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

Gavin Newsom
Governor

Kate Gordon
Director

Memorandum

Date: March 12, 2020

To: All Reviewing Agencies

From: Scott Morgan, Director

Re: SCH # **2019110458**
Cypress City Center

The Lead Agency has corrected some information regarding the above-mentioned project. Please see the attached materials for more specific information. All other project information remains the same.

cc: Jeff Zwack
City of Cypress
5275 Orange Avenue
Cypress, CA 90630

DRAFT EIR APPENDICES

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APPENDIX A

NOTICE OF PREPARATION / COMMENT LETTERS

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NOTICE OF PREPARATION

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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

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Agencies (NOP)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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)

Agua Caliente Band of Cahuilla Indians
Attn: Jeff Grubbe, Chairperson
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

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

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

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

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

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

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

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

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

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

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

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

Pechanga Band of Luiseno Indians
Attn: Paul Macarro
Cultural Resources Coordinator
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

Gabrielino Tongva Tribe
Sam Dunlap
TongvaTCR@gmail.com

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

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

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

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

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

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

Interested Parties (NOP only)

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

SCOPING COMMENTS

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RESPONSE LETTERS

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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

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.apbp.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.

Sincerely,

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

CITY OF
Los Alamitos
California

3191 Katella Avenue
Los Alamitos, CA 90720-5600
Telephone: (562) 431-3538
FAX: (562) 493-1255
www.cityoflosalamitos.org

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,

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
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

SB 18

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

Some of SB 18's provisions include:

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

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

NAHC Recommendations for Cultural Resources Assessments

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

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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

Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Staff Services Analyst

cc: State Clearinghouse

OCTA

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.

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

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	Tishmall Turner	Steve Stallings	Laurie E. Gonzalez	Alfonso Kolb
Tribal Chairman	Vice Chairwoman	Council Member	Council Member	Council Member

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL:
CityPlanner@cypressca.org
John P. Ramirez, AICP, City Planner
City of Cypress, Planning Department
5275 Orange Avenue
Cypress, CA 90630

December 17, 2019

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[1]. 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). South Coast AQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

[1] 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[2] 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.

[2] 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.

This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

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.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
ORC191126-05
Control Number

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

Gavin Newsom
Governor

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 . 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

RECEIVED
DEC 4 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CAI
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov

Print Form

Appendix C

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) 229-6727

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-605, I-405, SR-22 — Waterways: Coyote Creek, San Gabriel River

Airports: Los Alamitos JFTB — Railways: ____ — Schools: See attachment

Document Type:

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

Governor's Office of Planning & Research
NOV 22 2019
STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☒ Specific Plan ☐ Rezone ☐ 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: ____

Development Type:

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

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

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

NOP Distribution List

County: Orange **SCH#** 2019110458

Resources Agency

- [x] **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
- [x] **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
- [x] **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
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [x] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [x] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [x] **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
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [x] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
  Jack Wursten
- [x] **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 #_____
- [x] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [x] **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)
- [x] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____
  _____
  _____
- [ ] _____
  Conservancy

Last Updated 5/22/18

RESPONSE FORMS/EMAILS

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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? X 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

RECEIVED
DEC 23 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

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

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

Donna Ballard
6281 Ferne Ave
Cypress CA 90630

Please Comment by December 23, 2019

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 Carrera Circle CITY: Cypress ZIP: 90630

EMAIL ADDRESS: Heidi.RNP2@sbcglobal.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 naturally on Katella Ave but areas North of Katella where in 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 bottlenecking and accidents.

Please comment by December 23, 2019

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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 ANGUILLA 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 (H.D.H.) 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

WME

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

THE PLAN SUBMITTED BY DR. AHMED 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

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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

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 PROJET
Wednesday, December 11, 2018

NAME: Millage House Jr

Address: 4220 Avenida Sevilla CITY: Cypress ZIP: 90630

EMAIL ADDRESS: 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

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 PROJET
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 theather and shops and garage parking.

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

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

The currant 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

RECEIVED
DEC 23 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

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: pk6180164@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 Katella & 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: Yvette Krebs & Louis Krebs
Address: 6371 Ferne Ave City: Cypress Zip: 90630
Email Address: yvettecrystal@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:

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

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

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• 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.

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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.

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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 Ferne Ave City: Cypress Zip: 90630
Email Address: llsnellen@aol.com
Representing: _____

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Email: CityPlanner@cypressca.org

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

NAME: JANE LENSCH

ADDRESS: 5040 YORKSHIRE DR CITY: CYP ZIP: 90630

EMAIL ADDRESS:

REPRESENTING: Community

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
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5275 Orange Avenue
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This seems to be loosely organized to reach only a few citizens + comments. 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. Yes all the while impacts in our city. Dense living high rise results in many adults living together - too many cars not enough open space. No one ever 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 if 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:

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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 PBP-25A (PBP). THEREFORE, CCC NOT ONLY NEGATES CYPRESS PROTECTION FOR QUALITY OF LIFE CONCERNS - IT COUNTERATTACKS PRIOR WRITTEN PLANNING GUARANTEEING PROTECTION TO OUR CITIZENS. WHY?

Please comment by December 23, 2019

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 IMPLOSION ON 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 DESIST 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 PM 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 251 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 massage 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:
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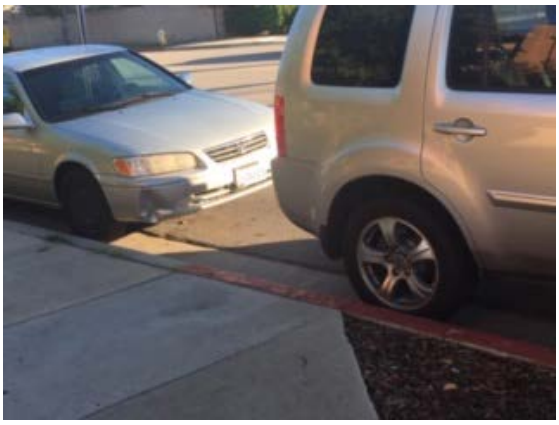
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Thank you,
Ingrid and Brent Marino
23 year residents





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

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Attn: John P. Ramirez, AICP, City Planner
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CONCERN ABOUT CLIENTLE FOR PROPOSSED 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

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

Name: Brooke Nafarrete

Address: 6251 Ferne Ave. City: Cypress Zip: 90630

Email Address: BrookeBNafarrete@gmail.com

Representing: Self

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Letter attached to this form>>>>>>>>>>>>>>>>>>>>>>>>>>>>

RECEIVED
DEC 23 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

December 22, 2019

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

Re: Cypress City Center Project Comment Form

Dear Mr. Ramirez,

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- 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?
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    - 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

PUBLIC SCOPING MEETING
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Wednesday, December 11, 2019
Please Comment by December 23, 2019

Name: Carlo Nafarrete

Address: 6251 Ferne Ave. City: Cypress Zip: 90630

Email Address: CarloNafarrete@gmail.com

Representing: Self

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Regards,

Carlo A. Nafarrete

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!

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

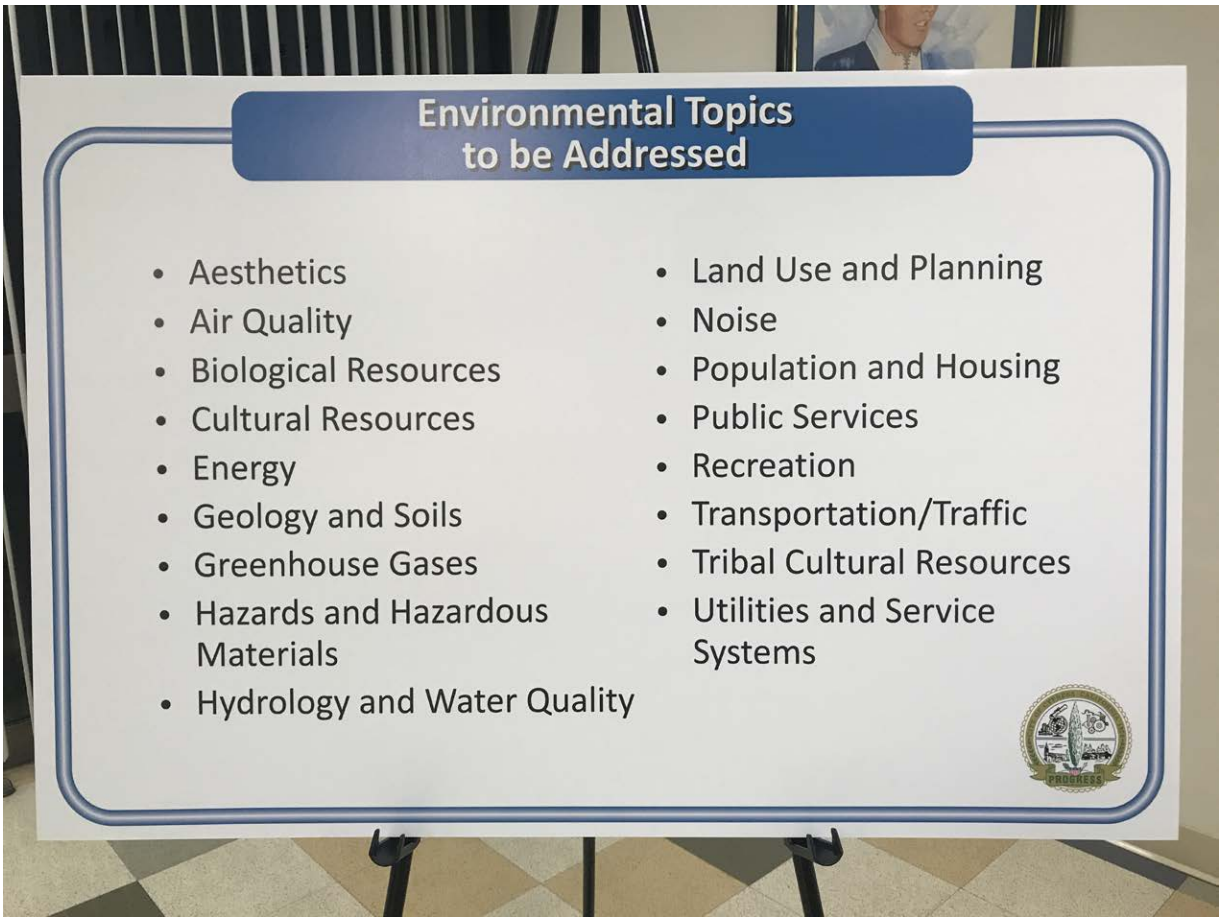
Please drop comments in the Comment Box or mail them to:

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).

Please comment by December 23, 2019



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: Trisha Orabuena
ADDRESS: 10531 Hester St CITY: Cypress ZIP: 90630
EMAIL ADDRESS: lovetonmom2@aol.com
REPRESENTING: myself

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

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

Thank you.

Trisha Orabuena

Please comment by December 23, 2019

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DEC 23 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

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
Representing: Self

RECEIVED
DEC 2 0 2019
CITY OF CYPRESS
COMMUNITY DEVELOPMENT

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

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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. 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.

RECEIVED
DEC 2 0 2019
CITY OF COSTA MESA
COMMUNITY DEVELOPMENT

Please Comment by December 23, 2019

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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.

