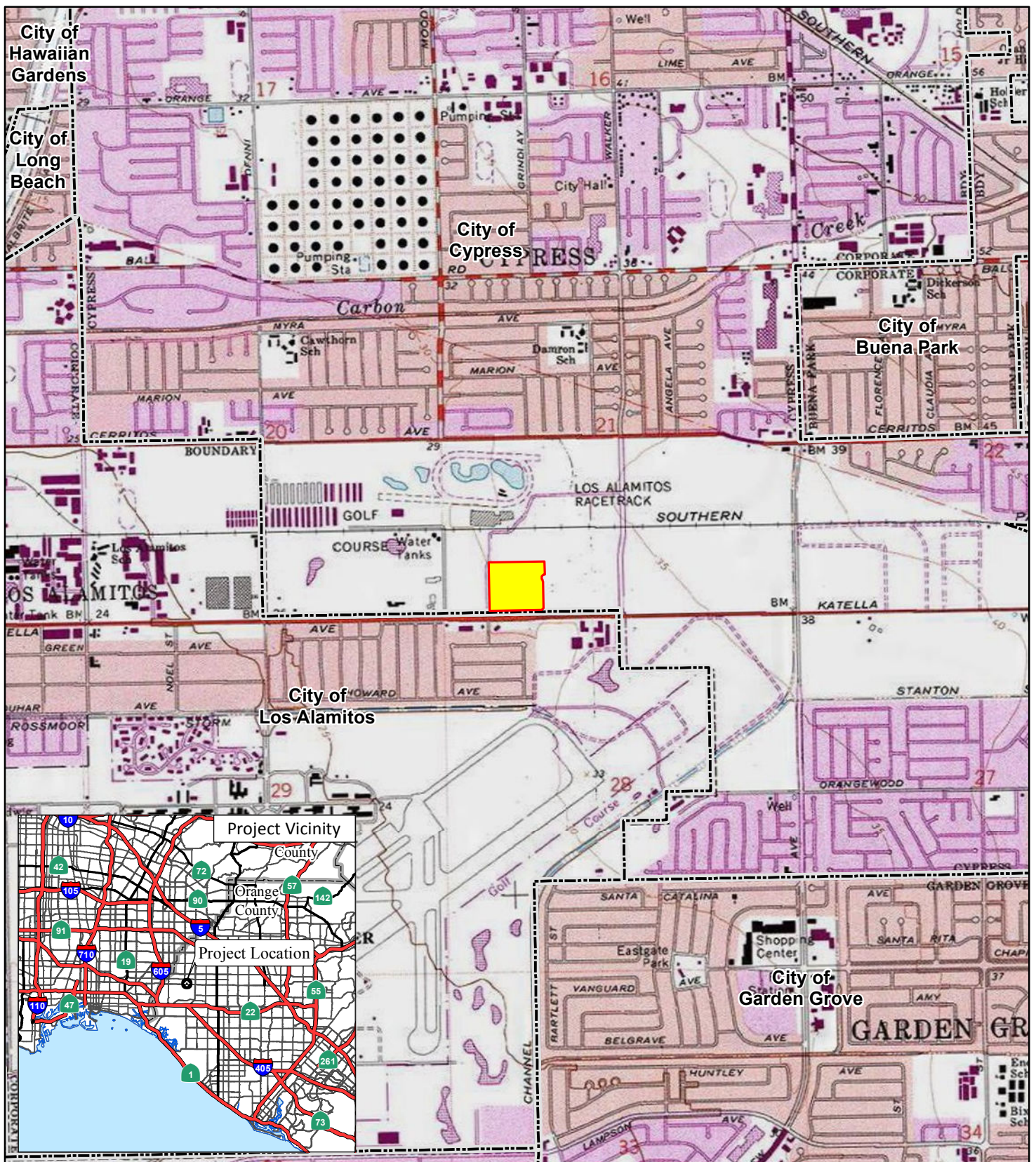


FIGURE 2.1

LSA

LEGEND

- Project Site
- City Boundary



0 1000 2000  
FEET

SOURCE: USGS 7.5' Quad., Los Alamitos, CA (1981)

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

Cypress Town Center  
Regional and Project Location



Amy Stonich  
City of Cypress

RE: Native American Consultation, Pursuant to Senate Bill 18, Government Code §65352.3 and §65352.4,  
Cypress Town Center Project, Orange County

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties.

Government Code §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

The law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

The NAHC also believes that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
  - A listing of any and all known cultural resources that have already been recorded or are adjacent to the APE, such as known archaeological sites;
  - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
  - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
  - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.
2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code §6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the NAHC was negative.
4. Any ethnographic studies conducted for any area including all or part of the APE; and
5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we are able to assure that our consultation list remains current.

If you have any questions or need additional information, please contact me at my email address: [steven.quinn@nahc.ca.gov](mailto:steven.quinn@nahc.ca.gov).

Sincerely,

A handwritten signature in blue ink that reads "Steven Quinn". The signature is written in a cursive, flowing style.