RECEIVED
DEC 2 0 2019
CITY OF ANAHEIM
COMMUNITY DEVELOPMENT

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 3rd 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:

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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
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Phone: (714) 229-6720
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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

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CYPRESS CITY CENTER PROJECT
Wednesday, December 11, 2019
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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? X YES NO

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COMMUNITY DEVELOPMENT

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:

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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.

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• 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.

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Christine Scheichl

Christine Scheichl
6272 Ferne Ave
Cypress CA 90630

Please Comment by December 23, 2019

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

NAME: Marcela Valencia
ADDRESS: 5491 Ball Rd. CITY: Cypress ZIP: 90630
EMAIL ADDRESS: marcelava1@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

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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).

Being a resident and business owner in the city of Cypress, your project represent no benefit. I presently drive 1.2 miles from home to work, it can take me 20 minute ob 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.
-Shopping Center, with the rise ob online shopping, shopping centers are struggling to survice.
Your report migh show information and numbers expressing the city is capable ob developing but for a resident the impact ob enviroment 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: bhutchins@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
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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 BONANNI / 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

NAME: Bill Wostenberg

ADDRESS: 4290 Livermore Place **CITY:** Cypress **ZIP:** 90630

EMAIL ADDRESS: bwostenberg@gmail.com

REPRESENTING: My family, Cypress residents since 1968

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

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How does the Shea Properties mix-use project compare with the project proposal prevsiously presented by Los Al Race Track owner Dr. Ed Allred?

How was density calculated for each proposal?

What infrastructure changes will be required? What entities will be responsible for the costs?

How does the proposed project align with Measure A "Cypress Town Center and Commons 2.0 Initiative" approved by Cypress residents ?

How will utilities and service systems be impacted?

What is the anticpated impact on traffic patterns on the area surrendering the project?

What is the anticpated impact on city services?

For a project of this nature, why aren't direct mailings to Cypress residents being done?

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 Yengwine
Address: 10292 JANICE LYNN St. City: Cypress Zip: 90630
Email Address: N A
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:

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• 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

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

Name: WAYNE YENAWINE
Address: 6282 FERNE City: CYPRESS Zip: 90630
Email Address: ELDIABLOONE@CA.RR.COM
Representing: _____

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

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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

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Comments (copied from George Pardon):

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APPENDIX B

AIR QUALITY, GREENHOUSE GASES, AND ENERGY ANALYSIS DATA

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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

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

1.3 User Entered Comments & Non-Default Data

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 equiptment 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 equiptment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

Water Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

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

tblWoodstoves	NumberNoncatalytic	12.55	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.2151	50.2641	40.6504	0.1122	18.2675	2.1989	20.4664	9.9840	2.0230	12.0071	0.0000	11,255.5749	11,255.5749	1.9486	0.0000	11,285.2258
2021	4.7157	35.2500	38.6896	0.1104	5.7262	1.2467	6.9729	1.5372	1.1673	2.7045	0.0000	11,078.1575	11,078.1575	1.1559	0.0000	11,107.0546
2022	62.9821	32.1190	37.1227	0.1084	5.7262	1.0630	6.7892	1.5372	0.9956	2.5328	0.0000	10,885.7731	10,885.7731	1.1313	0.0000	10,914.0564
Maximum	**62.9821**	**50.2641**	**40.6504**	**0.1122**	**18.2675**	**2.1989**	**20.4664**	**9.9840**	**2.0230**	**12.0071**	**0.0000**	**11,255.5749**	**11,255.5749**	**1.9486**	**0.0000**	**11,285.2258**

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	11,255.5749	11,255.5749	1.9486	0.0000	11,285.2258
2021	4.7157	35.2500	38.6896	0.1104	5.7262	1.2467	6.9729	1.5372	1.1673	2.7045	0.0000	11,078.1575	11,078.1575	1.1559	0.0000	11,107.0546
2022	62.9821	32.1190	37.1227	0.1084	5.7262	1.0630	6.7892	1.5372	0.9956	2.5328	0.0000	10,885.7731	10,885.7731	1.1313	0.0000	10,914.0564
Maximum	**62.9821**	**50.2641**	**40.6504**	**0.1122**	**7.2470**	**2.1989**	**9.4460**	**3.9263**	**2.0230**	**5.9494**	**0.0000**	**11,255.5749**	**11,255.5749**	**1.9486**	**0.0000**	**11,285.2258**

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	N20	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**

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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
Mobile	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.4750	31,824.4750	1.6271		31,865.1514
Total	**18.7463**	**41.0701**	**107.3760**	**0.3286**	**26.5418**	**0.5629**	**27.1046**	**7.1015**	**0.5458**	**7.6474**	**0.0000**	**34,908.7037**	**34,908.7037**	**1.7221**	**0.0559**	**34,968.4009**

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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
Mobile	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.4750	31,824.4750	1.6271		31,865.1514
Total	**18.7463**	**41.0701**	**107.3760**	**0.3286**	**26.5418**	**0.5629**	**27.1046**	**7.1015**	**0.5458**	**7.6474**	**0.0000**	**34,908.7037**	**34,908.7037**	**1.7221**	**0.0559**	**34,968.4009**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	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

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

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
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**9.2016**	**1.6587**	**10.8603**	**1.3932**	**1.5419**	**2.9351**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3321	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
Total	**0.4061**	**11.7645**	**3.0295**	**0.0340**	**0.9103**	**0.0391**	**0.9495**	**0.2480**	**0.0374**	**0.2854**		**3,657.8714**	**3,657.8714**	**0.2541**		**3,664.2232**

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
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.5886**	**1.6587**	**5.2473**	**0.5434**	**1.5419**	**2.0852**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3321	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
Total	**0.4061**	**11.7645**	**3.0295**	**0.0340**	**0.9103**	**0.0391**	**0.9495**	**0.2480**	**0.0374**	**0.2854**		**3,657.8714**	**3,657.8714**	**0.2541**		**3,664.2232**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

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

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	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
Total	**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**

Mitigated Construction On-Site

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

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	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
Total	**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**

3.4 Grading - 2020

Unmitigated Construction On-Site

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

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0987	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
Total	**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**

Mitigated Construction On-Site

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

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0987	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
Total	**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**

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
Total	**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**

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
Total	**2.6066**	**14.8797**	**19.7249**	**0.0792**	**5.7262**	**0.1048**	**5.8310**	**1.5372**	**0.0989**	**1.6361**		**8,110.2661**	**8,110.2661**	**0.3716**		**8,119.5570**

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
Total	**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**

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
Total	**2.6066**	**14.8797**	**19.7249**	**0.0792**	**5.7262**	**0.1048**	**5.8310**	**1.5372**	**0.0989**	**1.6361**		**8,110.2661**	**8,110.2661**	**0.3716**		**8,119.5570**

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
Total	**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**

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
Total	**2.3995**	**13.4850**	**18.1037**	**0.0774**	**5.7262**	**0.0615**	**5.7877**	**1.5372**	**0.0575**	**1.5947**		**7,932.8244**	**7,932.8244**	**0.3484**		**7,941.5348**

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
Total	**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**

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
Total	**2.3995**	**13.4850**	**18.1037**	**0.0774**	**5.7262**	**0.0615**	**5.7877**	**1.5372**	**0.0575**	**1.5947**		**7,932.8244**	**7,932.8244**	**0.3484**		**7,941.5348**

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
Total	**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**

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		3,356.0861	3,356.0861	0.2180		3,361.5350
Worker	1.9041	1.1881	13.7176	0.0440	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,383.5753	4,383.5753	0.1100		4,386.3262
Total	**2.2558**	**12.7301**	**16.7831**	**0.0754**	**5.7262**	**0.0571**	**5.7833**	**1.5372**	**0.0534**	**1.5906**		**7,739.6614**	**7,739.6614**	**0.3280**		**7,747.8613**

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
Total	**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**

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		3,356.0861	3,356.0861	0.2180		3,361.5350
Worker	1.9041	1.1881	13.7176	0.0440	4.9070	0.0351	4.9421	1.3014	0.0323	1.3337		4,383.5753	4,383.5753	0.1100		4,386.3262
Total	**2.2558**	**12.7301**	**16.7831**	**0.0754**	**5.7262**	**0.0571**	**5.7833**	**1.5372**	**0.0534**	**1.5906**		**7,739.6614**	**7,739.6614**	**0.3280**		**7,747.8613**

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
Total	**1.7063**	**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**

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
Total	**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**

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
Total	**1.7063**	**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**

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
Total	**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**

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
Total	**62.6005**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
Total	**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**

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
Total	**62.6005**	**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**

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
Total	**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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.4750	31,824.4750	1.6271		31,865.1514
Unmitigated	7.2878	38.3373	84.7354	0.3122	26.5418	0.2550	26.7967	7.1015	0.2379	7.3394		31,824.4750	31,824.4750	1.6271		31,865.1514

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
NaturalGas Unmitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971

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
Total		**0.2793**	**2.4927**	**1.7937**	**0.0152**		**0.1930**	**0.1930**		**0.1930**	**0.1930**		**3,046.6922**	**3,046.6922**	**0.0584**	**0.0559**	**3,064.7971**

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
Total		**0.2793**	**2.4927**	**1.7937**	**0.0152**		**0.1930**	**0.1930**		**0.1930**	**0.1930**		**3,046.6922**	**3,046.6922**	**0.0584**	**0.0559**	**3,064.7971**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.1792	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
Total	**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

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
Total	**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**

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

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

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

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

1.3 User Entered Comments & Non-Default Data

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 equiptment 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 equiptment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

Water Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

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

tblWoodstoves	NumberNoncatalytic	12.55	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	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**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.08**	**0.00**	**32.20**	**46.39**	**0.00**	**35.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.1792	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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
Mobile	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.3327	33,632.3327	1.6149		33,672.7041
Total	**19.1490**	**40.5677**	**112.1227**	**0.3465**	**26.5418**	**0.5610**	**27.1028**	**7.1015**	**0.5440**	**7.6456**	**0.0000**	**36,716.5614**	**36,716.5614**	**1.7099**	**0.0559**	**36,775.9535**

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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
Mobile	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.3327	33,632.3327	1.6149		33,672.7041
Total	**19.1490**	**40.5677**	**112.1227**	**0.3465**	**26.5418**	**0.5610**	**27.1028**	**7.1015**	**0.5440**	**7.6456**	**0.0000**	**36,716.5614**	**36,716.5614**	**1.7099**	**0.0559**	**36,775.9535**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	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

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

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
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**9.2016**	**1.6587**	**10.8603**	**1.3932**	**1.5419**	**2.9351**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3228	11.5660	2.3014	0.0330	0.7427	0.0373	0.7799	0.2035	0.0357	0.2392		3,562.8991	3,562.8991	0.2391		3,568.8763
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
Total	**0.3907**	**11.6117**	**2.9146**	**0.0347**	**0.9103**	**0.0386**	**0.9489**	**0.2480**	**0.0368**	**0.2848**		**3,734.5618**	**3,734.5618**	**0.2440**		**3,740.6623**

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
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.5886**	**1.6587**	**5.2473**	**0.5434**	**1.5419**	**2.0852**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3228	11.5660	2.3014	0.0330	0.7427	0.0373	0.7799	0.2035	0.0357	0.2392		3,562.8991	3,562.8991	0.2391		3,568.8763
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
Total	**0.3907**	**11.6117**	**2.9146**	**0.0347**	**0.9103**	**0.0386**	**0.9489**	**0.2480**	**0.0368**	**0.2848**		**3,734.5618**	**3,734.5618**	**0.2440**		**3,740.6623**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

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

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	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
Total	**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**

Mitigated Construction On-Site

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

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	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
Total	**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**

3.4 Grading - 2020

Unmitigated Construction On-Site

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

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0905	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
Total	**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**

Mitigated Construction On-Site

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

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0905	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
Total	**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**

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
Total	**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**

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		3,512.9402	3,512.9402	0.2206		3,518.4542
Worker	1.9862	1.3351	17.9471	0.0504	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		5,023.9926	5,023.9926	0.1444		5,027.6037
Total	**2.4066**	**14.7668**	**21.1455**	**0.0834**	**5.7262**	**0.1038**	**5.8300**	**1.5372**	**0.0980**	**1.6351**		**8,536.9329**	**8,536.9329**	**0.3650**		**8,546.0579**

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
Total	**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**

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		3,512.9402	3,512.9402	0.2206		3,518.4542
Worker	1.9862	1.3351	17.9471	0.0504	4.9070	0.0372	4.9442	1.3014	0.0343	1.3356		5,023.9926	5,023.9926	0.1444		5,027.6037
Total	**2.4066**	**14.7668**	**21.1455**	**0.0834**	**5.7262**	**0.1038**	**5.8300**	**1.5372**	**0.0980**	**1.6351**		**8,536.9329**	**8,536.9329**	**0.3650**		**8,546.0579**

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
Total	**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**

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		3,487.2124	3,487.2124	0.2110		3,492.4860
Worker	1.8531	1.2018	16.5382	0.0488	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,861.5006	4,861.5006	0.1307		4,864.7689
Total	**2.2093**	**13.4099**	**19.4352**	**0.0815**	**5.7262**	**0.0607**	**5.7869**	**1.5372**	**0.0568**	**1.5940**		**8,348.7129**	**8,348.7129**	**0.3417**		**8,357.2549**

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
Total	**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**

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		3,487.2124	3,487.2124	0.2110		3,492.4860
Worker	1.8531	1.2018	16.5382	0.0488	4.9070	0.0361	4.9431	1.3014	0.0333	1.3346		4,861.5006	4,861.5006	0.1307		4,864.7689
Total	**2.2093**	**13.4099**	**19.4352**	**0.0815**	**5.7262**	**0.0607**	**5.7869**	**1.5372**	**0.0568**	**1.5940**		**8,348.7129**	**8,348.7129**	**0.3417**		**8,357.2549**

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
Total	**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**

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
Total	**2.0722**	**12.6739**	**18.0306**	**0.0794**	**5.7262**	**0.0564**	**5.7826**	**1.5372**	**0.0527**	**1.5899**		**8,144.0649**	**8,144.0649**	**0.3212**		**8,152.0956**

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
Total	**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**

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
Total	**2.0722**	**12.6739**	**18.0306**	**0.0794**	**5.7262**	**0.0564**	**5.7826**	**1.5372**	**0.0527**	**1.5899**		**8,144.0649**	**8,144.0649**	**0.3212**		**8,152.0956**

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
Total	**1.7063**	**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**

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
Total	**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**

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
Total	**1.7063**	**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**

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
Total	**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**

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
Total	**62.6005**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
Total	**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**

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
Total	**62.6005**	**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**

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
Total	**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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.3327	33,632.3327	1.6149		33,672.7041
Unmitigated	7.6906	37.8349	89.4822	0.3302	26.5418	0.2531	26.7948	7.1015	0.2361	7.3376		33,632.3327	33,632.3327	1.6149		33,672.7041

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971
NaturalGas Unmitigated	0.2793	2.4927	1.7937	0.0152		0.1930	0.1930		0.1930	0.1930		3,046.6922	3,046.6922	0.0584	0.0559	3,064.7971

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
Total		**0.2793**	**2.4927**	**1.7937**	**0.0152**		**0.1930**	**0.1930**		**0.1930**	**0.1930**		**3,046.6922**	**3,046.6922**	**0.0584**	**0.0559**	**3,064.7971**

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
Total		**0.2793**	**2.4927**	**1.7937**	**0.0152**		**0.1930**	**0.1930**		**0.1930**	**0.1930**		**3,046.6922**	**3,046.6922**	**0.0584**	**0.0559**	**3,064.7971**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.1792	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
Total	**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

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
Total	**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**

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

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

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

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

1.3 User Entered Comments & Non-Default Data

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 equiptment 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 equiptment over 50 HP will utilize Tier 2 engines. Water exposed area at least three times daily.

Water Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

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

tblWoodstoves	NumberNoncatalytic	12.55	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	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**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**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

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
Total	**3.3489**	**7.5862**	**18.5515**	**0.0606**	**4.7430**	**0.0957**	**4.8387**	**1.2710**	**0.0926**	**1.3636**	**83.1726**	**6,904.7114**	**6,987.8840**	**5.6987**	**0.0465**	**7,144.2103**

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
Total	**3.3489**	**7.5862**	**18.5515**	**0.0606**	**4.7430**	**0.0957**	**4.8387**	**1.2710**	**0.0926**	**1.3636**	**81.1432**	**6,883.8216**	**6,964.9649**	**5.4891**	**0.0413**	**7,114.5094**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.44**	**0.30**	**0.33**	**3.68**	**11.12**	**0.42**

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

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

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
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0920**	**0.0166**	**0.1086**	**0.0139**	**0.0154**	**0.0294**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	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
Total	**3.9400e-003**	**0.1198**	**0.0295**	**3.5000e-004**	**8.9600e-003**	**3.9000e-004**	**9.3400e-003**	**2.4500e-003**	**3.7000e-004**	**2.8100e-003**	**0.0000**	**33.5537**	**33.5537**	**2.2500e-003**	**0.0000**	**33.6100**

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
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0359**	**0.0166**	**0.0525**	**5.4300e-003**	**0.0154**	**0.0209**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	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
Total	**3.9400e-003**	**0.1198**	**0.0295**	**3.5000e-004**	**8.9600e-003**	**3.9000e-004**	**9.3400e-003**	**2.4500e-003**	**3.7000e-004**	**2.8100e-003**	**0.0000**	**33.5537**	**33.5537**	**2.2500e-003**	**0.0000**	**33.6100**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-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
Total	**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**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0352**	**0.0110**	**0.0462**	**0.0194**	**0.0101**	**0.0295**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-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
Total	**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**

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
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.1301**	**0.0326**	**0.1627**	**0.0540**	**0.0300**	**0.0840**	**0.0000**	**81.7264**	**81.7264**	**0.0264**	**0.0000**	**82.3872**

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
Total	**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**

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
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.0507**	**0.0326**	**0.0834**	**0.0210**	**0.0300**	**0.0510**	**0.0000**	**81.7263**	**81.7263**	**0.0264**	**0.0000**	**82.3871**

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
Total	**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**

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
Total	**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**

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
Total	**7.1700e-003**	**0.0455**	**0.0600**	**2.4000e-004**	**0.0169**	**3.1000e-004**	**0.0172**	**4.5400e-003**	**2.9000e-004**	**4.8300e-003**	**0.0000**	**22.4521**	**22.4521**	**9.9000e-004**	**0.0000**	**22.4769**

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
Total	**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**

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
Total	**7.1700e-003**	**0.0455**	**0.0600**	**2.4000e-004**	**0.0169**	**3.1000e-004**	**0.0172**	**4.5400e-003**	**2.9000e-004**	**4.8300e-003**	**0.0000**	**22.4521**	**22.4521**	**9.9000e-004**	**0.0000**	**22.4769**

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
Total	**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**

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
Total	**0.2863**	**1.7928**	**2.3972**	**0.0103**	**0.7338**	**7.9600e-003**	**0.7418**	**0.1973**	**7.4500e-003**	**0.2048**	**0.0000**	**955.3152**	**955.3152**	**0.0405**	**0.0000**	**956.3271**

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
Total	**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**

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
Total	**0.2863**	**1.7928**	**2.3972**	**0.0103**	**0.7338**	**7.9600e-003**	**0.7418**	**0.1973**	**7.4500e-003**	**0.2048**	**0.0000**	**955.3152**	**955.3152**	**0.0405**	**0.0000**	**956.3271**

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
Total	**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**

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
Total	**0.0649**	**0.4084**	**0.5364**	**2.4200e-003**	**0.1771**	**1.7900e-003**	**0.1789**	**0.0476**	**1.6700e-003**	**0.0493**	**0.0000**	**224.9885**	**224.9885**	**9.1900e-003**	**0.0000**	**225.2183**

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
Total	**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**

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
Total	**0.0649**	**0.4084**	**0.5364**	**2.4200e-003**	**0.1771**	**1.7900e-003**	**0.1789**	**0.0476**	**1.6700e-003**	**0.0493**	**0.0000**	**224.9885**	**224.9885**	**9.1900e-003**	**0.0000**	**225.2183**

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
Total	**0.0256**	**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**

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
Total	**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**

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
Total	**0.0256**	**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**

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
Total	**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**

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
Total	**1.8780**	**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**

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
Total	**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**

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
Total	**1.8780**	**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**

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
Total	**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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	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
Unmitigated	1.2943	7.1012	15.6182	0.0577	4.7430	0.0462	4.7892	1.2710	0.0431	1.3140	0.0000	5,336.4146	5,336.4146	0.2659	0.0000	5,343.0624

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

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
Total		**0.0510**	**0.4549**	**0.3274**	**2.7800e-003**		**0.0352**	**0.0352**		**0.0352**	**0.0352**	**0.0000**	**504.4141**	**504.4141**	**9.6600e-003**	**9.2500e-003**	**507.4116**

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
Total		**0.0510**	**0.4549**	**0.3274**	**2.7800e-003**		**0.0352**	**0.0352**		**0.0352**	**0.0352**	**0.0000**	**504.4141**	**504.4141**	**9.6600e-003**	**9.2500e-003**	**507.4116**

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
Total		**933.5279**	**0.0539**	**0.0112**	**938.1951**

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
Total		**933.5279**	**0.0539**	**0.0112**	**938.1951**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0036	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
Total	**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

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
Total	**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**

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

	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

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
Total		**136.2448**	**1.0494**	**0.0261**	**170.2620**

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
Total		**113.3257**	**0.8398**	**0.0209**	**140.5611**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

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
Total		**73.0260**	**4.3157**	**0.0000**	**180.9188**

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
Total		**73.0260**	**4.3157**	**0.0000**	**180.9188**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

BIOLOGICAL RESOURCES SPECIES TABLES

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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[1] 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.