Steven Quinn  
Associate Governmental Program Analyst

Attachment

**Native American Heritage Commission  
Native American Contact List  
Orange County  
8/1/2019**

**Agua Caliente Band of Cahuilla Indians**

Jeff Grubbe, Chairperson  
5401 Dinah Shore Drive Cahuilla  
Palm Springs, CA, 92264  
Phone: (760) 699 - 6800  
Fax: (760) 699-6919

**Gabrielino-Tongva Tribe**

Charles Alvarez,  
23454 Vanowen Street Gabrielino  
West Hills, CA, 91307  
Phone: (310) 403 - 6048  
roadkingcharles@aol.com

**Agua Caliente Band of Cahuilla Indians**

Patricia Garcia-Plotkin, Director  
5401 Dinah Shore Drive Cahuilla  
Palm Springs, CA, 92264  
Phone: (760) 699 - 6907  
Fax: (760) 699-6924  
ACBCI-THPO@aguacaliente.net

**Juaneno Band of Mission Indians**

Sonia Johnston, Chairperson  
P.O. Box 25628 Juaneno  
Santa Ana, CA, 92799  
sonia.johnston@sbcglobal.net

**Juaneno Band of Mission Indians Acjachemen Nation**

Matias Belardes, Chairperson  
32161 Avenida Los Amigos Juaneno  
San Juan Capistrano, CA, 92675  
Phone: (949) 293 - 8522  
kaamalam@gmail.com

**Gabrieleno Band of Mission Indians - Kizh Nation**

Andrew Salas, Chairperson  
P.O. Box 393 Gabrieleno  
Covina, CA, 91723  
Phone: (626) 926 - 4131  
admin@gabrielenoindians.org

**Juaneno Band of Mission Indians Acjachemen Nation - Belardes**

Joyce Perry, Tribal Manager  
4955 Paseo Segovia Juaneno  
Irvine, CA, 92603  
Phone: (949) 293 - 8522  
kaamalam@gmail.com

**Gabrieleno/Tongva San Gabriel Band of Mission Indians**

Anthony Morales, Chairperson  
P.O. Box 693 Gabrieleno  
San Gabriel, CA, 91778  
Phone: (626) 483 - 3564  
Fax: (626) 286-1262  
GTTribalcouncil@aol.com

**Juaneno Band of Mission Indians Acjachemen Nation - Romero**

Teresa Romero, Chairperson  
31411-A La Matanza Street Juaneno  
San Juan Capistrano, CA, 92675  
Phone: (949) 488 - 3484  
Fax: (949) 488-3294  
tromero@juaneno.com

**Gabrielino /Tongva Nation**

Sandonne Goad, Chairperson  
106 1/2 Judge John Aiso St., Gabrielino  
#231  
Los Angeles, CA, 90012  
Phone: (951) 807 - 0479  
sgoad@gabrielino-tongva.com

**La Jolla Band of Luiseno Indians**

Fred Nelson, Chairperson  
22000 Highway 76 Luiseno  
Pauma Valley, CA, 92061  
Phone: (760) 742 - 3771

**Gabrielino Tongva Indians of California Tribal Council**

Robert Dorame, Chairperson  
P.O. Box 490 Gabrielino  
Bellflower, CA, 90707  
Phone: (562) 761 - 6417  
Fax: (562) 761-6417  
gtongva@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Cypress Town Center Project, Orange County.

**Native American Heritage Commission  
Native American Contact List  
Orange County  
8/1/2019**

***Pala Band of Mission Indians***

Shasta Gaughen, Tribal Historic  
Preservation Officer  
PMB 50, 35008 Pala Temecula Rd.      Cupeno  
Luiseno  
Pala, CA, 92059  
Phone: (760) 891 - 3515  
Fax: (760) 742-3189  
sgaughen@palatribe.com

***Pauma Band of Luiseno Indians***

Temet Aguilar, Chairperson  
P.O. Box 369      Luiseno  
Pauma Valley, CA, 92061  
Phone: (760) 742 - 1289  
Fax: (760) 742-3422  
bennaecalac@aol.com

***Pechanga Band of Luiseno Indians***

Paul Macarro, Cultural Resources  
Coordinator  
P.O. Box 1477      Luiseno  
Temecula, CA, 92593  
Phone: (951) 770 - 6306  
Fax: (951) 506-9491  
pmacarro@pechanga-nsn.gov

***Pechanga Band of Luiseno Indians***

Mark Macarro, Chairperson  
P.O. Box 1477      Luiseno  
Temecula, CA, 92593  
Phone: (951) 770 - 6000  
Fax: (951) 695-1778  
epreston@pechanga-nsn.gov

***Rincon Band of Luiseno Indians***

Bo Mazzetti, Chairperson  
One Government Center Lane      Luiseno  
Valley Center, CA, 92082  
Phone: (760) 749 - 1051  
Fax: (760) 749-5144  
bomazzetti@aol.com

***Rincon Band of Luiseno Indians***

Jim McPherson, Tribal Historic  
Preservation Officer  
One Government Center Lane      Luiseno  
Valley Center, CA, 92082  
Phone: (760) 749 - 1051  
Fax: (760) 749-5144  
vwhipple@rincontribe.org

***San Luis Rey Band of Mission Indians***

San Luis Rey, Tribal Council  
1889 Sunset Drive      Luiseno  
Vista, CA, 92081  
Phone: (760) 724 - 8505  
Fax: (760) 724-2172  
cjmojado@slrmissionindians.org

***San Luis Rey Band of Mission Indians***

1889 Sunset Drive      Luiseno  
Vista, CA, 92081  
Phone: (760) 724 - 8505  
Fax: (760) 724-2172  
cjmojado@slrmissionindians.org

***Soboba Band of Luiseno Indians***

Joseph Ontiveros, Cultural  
Resource Department  
P.O. BOX 487      Cahuilla  
San Jacinto, CA, 92581      Luiseno  
Phone: (951) 663 - 5279  
Fax: (951) 654-4198  
jontiveros@soboba-nsn.gov

***Soboba Band of Luiseno Indians***

Scott Cozart, Chairperson  
P. O. Box 487      Cahuilla  
San Jacinto, CA, 92583      Luiseno  
Phone: (951) 654 - 2765  
Fax: (951) 654-4198  
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Cypress Town Center Project, Orange County.