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[1] 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
Abronia villosa var. *aurita*	**Chaparral sand-verbena**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Aphanisma blitoides	**Aphanisma**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Astragalus pycnostachyus var. *lanosissimus*	**Ventura marsh milk-vetch**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Atriplex coulteri	**Coulter's saltbush**	US: – CA: 1B	Alkaline or clay soils in ocean bluffs and ridge tops and alkaline low	Blooms March through October	**Not Expected.** 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 *Atriplex serenana* ssp. *davidsonii* (*The Vascular Plants of Western Riverside County, California*. F.M. Roberts et al., 2004).	(perennial herb)	habitat is absent on the project site.
Atriplex pacifica	**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 *Atriplex serenana* ssp. *davidsonii* (*The Vascular Plants of Western Riverside County, California*. F.M.	Blooms March through October (annual herb)	**Not Expected.** 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).		
Atriplex parishii	**Parish's brittlescale**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Atriplex serenana var. *davidsonii*	**Davidson's saltscale**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Calochortus weedii var. *intermedius*	**Intermediate mariposa lily**	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 (*The Vascular Plants of Western*	Blooms May through July (perennial herb)	**Not Expected.** 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
			Riverside County, California. F.M. Roberts et al., 2004). Appears to intergrade with *Calochortus plummerae*, which is mostly east and north of Santa Ana Mountains.		
Calystegia felix	**Lucky morning-glory**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Centromadia parryi ssp. *australis*	**Southern tarplant**	US: – CA: 1B NCCP: NC CNPS: 1B.1	In vernally 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)	**Not Expected.** 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.		
Chloropyron maritimus spp. *maritimus*	**Salt marsh bird's beak**	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 C. maritimus ssp. canescens. Also occurs in Mexico.	Blooms May through October (annual herb)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Dudleya multicaulis	**Many-stemmed dudleya**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Dudleya stolonifera	**Laguna Beach dudleya**	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)	**Not Expected.** 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
Eryngium aristulatum var. *parishii*	**San Diego button-celery**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Helianthus nuttallii ssp. *parishii*	**Los Angeles sunflower**	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 *H. nuttallii* and *H. californicus*, 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)	**Not Expected.** 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
Isocoma menziesii var. *decumbens*	**Decumbent goldenbush**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Lasthenia glabrata ssp. *coulteri*	**Coulter's goldfields**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Nama stenocarpum	**Mud nama**	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)	**Not Expected.** 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
Nasturtium (Rorippa) gambelii	**Gambel's watercress**	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	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Navarretia prostrata	**Prostrate vernal pool navarretia**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Nemacaulis denudata var. *denudata*	**Coast woolly-heads**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Orcuttia californica	**California Orcutt grass**	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)	**Not Expected.** 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
Pentachaeta lyonii	**Lyon's pentachaeta**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Phacelia stellaris	**Brand's star phacelia**	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)	**Not Expected.** 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
Ribes divericatum var. *parishii*	**Parish's gooseberry**	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	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Sagittaria sanfordii	**Sanford's arrowhead**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Sidalcea neomexicana	**Salt Spring checkerbloom**	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)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.
Suaeda esteroa	**Estuary seablite**	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)	**Not Expected.** 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
Symphyotrichum defoliatum	**San Bernardino aster**	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 (*The Vascular Plants of Western Riverside County, California*. F.M. Roberts et al., 2004).	Blooms July through November (perennial herb)	**Not Expected.** There are no known occurrences in the vicinity of the project site and suitable habitat is absent on the project site.

[1] 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
CNDDB = California Natural Diversity Database
CNPS = California Native Plant Society
ft = foot/feet
US = United States

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
Plants			
Astragalus pycnostachyus var. lanosissimus **Ventura marsh milk-vetch**	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.	**Absent.** No salt marshes or sandy bluffs on site.
Chloropyron maritimum spp. maritimum **Salt marsh bird's-beak**	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 C. maritimus ssp. canescens. Also occurs in Mexico.	**Absent.** No coastal dunes or marshes on site.
Eryngium aristulatum var. parishii **San Diego button-celery**	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.	**Absent.** No vernal pools on site.
Nasturtium (Rorippa) gambelii **Gambel's watercress**	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.	**Absent**. No marshes on site.
Orcuttia californica **California Orcutt grass**	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.	**Absent.** No vernal pools on site.
Pentachaeta lyonii **Lyon's pentachaeta**	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,	**Absent.** Site is not within species range.

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
		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.	
Invertebrates			
Bombus crotchii **Crotch bumble bee**	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.	**Absent.** No suitable vegetation on site.
Branchinecta sandiegonensis **San Diego fairy shrimp**	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.	**Absent.** No vernal pools on site.
Euphydryas editha quino **Quino checkerspot butterfly**	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.	**Absent.** No suitable vegetation (coastal sage scrub or chaparral).
Streptocephalus woottoni **Riverside fairy shrimp**	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.	**Absent.** 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
Fish			
Oncorhynchus mykiss irideus **Southern steelhead - Southern California**	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.	**Absent.** No streams on site.
Reptiles			
Chelonia mydas **green turtle**	US: FT CA: -	Marine. Completely herbivorous; needs adquate supply of seagrasses and algae.	**Absent.** No suitable habitat on site.
Birds			
Agelaius tricolor (nesting colony) **Tricolored blackbird**	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.	**Absent.** No suitable wet areas or other habitat on site.
Buteo swainsoni (nesting) **Swainson's hawk**	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.	**Absent**. 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
Charadrius alexandrinus nivosus (nesting) **Western snowy plover**	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.	**Absent.** No suitable habitat on site.
Coccyzus americanus occidentalis (nesting) **Western yellow-billed cuckoo**	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.	**Absent.** No riparian habitat on site.
Empidonax traillii extimus **Southwestern willow flycatcher**	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.	**Absent.** No extensive stands of riparian habitat on site.
Laterallus jamaicensis coturniculus **California black rail**	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.	**Absent.** No salt marshes, freshwater marshes, wet meadows, or flooded areas on site.
Passerculus sandwichensis beldingi **Belding's savannah sparrow**	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.	**Absent.** No suitable habitat on site.
Polioptila californica californica **Coastal California gnatcatcher**	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.	**Absent.** No suitable coastal sage scrub on site.
Rallus obsoletus levipes **light-footed Ridgway's rail**	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.	**Absent.** No suitable habitat 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
Riparia riparia (nesting) **Bank swallow**	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.	**Absent.** No streams and rivers on site.
Sternula antillarum browni (nesting colony) **California least tern**	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.	**Absent.** No suitable habitat on site.
Vireo bellii pusillus **Least Bell's vireo**	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.	**Absent.** No suitable habitat on site.
Mammals			
Perognathus longimembris pacificus **Pacific pocket mouse**	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.	**Absent.** Site is highly disturbed, within an urban environment and isolated from better habitat.

APPENDIX D

CULTURAL SURVEY RESULTS

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LSA

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

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.

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

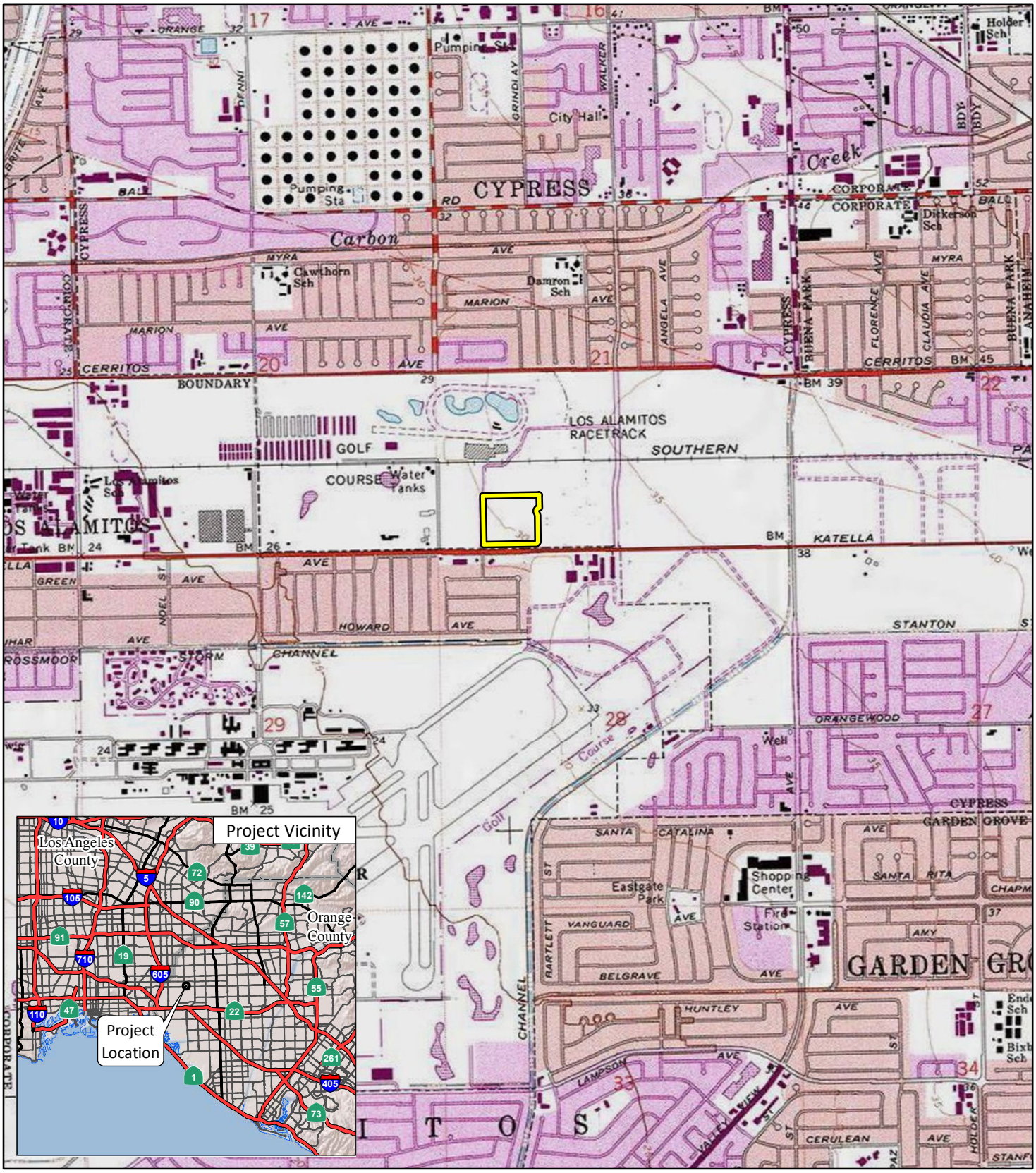


FIGURE 1

Cypress City Center Project

Project Location and Vicinity

SOURCE: USGS 7.5' Quad - *Los Alamitos, CA* (1981)

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LSA

LEGEND

Project Site

FIGURE 2

N

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, Abandoment 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

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NMG Geotechnical, Inc.

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 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)	
		April 16, 2019	*May 21, 2019*
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)







0 375 750 Feet

1 inch = 750 feet

N

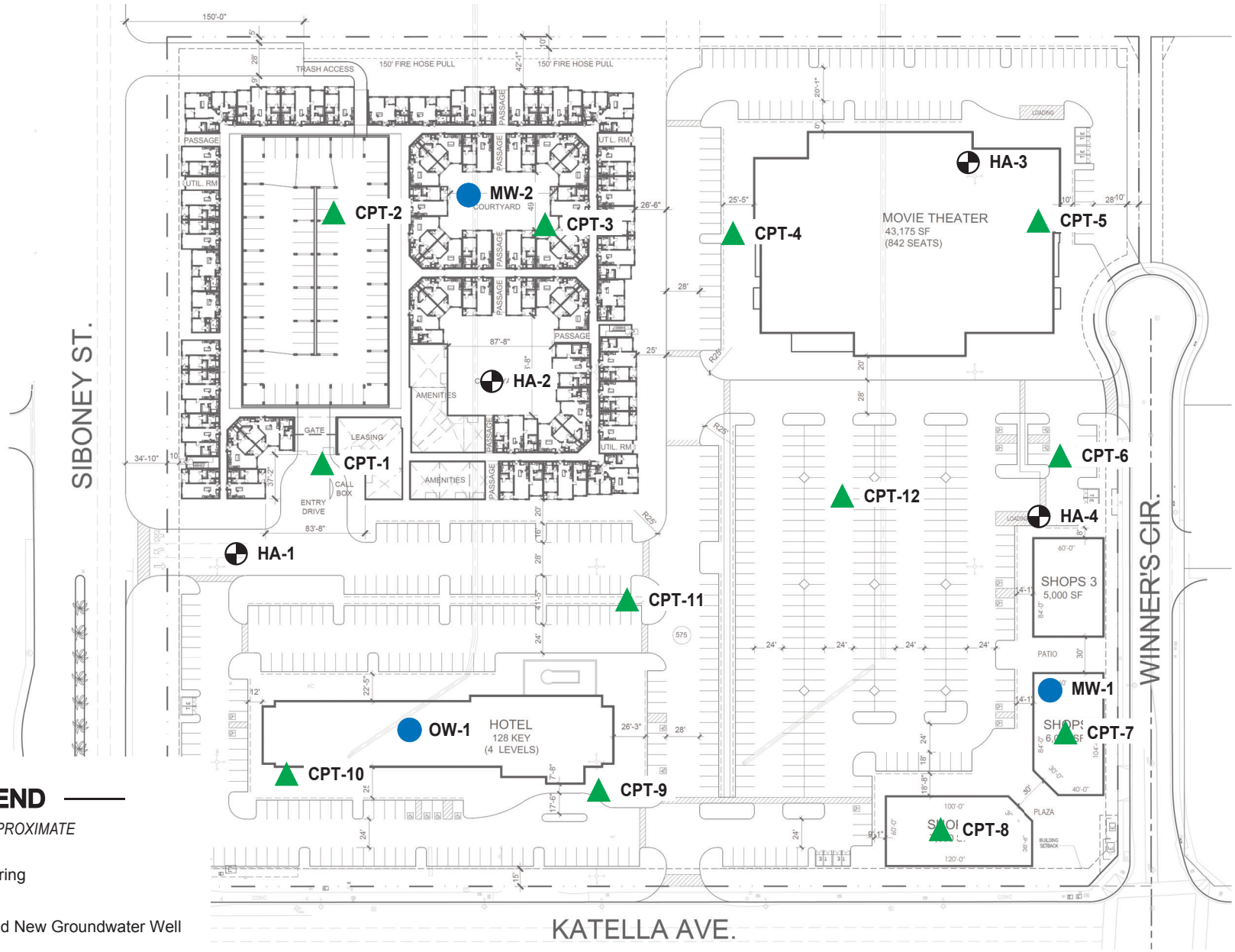
SITE LOCATION MAP

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

NMG

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LEGEND

LOCATIONS ARE APPROXIMATE

HA-4	Auger Boring
OW-1	Boring and New Groundwater Well
MW-2	Existing Groundwater Well
CPT-12	Previous Cone Penetration Test (Leighton, 2017)

BORING, WELL AND CPT LOCATION MAP

PROPOSED MIXED-USE DEVELOPMENT
SIBONEY STREET AND KATELLA AVENUE
CITY OF CYPRESS, CALIFORNIA

Project Number: 19046-01

Project Name: Shea Prop / Cypress

Date: 6/13/19 Figure 2

NMG Geotechnical, Inc.

APPENDIX A

APPENDIX A

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APPENDIX A

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AERIAL PHOTOGRAPHS REVIEWED

Date	*Flight*	*Photo No.*	*Scale (1"=)*	*Source*
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
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	*GRAVEL AND GRAVELLY SOILS* MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	*CLEAN GRAVELS* (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	*CLEAN SANDS* (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	*SILTS AND CLAYS*	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE 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

1. 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.
2. 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

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

OW-1

Sheet 1 of 1

Total Depth Drilled (ft)	**20.0**
Approximate Ground Surface Elevation (ft)	**31.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					ML-CL	Surface: 2" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 1'-5': Dark brown clayey SILT/silty CLAY, moist.			B-1 @ 1'-5' EI, CC
			B-1							
	5		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				▽			
	15		D-4	9		ML	@ 15': Grayish brown clayey/sandy SILT, saturated, medium stiff, micaceous.	22.0	102.7	
			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						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.			
10	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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			

HA-1

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**31.5 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					CL	Surface: 3" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 0.5'-3': Brown to dark brown silty CLAY, very moist.			B-1 @ 1'-5' RV, EI, CC
			B-1			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.			
							Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

HA-2

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**31.5 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					CL	Surface: 2.5" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 0.5'-1': Dark brown silty CLAY, very moist.			B-1 @ 1'-5' EI, CC
						SM-SC	@ 1'-5': Grayish brown silty/clayey fine SAND, saturated, micaceous.			
			B-1							
	5		D-1	12		SM	@ 5': Grayish brown silty fine to medium SAND, saturated, loose, micaceous.	21.5	97.1	
							Notes: Total Depth: 6.5 Feet. Groundwater at 4.75 Feet After Drilling. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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			

HA-3

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**32.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	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'
						SM	**Alluvium (Qal)**			
30			B-1				@ 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		
							Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

HA-4

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**32.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					SM	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot. **Alluvium (Qal)** @ 0'-5': Olive brown to light olive brown silty fine SAND, very moist to wet.			B-1 @ 1'-5' RV, EI, CC
			B-1							
	5		D-1	5			@ 5': No Recovery.			
							Notes: Total Depth: 6.5 Feet. Groundwater 4.5 Feet After Drilling. Backfilled with Cuttings and Tamped.			
20	10									
	15									
10	20									
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

APPENDIX C

Shea Properties/Cypress Mixed-Use
Project Number: 19046-01

APPENDIX
SUMMARY OF SOIL LABORATORY DATA

Cypress, California

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		Expansion Index	R-Value	Soluble Sulfate Content (% by wt)	Remarks
															Ultimate		Peak							
Boring No.	Sample No.	Depth (feet)	End Depth (feet)	Elevation (feet)	Blow Count (N)					Fines Content (% pass. #200)	Clay Content (% pass. 2μ)	LL (%)	PI (%)		Cohesion (psf)	Friction Angle (°)	Cohesion (psf)	Friction Angle (°)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)				
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												3		0.05	
OW-1	D-2	7.5			12	113.9	92.0	23.8	77.3															
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															

Sample	Compacted Moisture (%)	Compacted Dry Density (pcf)	Final Moisture (%)	Volumetric Swell (%)	Expansion Index[1] Value/Method		Expansive Classification[2]	Soluble Sulfate (%)	Sulfate Exposure[3]
OW-1 B-1 1-5'	8.5	114.4	16.1	0.33	3	A	Very Low	0.05	S0
HA-1 B-1 1-5'	9.0	112.2	17.9	1.6	16	A	Very Low	0.06	S0
HA-2 B-1 1-5'	9.5	111.2	14.2	0.03	0	A	Very Low	0.05	S0
HA-4 B-1 1-5'	10.0	108.0	15.9	0.06	1	A	Very Low	0.05	S0

Test Method:
ASTM D4829

HACH SF-1 (Turbidimetric)

Notes:
1. Expansion Index (EI) method of determination:
   [A] E.I. determined by adjusting water content to achieve a 50 ±1% degree of saturation
   [B] E.I. calculated based on measured saturation within the range of 40% and 60%
2. ASTM D4829 *(Classification of Expansive Soil)*
3. ACI-318-14 Table 19.3.1.1 *(Requirement for Concrete Exposed to Sulfate-Containing Solutions)*

Expansion Index and Soluble Sulfate Test Results

(FRM001 Rev.5)

Project No. 19046-01

Project Name: Shea / Cypress

NMG

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 $x10^{-4}$)	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.