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 2:00 PM  
**To:** 'jontiveros@soboba-nsn.gov'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Joseph Ontiveros.pdf; Scott Cozart.pdf

Good afternoon, Mr. Ontiveros. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you and Chairperson Cozart for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of each letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you or the Chairperson have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401  
-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)



## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:58 PM  
**To:** 'cjmojado@slrmissionindians.org'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** San Luis Rey Tribal Council.pdf

Good afternoon. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:58 PM  
**To:** [vwhipple@rincontribe.org](mailto:vwhipple@rincontribe.org)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Jim McPherson.pdf

Good afternoon, Mr. McPherson. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:57 PM  
**To:** bomazzetti@aol.com  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Bo Mazzetti.pdf

Good afternoon, Chairperson Mazzetti. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:57 PM  
**To:** 'epreston@pechanga-nsn.gov'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Mark Macarro.pdf

Good afternoon, Chairperson Macarro. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:56 PM  
**To:** bennaecalac@aol.com  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Temet Aguilar.pdf

Good afternoon, Chairperson Aguilar. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:56 PM  
**To:** pmacarro@pechanga-nsn.gov  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Paul Macarro.pdf

Good afternoon, Mr. Macarro. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:55 PM  
**To:** sgaughen@palatribe.com  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Shasta Gaughen.pdf

Good afternoon, Ms. Gaughen. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:54 PM  
**To:** 'tromero@juaneno.com'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Teresa Romero.pdf

Good afternoon, Chairperson Romero. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)



## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:53 PM  
**To:** kaamalam@gmail.com  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Matias Belardes.pdf; Joyce Perry.pdf

Good afternoon, Joyce. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you and Chairperson Belardes for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of each letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you or the Chairperson have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:52 PM  
**To:** 'Sonia.Johnston@sbcglobal.net'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Sonia Johnston.pdf

Good afternoon, Chairperson Johnston. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:51 PM  
**To:** 'roadkingcharles@aol.com'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Charles Alvarez.pdf

Good afternoon, Mr. Alvarez. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:49 PM  
**To:** Sandonne Goad (sgoad@gabrielino-tongva.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Sandonne Goad.pdf

Good afternoon, Chairperson Goad. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:50 PM  
**To:** Robert Dorame (gtongva@gmail.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Robert Dorame.pdf

Good afternoon, Chairperson Dorame. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:47 PM  
**To:** Anthony Morales (GTtribalcouncil@aol.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Anthony Morales.pdf

Good afternoon, Chairperson Morales. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

LSA | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:45 PM  
**To:** admin@gabrielenoindians.org  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Andrew Salas.pdf

Good afternoon, Chairperson Salas. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401  
-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:42 PM  
**To:** ACBCI-THPO@aguacaliente.net  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Patricia Garcia-Plotkin.pdf; Jeff Grubbe.pdf

Good afternoon, Ms. Garcia-Plotkin. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you and Chairperson Grubbe for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of each letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you or the Chairperson have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401  
-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)



## Kerrie Collison

---

**From:** Administration Gabrieleno <admin@gabrielenoindians.org>  
**Sent:** Monday, September 09, 2019 4:07 PM  
**To:** Kerrie Collison  
**Subject:** Re: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Cypress City Center Project .pdf

Please see attached

Sincerely,

Brandy Salas

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Mon, Sep 9, 2019 at 1:45 PM Kerrie Collison <[Kerrie.Collison@lsa.net](mailto:Kerrie.Collison@lsa.net)> wrote:

Good afternoon, Chairperson Salas. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,

Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

**LSA** | 285 South Street, Suite P

San Luis Obispo, CA 93401

-----

805-782-0745 Tel

805-801-4533 Mobile

[Website](#)



## GABRIELENO BAND OF MISSION INDIANS - KIZH NATION

Historically known as The San Gabriel Band of Mission Indians  
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Project Name: Cypress City Center Project

Dear Kerrie Collision,

Thank you for your letter dated August 26, 2016 regarding SB18 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note :AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman  
Gabrieleno Band of Mission Indians – Kizh Nation  
1(844)390-0787

Andrew Salas, Chairman

Albert Perez, treasurer I

Nadine Salas, Vice-Chairman

Martha Gonzalez Lemos, treasurer II

Dr. Christina Swindall Martinez, secretary

Richard Gradias, Chairman of the council of Elders

PO Box 393 Covina, CA 91723

[www.gabrielenoindians@yahoo.com](http://www.gabrielenoindians@yahoo.com)

[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Wednesday, September 25, 2019 11:22 AM  
**To:** Ryan Bensley; Kerrie Collison  
**Subject:** FW: Proposed Cypress City Center Project

---

**From:** Fossum, Larry (TRBL) [<mailto:lfossum@aguacaliente.net>]  
**Sent:** Tuesday, September 24, 2019 2:37 PM  
**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>  
**Subject:** Proposed Cypress City Center Project

Dear Kerrie:

A records check of the Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to other tribes in the area. This letter shall conclude our consultation efforts.

Cordially,

Larry Fossum  
On behalf of Patricia Garcia-Plotkin  
Director of Historic Preservation  
Agua Caliente Band of Cahuilla Indians

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Wednesday, September 25, 2019 11:21 AM  
**To:** Ryan Bensley; Kerrie Collison  
**Subject:** FW: Consultation Letter Follow-up: Cypress City Center Project

**From:** Administration Gabrieleno [<mailto:admin@gabrielenoindians.org>]  
**Sent:** Tuesday, September 24, 2019 2:34 PM  
**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>  
**Subject:** Re: Consultation Letter Follow-up: Cypress City Center Project

Hello John

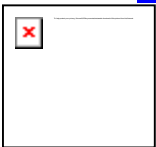
Thank you for your email. The next time we have available for a consultation will be on October 17th at 1pm. Please get back to us to see if this time will work for you.