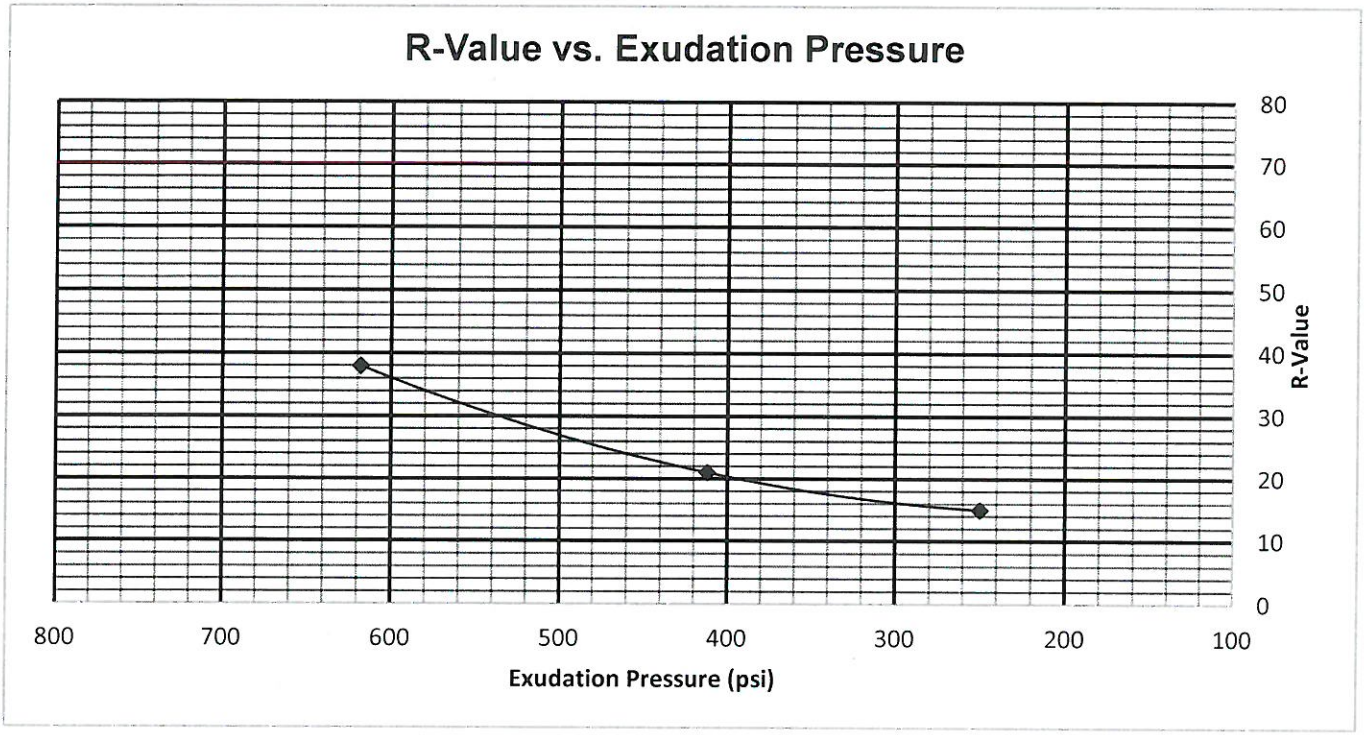
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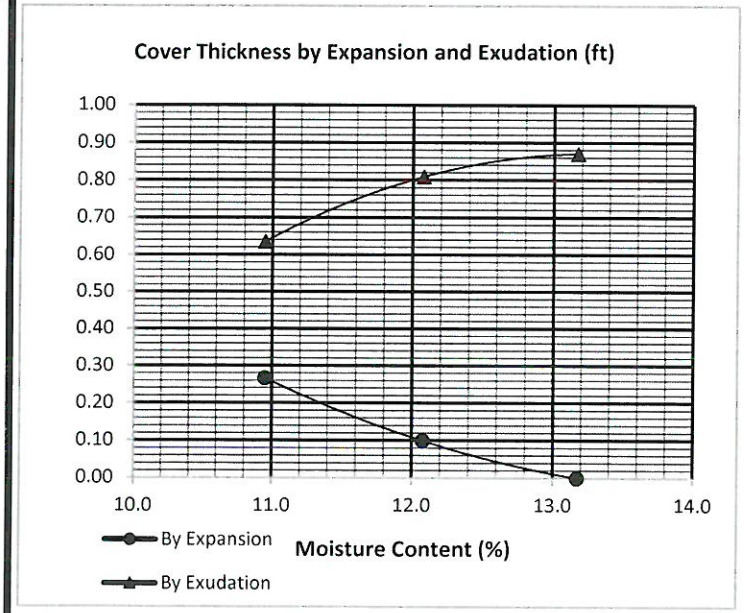
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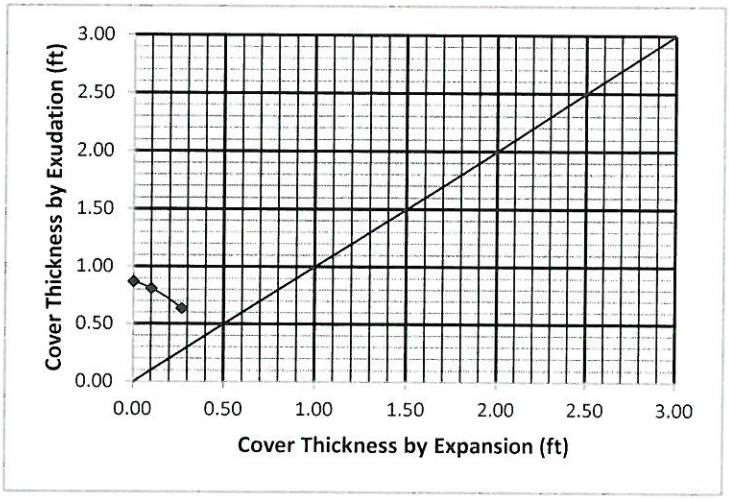
NMG Geotechnical, Inc.

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		







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^{-4})	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.

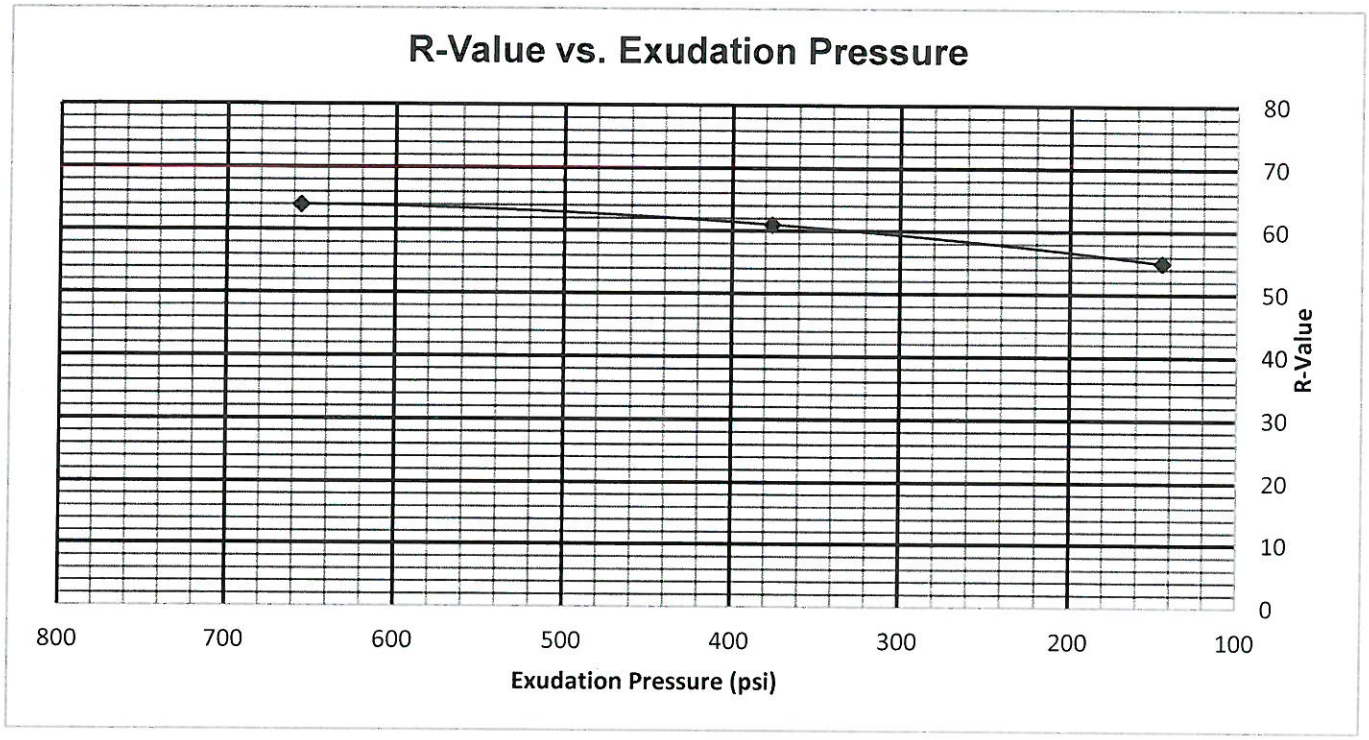
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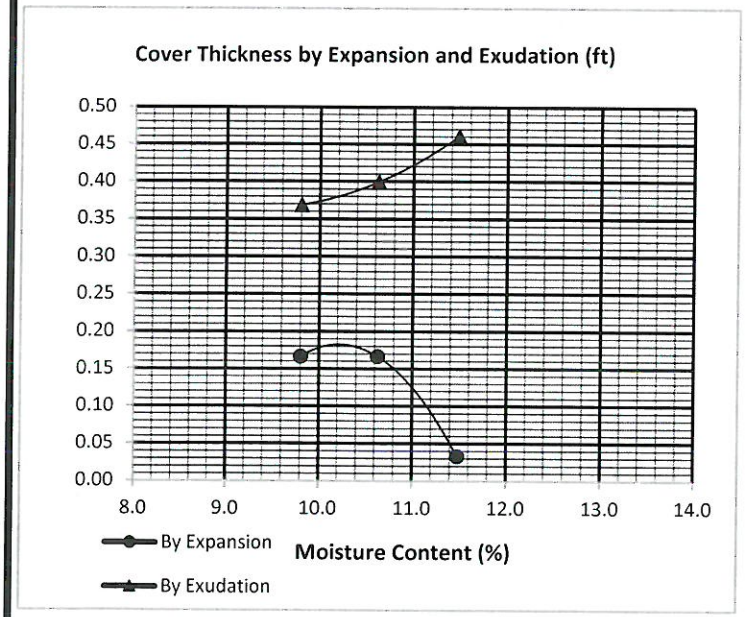
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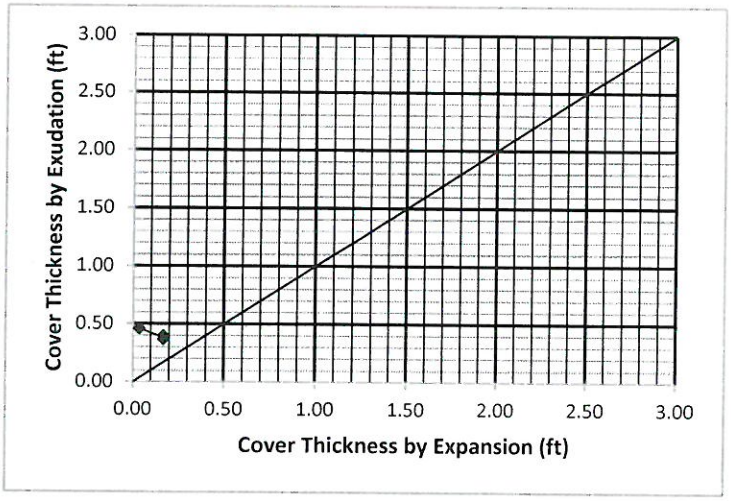
NMG Geotechnical, Inc.