Thank you

Sincerely,

Brandy Salas

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Mon, Sep 23, 2019 at 9:05 AM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

| Hello,

Thank you for response and follow up to our letter regarding the Cypress City Center Project.

We would like to schedule a consultation call with you in the next two weeks (by 10/4) if possible.

If it is acceptable to you, we would like to have our environmental consultant on the call as well.

Thank you,

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 3:01 PM  
**To:** [jontiveros@soboba-nsn.gov](mailto:jontiveros@soboba-nsn.gov)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Joseph Ontiveros.pdf; Scott Cozart.pdf

Good afternoon, Mr. Ontiveros. I wanted to follow up with you one more time to see if you or Chairperson Cozart have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 2:00 PM  
**To:** 'jontiveros@soboba-nsn.gov'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Mr. Ontiveros. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you and Chairperson Cozart for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of each letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you or the Chairperson have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 3:01 PM  
**To:** [vwhipple@rincontribe.org](mailto:vwhipple@rincontribe.org)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Jim McPherson.pdf

Good afternoon, Mr. McPherson. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:58 PM  
**To:** [vwhipple@rincontribe.org](mailto:vwhipple@rincontribe.org)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Mr. McPherson. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)



## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 3:00 PM  
**To:** bomazzetti@aol.com  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Bo Mazzetti.pdf

Good afternoon, Chairperson Mazzetti. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:57 PM  
**To:** [bomazzetti@aol.com](mailto:bomazzetti@aol.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Mazzetti. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 3:00 PM  
**To:** [bennaecalac@aol.com](mailto:bennaecalac@aol.com)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Temet Aguilar.pdf

Good afternoon, Chairperson Aguilar. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:56 PM  
**To:** [bennaecalac@aol.com](mailto:bennaecalac@aol.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Aguilar. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:59 PM  
**To:** [sgaughen@palatribe.com](mailto:sgaughen@palatribe.com)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Shasta Gaughen.pdf

Good afternoon, Ms. Gaughen. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:55 PM  
**To:** [sgaughen@palatribe.com](mailto:sgaughen@palatribe.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Ms. Gaughen. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:59 PM  
**To:** tromero@juaneno.com  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Teresa Romero.pdf

Good afternoon, Chairperson Romero. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:54 PM  
**To:** 'tromero@juaneno.com'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Romero. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:58 PM  
**To:** kaamalam@gmail.com  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Matias Belardes.pdf; Joyce Perry.pdf

Good afternoon, Joyce. I wanted to follow up with you one more time to see if you or Chairperson Belardes have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:53 PM  
**To:** [kaamalam@gmail.com](mailto:kaamalam@gmail.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Joyce. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you and Chairperson Belardes for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of each letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you or the Chairperson have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:57 PM  
**To:** Sonia.Johnston@sbcglobal.net  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Sonia Johnston.pdf

Good afternoon, Chairperson Johnston. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:52 PM  
**To:** 'Sonia.Johnston@sbcglobal.net'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Johnston. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:57 PM  
**To:** roadkingcharles@aol.com  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Charles Alvarez.pdf

Good afternoon, Mr. Alvarez. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:51 PM  
**To:** 'roadkingcharles@aol.com'  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Mr. Alvarez. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:56 PM  
**To:** Robert Dorame (gtongva@gmail.com)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Robert Dorame.pdf

Good afternoon, Chairperson Dorame. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:50 PM  
**To:** Robert Dorame ([gtongva@gmail.com](mailto:gtongva@gmail.com))  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Dorame. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)



## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:55 PM  
**To:** Sandonne Goad ([sgoad@gabrielino-tongva.com](mailto:sgoad@gabrielino-tongva.com))  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Sandonne Goad.pdf

Good afternoon, Chairperson Goad. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:49 PM  
**To:** Sandonne Goad ([sgoad@gabrielino-tongva.com](mailto:sgoad@gabrielino-tongva.com))  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Goad. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Kerrie Collison  
**Sent:** Friday, September 27, 2019 2:53 PM  
**To:** Anthony Morales (GTTribalcouncil@aol.com)  
**Subject:** RE: Consultation Letter Follow-up: Cypress City Center Project  
**Attachments:** Anthony Morales.pdf

Good afternoon, Chairperson Morales. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:47 PM  
**To:** Anthony Morales ([GTTribalcouncil@aol.com](mailto:GTTribalcouncil@aol.com))  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Morales. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

## Kerrie Collison

---

**From:** Bomazzetti <bomazzetti@aol.com>  
**Sent:** Friday, September 27, 2019 3:36 PM  
**To:** Kerrie Collison  
**Subject:** Re: Consultation Letter Follow-up: Cypress City Center Project

We do not have and issues or a written response on this particular project. Other tribes in the area will be taking the lead!

Sent from my iPhone

On Sep 27, 2019, at 3:00 PM, Kerrie Collison <[Kerrie.Collison@lsa.net](mailto:Kerrie.Collison@lsa.net)> wrote:

Good afternoon, Chairperson Mazzetti. I wanted to follow up with you one more time to see if you have any questions or concerns about the project referenced in my previous email and the potential to impact cultural resources. I have attached a copy of the consultation letter to this email. Please reply if you do have any questions or concerns. Thank you, and have a great rest of your week.

Regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager

---

**From:** Kerrie Collison  
**Sent:** Monday, September 09, 2019 1:57 PM  
**To:** [bomazzetti@aol.com](mailto:bomazzetti@aol.com)  
**Subject:** Consultation Letter Follow-up: Cypress City Center Project

Good afternoon, Chairperson Mazzetti. I wanted to follow up with you on a consultation letter dated August 26, 2019, that was recently sent to you for the proposed Cypress City Center Project in Cypress, Orange County. I have attached a copy of the letter for your reference. Please let me or the Cypress City Planner ([CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)) know if you have any questions or concerns about the project and the potential to impact cultural resources. Thank you in advance for your input, and have a wonderful day.