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		







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

NMG Geotechnical, Inc.
17991 Fitch
Irvine, CA 92614

Project title : Shea Properties/Cypress

Location : Cypress, California

Overall vertical settlements report

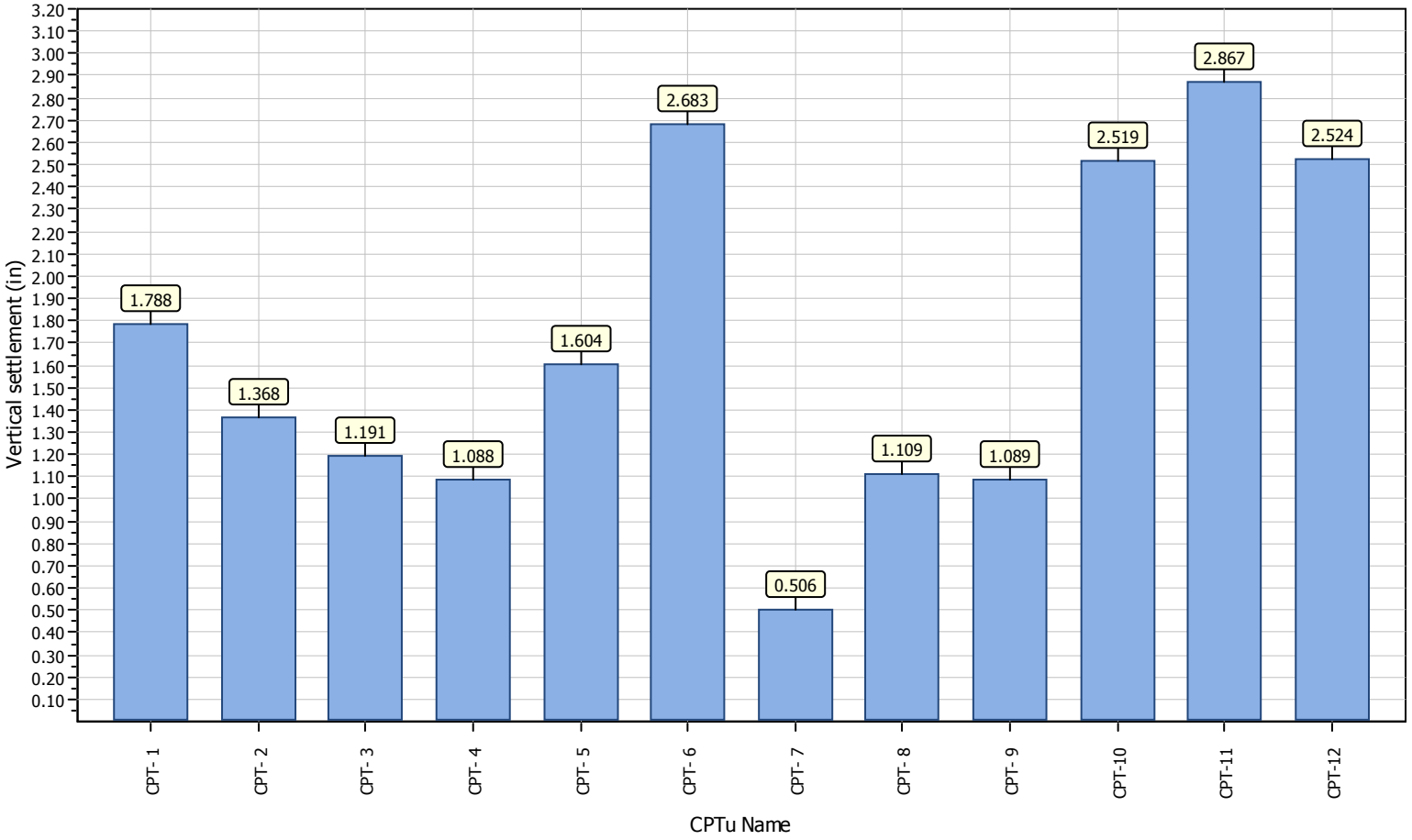


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NMG Geotechnical, Inc.
17991 Fitch
Irvine, CA 92614

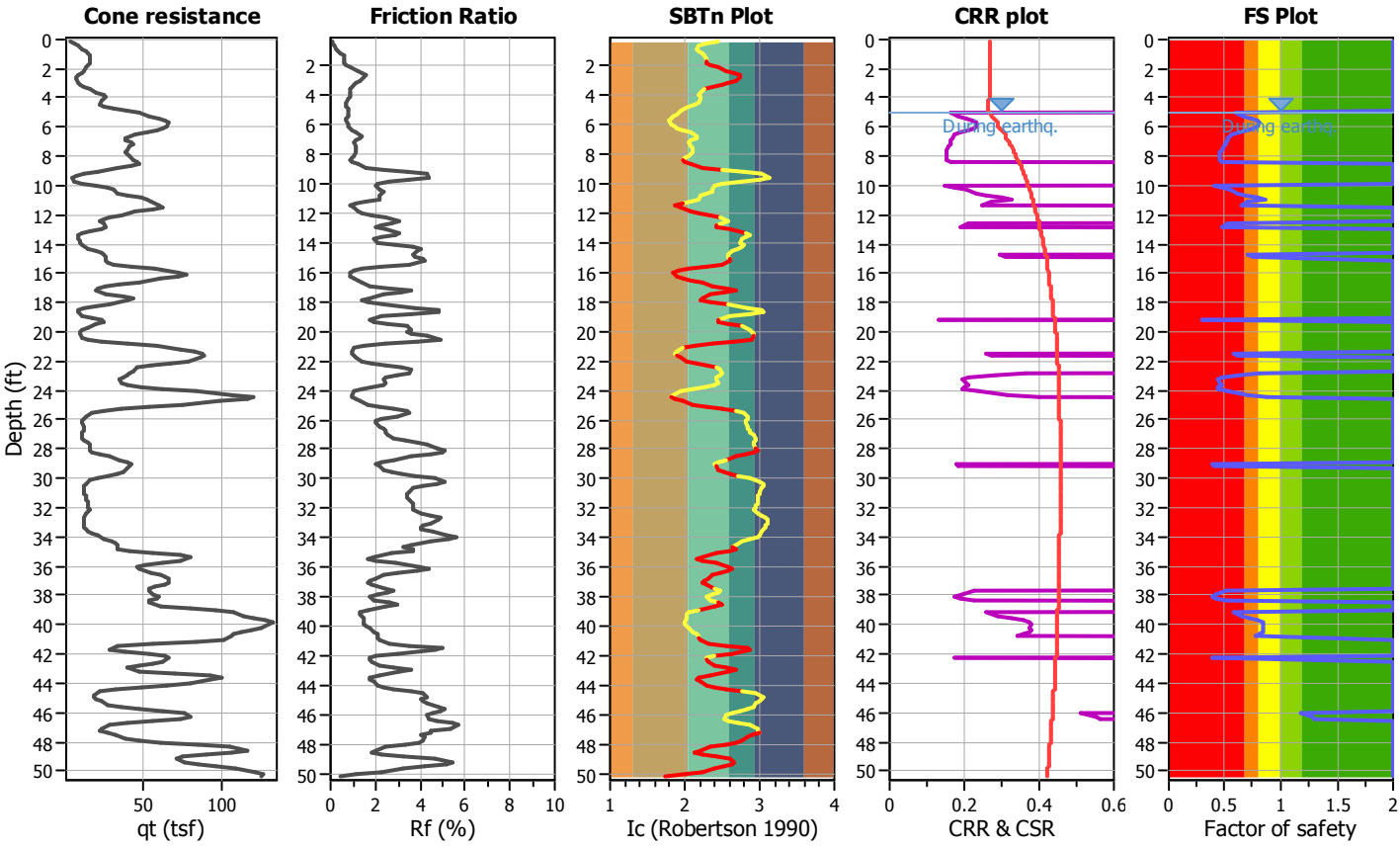
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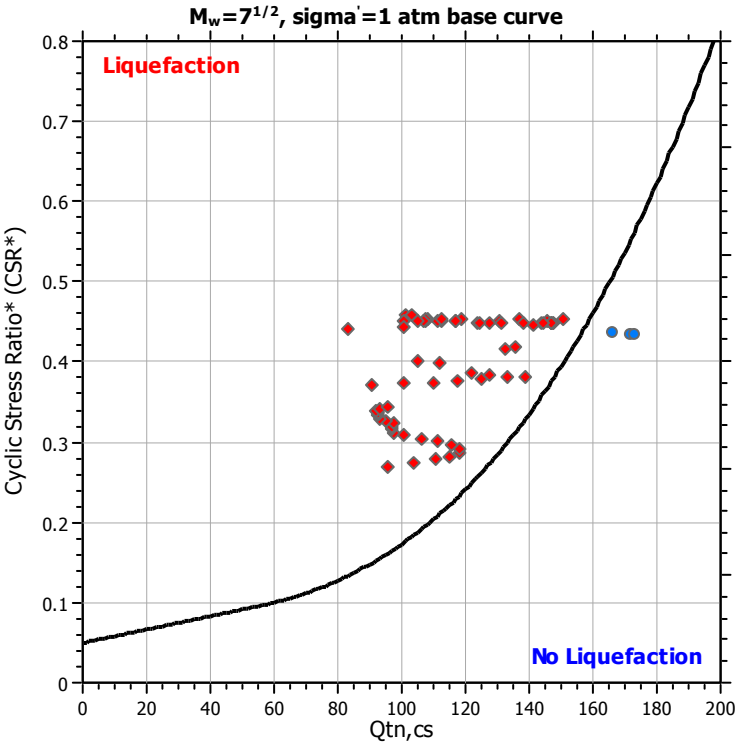
Project title : Shea Properties/Cypress **Location : Cypress, California**

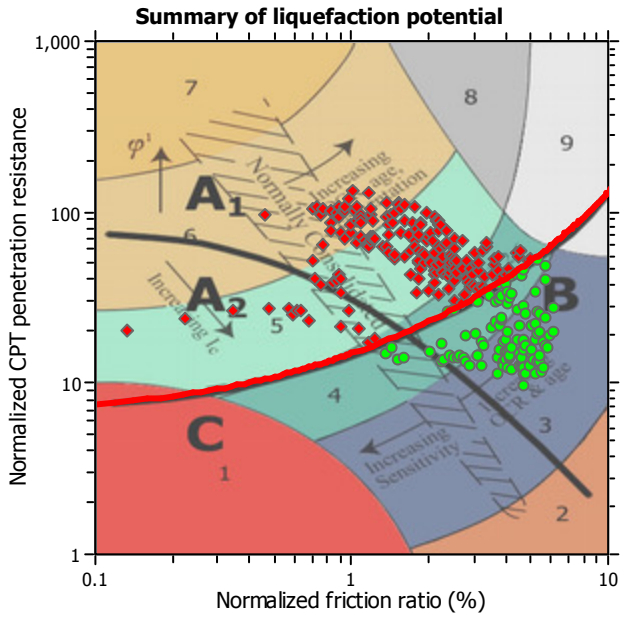
CPT file : CPT- 1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