Kind regards,  
Kerrie Collison

**Kerrie Collison, RPA** | Senior Cultural Resources Manager  
[LSA](#) | 285 South Street, Suite P  
San Luis Obispo, CA 93401

-----  
805-782-0745 Tel  
805-801-4533 Mobile  
[Website](#)

<Bo Mazzetti.pdf>

## Kerrie Collison

---

**From:** Alexis Wallick <awallick@palatribe.com>  
**Sent:** Monday, September 30, 2019 8:48 AM  
**To:** cityplanner@cypressca.org; Kerrie Collison  
**Subject:** Proposed Cypress City Center Project  
**Attachments:** LSA- Proposed Cypress City Center Project.pdf

Attached is the response to the request for comment on this project, sent on behalf of Shasta Gaughen.

### Alexis Wallick

Pala Band of Mission Indians  
Assistant Tribal Historic Preservation Officer  
Pala Environmental Department, THPO  
35008 Pala Temecula Road, Pmb 50; Pala, CA 92059  
(760)891-3537  
[awallick@palatribe.com](mailto:awallick@palatribe.com)  
[ped.palatribe.com](http://ped.palatribe.com)



Please consider the environment before printing this email.



TRIBAL HISTORIC PRESERVATION OFFICE  
PALA BAND OF MISSION INDIANS  
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059  
Phone 760-891-3510 | [www.palatribe.com](http://www.palatribe.com)

September 30, 2019

Kerrie Collison  
LSA Associates, Inc  
285 South Street, Suite P  
San Luis Obispo, CA 93401

Re: Proposed Cypress City Center Project

Dear Ms. Collison:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact Alexis Wallick by telephone at 760-891-3537 or by e-mail at [awallick@palatribe.com](mailto:awallick@palatribe.com).

Sincerely,

Shasta C. Gaughen, PhD  
Tribal Historic Preservation Officer  
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Tuesday, January 28, 2020 1:17 PM  
**To:** Ryan Bensley; Kerrie Collison  
**Subject:** FW: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center  
**Attachments:** Kizh Nation Mitigation Measures 01\_2020.pdf

### John P. Ramirez, AICP

*City Planner*

Community Development Department

City of Cypress

**From:** Administration Gabrieleno <admin@gabrielenoindians.org>  
**Sent:** Friday, January 17, 2020 1:29 PM  
**To:** City Planner <CityPlanner@cypressca.org>  
**Cc:** Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

---

**From:** City Planner

**Sent:** Friday, January 17, 2020 12:28 PM

**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>

**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress





## Gabrieleno Band of Mission Indians – Kizh Nation

### *Protection of Tribal Cultural Resources (TCRs)*

#### **Most Important Things for Agencies to Know About AB52:**

- An EIR, MND, or ND can not be certified until AB-52 tribal consultation has concluded.
- Agreed mitigation measures with the tribe, **MUST** be recommended for inclusion in the environmental document.
- Signature confirming acceptance of these mitigation measures recommended by our Tribal Government is required within 14 days of receipt to conclude AB52 consultation.

#### **Tribal Cultural Resources Mitigation Measures within Kizh Nation Tribal Territory:**

Note: To avoid compliance issues with the following laws, all Native American Monitoring shall be conducted by a documented lineal descendant from the ancestral Tribe of the project area (NAGPRA Law 10.14)

- The Native American Graves Protection and Repatriation Act (NAGPRA), Public Law-101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048.
- CEQA Guidelines Section 15064.5, PRC 5097.98 (d)(1).
- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

*If you are receiving these measures, The Gabrieleno Band of Mission Indians Kizh -Nation are the direct lineal descendants of your project area. The Kizh Nation ONLY responds and consults on projects within their ANCESTRAL tribal territory. Therefore, to remain in compliance with above referenced laws and to enable our Tribe with the ability to protect and preserve our last remaining and irreplaceable Tribal Cultural Resources, it is recommended that the project applicant retain a qualified professional tribal monitor/consultant from the Gabrieleno Band of Mission Indians Kizh -Nation. The Kizh Nation possesses Tribal archives including documented historical information as well as multiple members who possess unique knowledge derived from oral tradition passed down through generations of the Tribe in order to provide the expertise needed to identify whether a project is located within a culturally sensitive area given its proximity to village areas, commerce areas, recreation areas, ceremonial areas, and burial locations.*

#### **Native American Heritage Commission (NAHC) Guidelines for Native American Monitors/Consultants**

**(approved 9/13/05):** By acting as a liaison between Native American, archaeologist, developers, contactors and public agency, a Native American monitor/consultant can ensure that cultural features are treated appropriately from the Native American point of view. This can help others involved in a project to coordinate mitigation measures. These guidelines are intended to provide prospective monitors/consultants, and people who hire monitors/consultants, with an understanding of the scope and extent of knowledge that should be expected.

**Mitigation Guidelines for Tribal Cultural Resources (TCRs):** CEQA now defines TCRs as an independent element separate from archaeological resources. Environmental documents shall address a separate Tribal Cultural Resources section that includes a thorough analysis of the impacts to only TCRs and includes separate and independent mitigation measures created with tribal input under AB-52 consultations. Therefore, all agreements, mitigation, and conditions of approval regarding TCRs shall be handled solely with the Tribal Government and conversely all agreements, mitigation, and conditions of approval regarding Archaeological Resources shall be handled by an Archaeological resource company.



## MITIGATION MEASURES

**Retain a Native American Monitor/Consultant:** The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

**Unanticipated Discovery of Tribal Cultural and Archaeological Resources:** Upon discovery of any tribal cultural or archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All tribal cultural and archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request preservation in place or recovery for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, additional protective mitigation takes place (CEQA Guidelines Section 15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources.

**Public Resources Code Sections 21083.2(b)** for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. All Tribal Cultural Resources shall be returned to the Tribe. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to the Tribe or a local school or historical society in the area for educational purposes.

### **Unanticipated Discovery of Human Remains and Associated Funerary Objects:**

Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.



### **Resource Assessment & Continuation of Work Protocol:**

Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

### **Kizh-Gabrieleno Procedures for burials and funerary remains:**

If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term “human remains” encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

### **Treatment Measures:**

Prior to the continuation of ground disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.



**Professional Standards:** Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

Acceptance of Tribal Government Recommended Mitigation Measures:

By \_\_\_\_\_  
Lead Agency Representative Signature

Date: \_\_\_\_\_

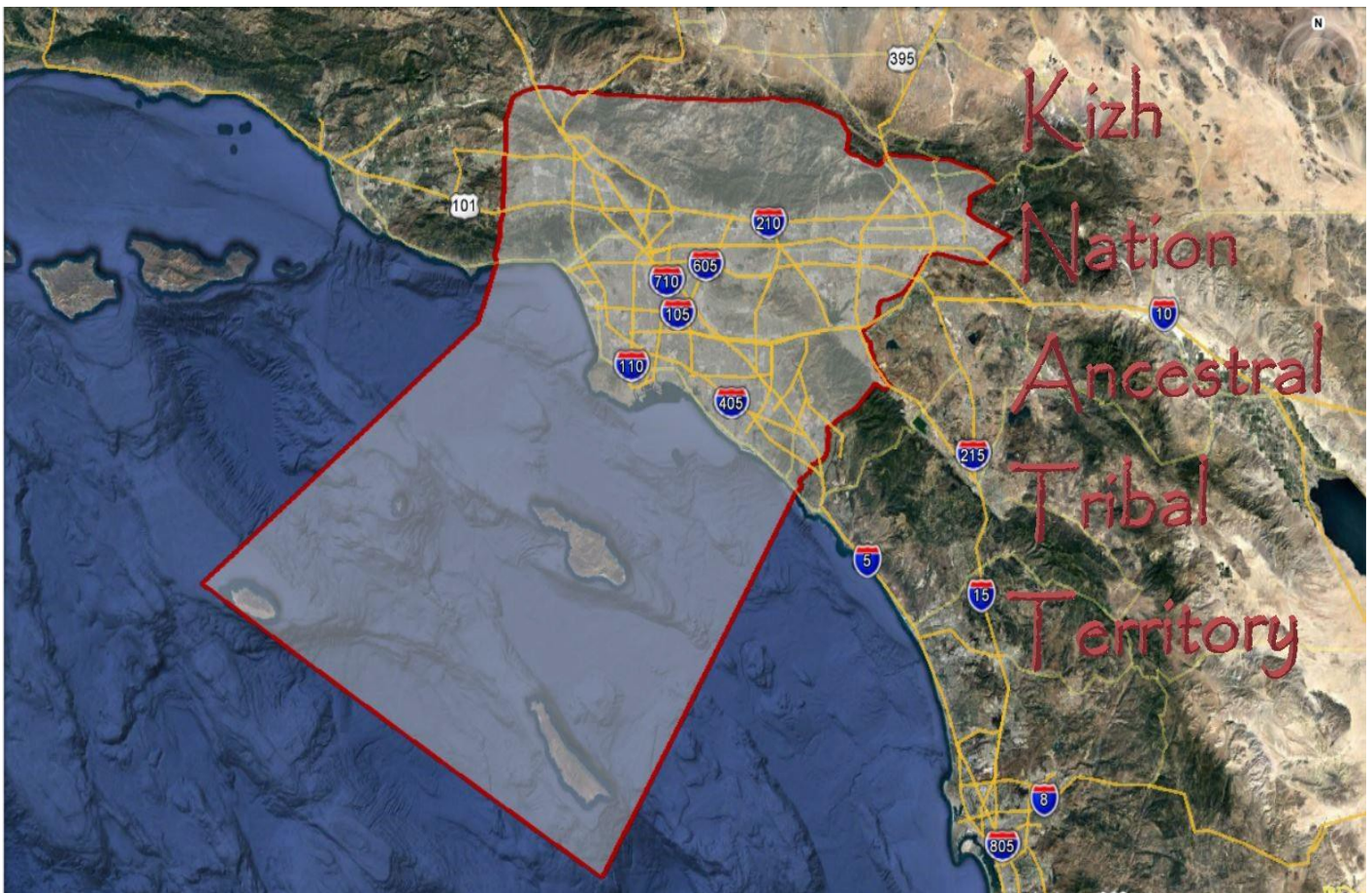
Revised: January 2020





## Attachment A

Kizh Nation Ancestral Tribal Territory extended along the coast from Malibu Creek in Los Angeles County down to Aliso Creek in Orange County and encompassed the Channel Islands of Catalina (Pimugna), San Nicolas (Haraasnga), and San Clemente (Kiinkenga). Our inland border was the San Gabriel Mountains (Hidakupa) and eastwardly our territory extended to parts of San Bernardino (Waatsngna), Orange, and Riverside counties.



## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Wednesday, January 29, 2020 1:39 PM  
**To:** Ryan Bensley; Project Planner; 'Jeff Zwack'; Kerrie Collison  
**Cc:** 'Allen, Margit'; Marlene Watanabe  
**Subject:** FW: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center  
**Attachments:** Kizh Nation Mitigation Measures 01\_2020.pdf; Fig3.7.pdf

---

**From:** City Planner  
**Sent:** Wednesday, January 29, 2020 1:38 PM  
**To:** 'Administration Gabrieleno' <admin@gabrielenoindians.org>  
**Cc:** Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

Thank you for providing us the proposed mitigation measures. I really appreciate it. I wanted to follow up with a little more detailed information on the geotechnical information on the site and the anticipated excavation associated with the project, and provide some more specific wording for the first mitigation measure given the nature of the site and anticipated excavation.

Proposed excavation is approximately 1 to 2 feet deep throughout the entire project site. Additional excavation for geopiers will be conducted within building pads for three of the structures (theater, hotel, and apartment complex). The geopier excavation will extend approximately 15 feet deep.

The majority of the project site has existing fill to a depth of 2 to 5 feet, with the southeastern corner having existing fill to a depth of 7 to 9 feet, and very few spots in the project site have existing fill to a depth of less than 1 foot. Excavation for geopiers and the building pad for Shop Building 3 (as identified on Figure 3.7 attached) have potential to encounter tribal cultural resources due to shallow fill depths in those areas. Additionally, excavation activities for utilities throughout the project (dry utilities, water, sewer, storm drain, and underground detention basins) have potential to encounter tribal cultural resources due to their depth, which is typically more than 5 feet deep. As such, Native American monitoring should be conducted for Shop 3 building pad, geopier, and utility excavation activities due to their potential to encounter tribal cultural resources.

Below is the recommended mitigation for Tribal Cultural Resources.

**Mitigation Measure TCR-1**

**Tribal Cultural Resources.** Prior to the issuance of a grading permit, the Applicant/Developer shall retain a Gabrieleno Native American Tribal representative to monitor ground-disturbing construction activities occurring for pad grading of Shop 3 (the northernmost retail building

proposed directly to the west of Winners Circle) and occurring for all geopier installation throughout the site. The retained Gabrieleno Native American Tribal representative shall be present at the cultural resources awareness training to construction personnel, and shall provide additional Tribal Cultural Resources awareness information at the same meeting. Ground disturbing activities associated with pavement removal and initial site wide grading (at a maximum anticipated depth of 1 to 2 feet deep) shall not require Tribal monitoring. However, if Tribal Cultural Resources are encountered during the unmonitored excavation activities previously specified, contractors shall stop work in the immediate area of the find and contact the retained Gabrieleno Native American Tribal representative to assess the find. Tribal monitoring shall also be required during excavation trenching for dry utilities, water, sewer, storm drain, and underground detention basin installation. Tribal monitoring shall not be conducted after initial excavation of native (previously undisturbed) soil has occurred (i.e., no Tribal monitoring shall be required for landscaping activities occurring after completion of project grading and trenching, as this soil will have been previously monitored). On-site Tribal monitoring shall be considered complete after project grading and trenching are completed and no disturbance to native (previously undisturbed) soils are anticipated.

If Tribal Cultural Resources are discovered during construction activities, ground disturbing activities in the immediate vicinity of the find shall be halted until the find is assessed by the Tribal monitor. The Applicant/Developer shall determine whether to contact the on-call archaeologist for his/her assistance in the assessment of the find. Ground disturbing construction activities shall be allowed to continue in other portions of the project while the find is being assessed. If the find is determined to be a Tribal Cultural Resource, the Gabrieleno Native American Tribe whose representative is responsible for Tribal monitoring shall coordinate with the Applicant/Developer to determine appropriate treatment of the resource.

Please note that if human remains are encountered, Regulatory Compliance Measure CUL-1 shall be followed. Adherence to Regulatory Compliance Measure CUL-1 involves following State Health and Safety Code Section 7050.5 and State Public Resource Code Section 5097.98, including coordination with the County Coroner and the Native American Heritage Commission, as well as a Most Likely Descendant (if the human remains are determined to be Native American). We assume that the Mitigation Measure listed above is agreeable to (add name of Tribe) and unless we hear otherwise by end of business on Friday January 31, 2020, we will conclude the consultation phase.

Thank you again for your time and for your willingness to share with me details about your community's history.

I very much appreciate it,

John

**John P. Ramirez, AICP**  
*City Planner*  
Community Development Department  
City of Cypress

**From:** Administration Gabrieleno <[admin@gabrielenoindians.org](mailto:admin@gabrielenoindians.org)>

**Sent:** Friday, January 17, 2020 1:29 PM

**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>

**Cc:** Matthew Teutimez <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723  
Office: 844-390-0787  
website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress



---

**From:** City Planner  
**Sent:** Friday, January 17, 2020 12:28 PM  
**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>  
**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>  
**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

## Kerrie Collison

---

**From:** City Planner <CityPlanner@cypressca.org>  
**Sent:** Thursday, January 30, 2020 7:30 PM  
**To:** Ryan Bensley; Kerrie Collison; Project Planner; jzwack@annealtagroup.com  
**Subject:** Fwd: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

**From:** Andy Salas <chairman@gabrielenoindians.org>  
**Date:** January 30, 2020 at 2:32:00 PM PST  
**To:** City Planner <CityPlanner@cypressca.org>  
**Cc:** Administration Gabrieleno Indians <admin@gabrielenoindians.org>, Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>  
**Subject:** Re: Follow Up - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Mr. Ramirez,

We thank you for your efforts in creating a very detailed mitigation. We are in agreement with the specified ground disturbance activities and the locations outlined for onsite monitoring. Since we are both in concurrence with this mitigation please utilize it in your environmental document for this project. Please provide us with a copy of this environmental document with the incorporated mitigation. Following the inclusion of the mitigation in your environmental document, the AB52 consultation will conclude.

We thank you for your time and effort in this matter.

On Wed, Jan 29, 2020 at 1:37 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

Thank you for providing us the proposed mitigation measures. I really appreciate it. I wanted to follow up with a little more detailed information on the geotechnical information on the site and the anticipated excavation associated with the project, and provide some more specific wording for the first mitigation measure given the nature of the site and anticipated excavation.

Proposed excavation is approximately 1 to 2 feet deep throughout the entire project site. Additional excavation for geopiers will be conducted within building pads for three of the

structures (theater, hotel, and apartment complex). The geopier excavation will extend approximately 15 feet deep.

The majority of the project site has existing fill to a depth of 2 to 5 feet, with the southeastern corner having existing fill to a depth of 7 to 9 feet, and very few spots in the project site have existing fill to a depth of less than 1 foot. Excavation for geopiers and the building pad for Shop Building 3 (as identified on Figure 3.7 attached) have potential to encounter tribal cultural resources due to shallow fill depths in those areas. Additionally, excavation activities for utilities throughout the project (dry utilities, water, sewer, storm drain, and underground detention basins) have potential to encounter tribal cultural resources due to their depth, which is typically more than 5 feet deep. As such, Native American monitoring should be conducted for Shop 3 building pad, geopier, and utility excavation activities due to their potential to encounter tribal cultural resources.

Below is the recommended mitigation for Tribal Cultural Resources.

**Mitigation Measure TCR-**

**1 Tribal Cultural Resources.**

Prior to the issuance of a grading permit, the Applicant/Developer shall retain a Gabrieleno Native American Tribal representative to monitor ground-disturbing construction activities occurring for pad grading of Shop 3 (the northernmost retail building proposed directly to the west of Winners Circle) and occurring for all geopier installation throughout the site. The retained Gabrieleno Native American Tribal representative shall be present at the cultural resources awareness training to construction personnel, and shall provide additional Tribal Cultural Resources awareness information at the same meeting. Ground disturbing activities associated with pavement removal and initial site wide grading (at a maximum anticipated depth of 1 to 2 feet deep) shall not require Tribal monitoring. However, if Tribal Cultural Resources are encountered during the unmonitored excavation activities previously specified, contractors shall stop work in the immediate area of the find and contact the retained Gabrieleno Native American Tribal representative to assess the find. Tribal monitoring shall also be required during excavation trenching for dry utilities, water, sewer, storm drain, and underground detention basin installation. Tribal monitoring shall not be conducted after initial excavation of native (previously undisturbed) soil has occurred (i.e., no Tribal monitoring shall be required for landscaping activities occurring after completion of project grading and trenching, as this soil will have been previously monitored). On-site Tribal monitoring shall be considered complete after project grading and trenching are completed and no disturbance to native (previously undisturbed) soils are anticipated.

If Tribal Cultural Resources are discovered during construction activities, ground disturbing activities in the immediate vicinity of the find shall be halted until the find is assessed by the Tribal monitor. The Applicant/Developer shall determine whether to contact the on-call archaeologist for his/her assistance in the assessment of the find. Ground disturbing construction activities shall be allowed to continue in other portions of the project while the find is being assessed. If the find is determined to be a Tribal Cultural Resource, the Gabrieleno Native American Tribe whose representative is responsible for Tribal monitoring shall coordinate with the Applicant/Developer to determine appropriate treatment of the resource.

Please note that if human remains are encountered, Regulatory Compliance Measure CUL-1 shall be followed. Adherence to Regulatory Compliance Measure CUL-1 involves following State Health and Safety Code Section 7050.5 and State Public Resource Code Section 5097.98, including coordination with the County Coroner and the Native American Heritage Commission, as well as a Most Likely Descendant (if the human remains are determined to be Native American). We assume that the Mitigation Measure listed above is agreeable to (add name of Tribe) and unless we hear otherwise by end of business on Friday January 31, 2020, we will conclude the consultation phase.

Thank you again for your time and for your willingness to share with me details about your community's history.

I very much appreciate it,

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

**From:** Administration Gabrieleno <[admin@gabrielenoindians.org](mailto:admin@gabrielenoindians.org)>

**Sent:** Friday, January 17, 2020 1:29 PM

**To:** City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)>

**Cc:** Matthew Teutimez <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Re: Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Jon

Thank you for your kind words, we greatly appreciate it and the honor was ours. Attached are the mitigations we would like to propose for this project. If you have any questions feel free to contact us. Have a great weekend.

Thank you

Admin Specialist  
Gabrieleno Band of Mission Indians - Kizh Nation  
PO Box 393  
Covina, CA 91723

Office: 844-390-0787

website: [www.gabrielenoindians.org](http://www.gabrielenoindians.org)



Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <[CityPlanner@cypressca.org](mailto:CityPlanner@cypressca.org)> wrote:

Hello Chairman Salas,

I wanted to be sure you received this information.

Thank you!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress

---

**From:** City Planner

**Sent:** Friday, January 17, 2020 12:28 PM

**To:** '[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)' <[gabrielenoindians@yahoo.com](mailto:gabrielenoindians@yahoo.com)>

**Cc:** '[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)' <[Matthew.Teutimez@gabrielenoindians.org](mailto:Matthew.Teutimez@gabrielenoindians.org)>

**Subject:** Thank you so much for your time - AB 52 and SB 18 Consultation Call Yesterday - Cypress City Center

Hello Chairman Salas,

I wanted to thank you and Mr. Teutimez for your time on our call yesterday.

Thank you for sharing me the history of your community and families – it was very interesting and I appreciate you taking your time to speak with me.

As we discussed, I look forward to receiving your proposed mitigation measures for this project so I can share with our team.

Thank you so much!

John

**John P. Ramirez, AICP**

*City Planner*

Community Development Department

City of Cypress