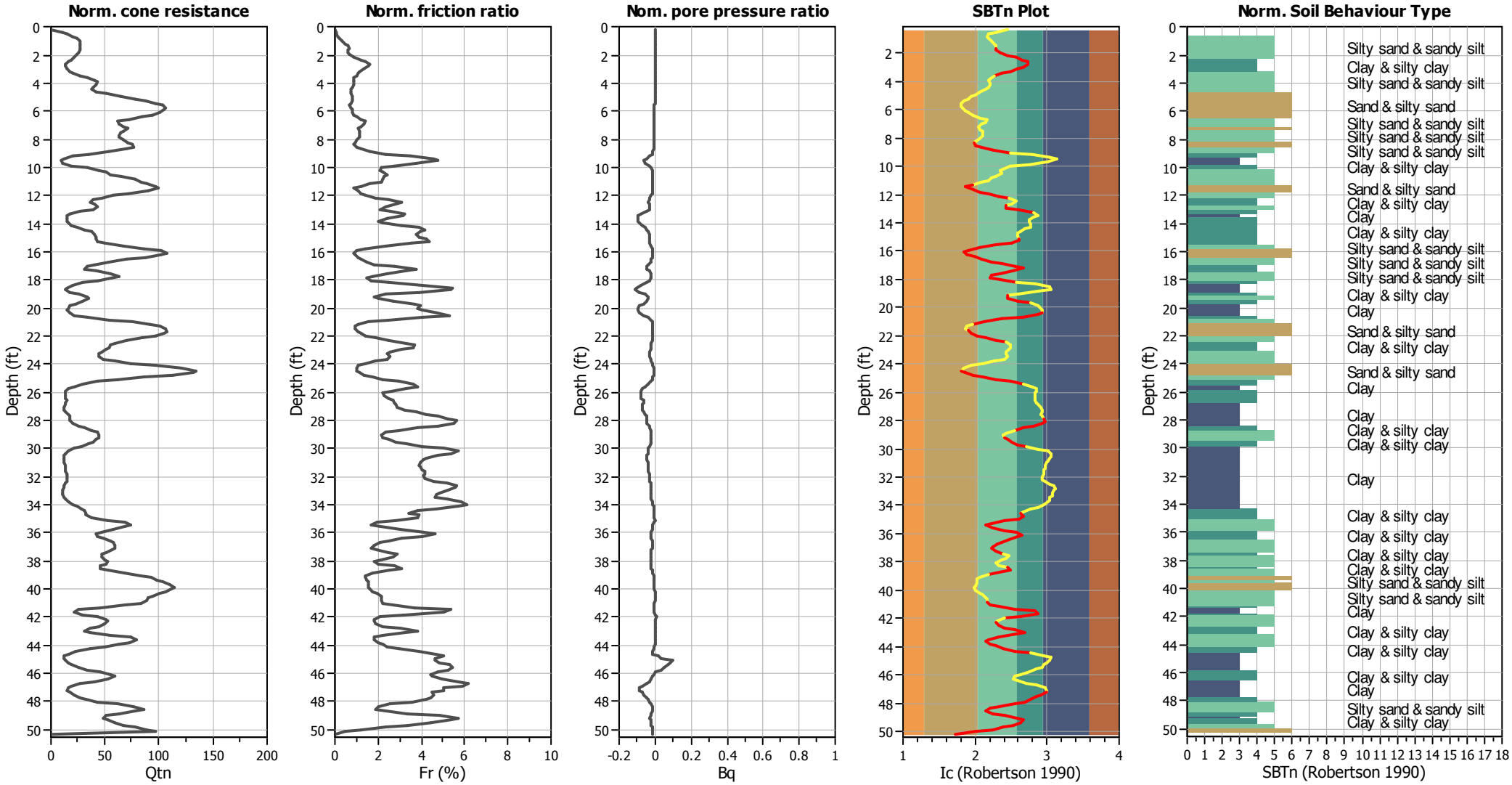






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



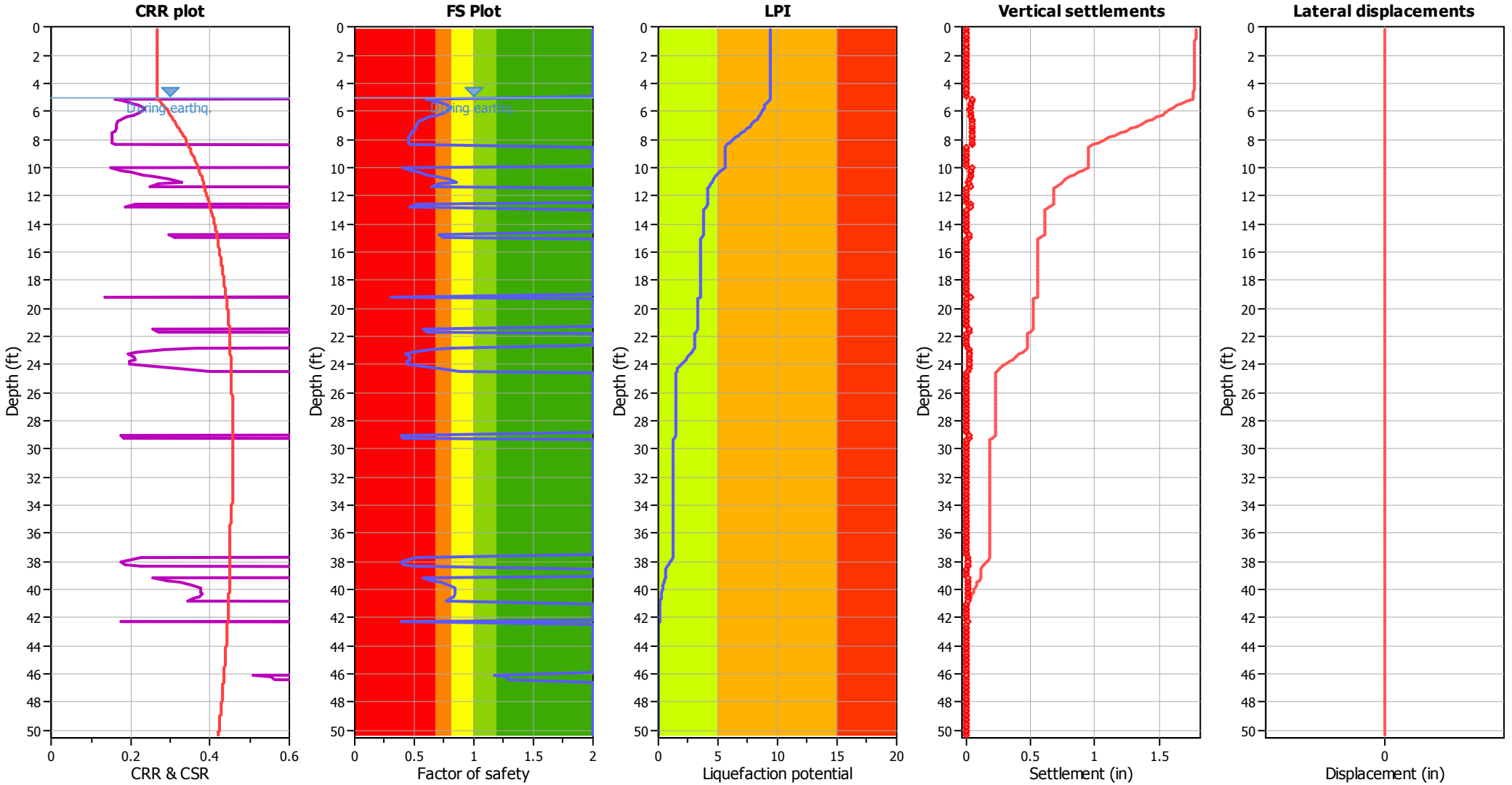
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

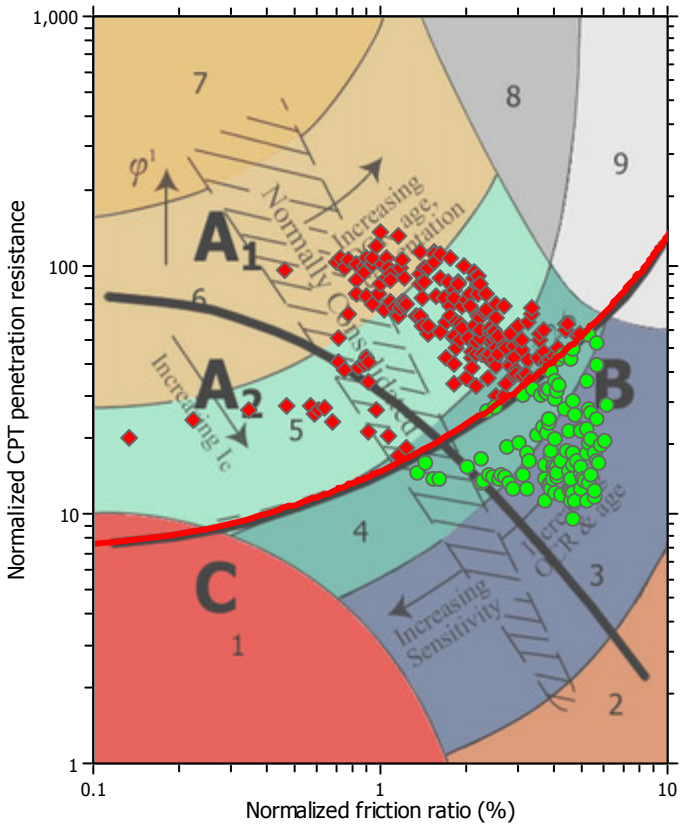
F.S. color scheme

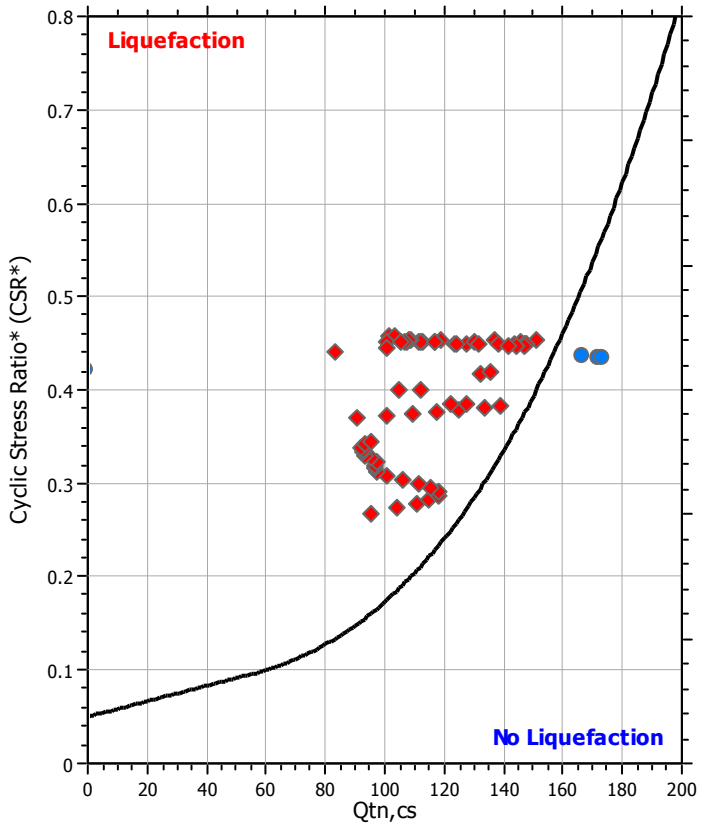
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

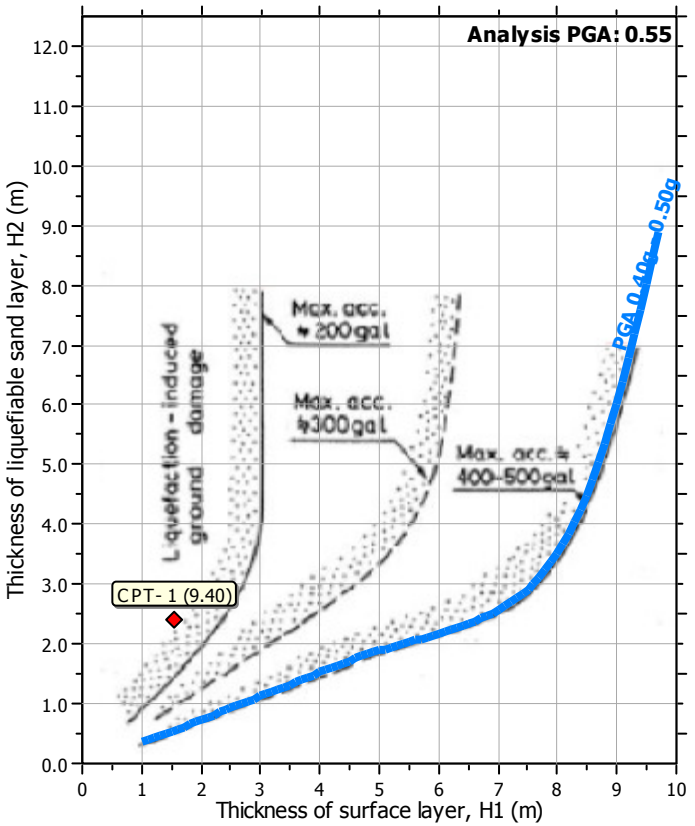
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



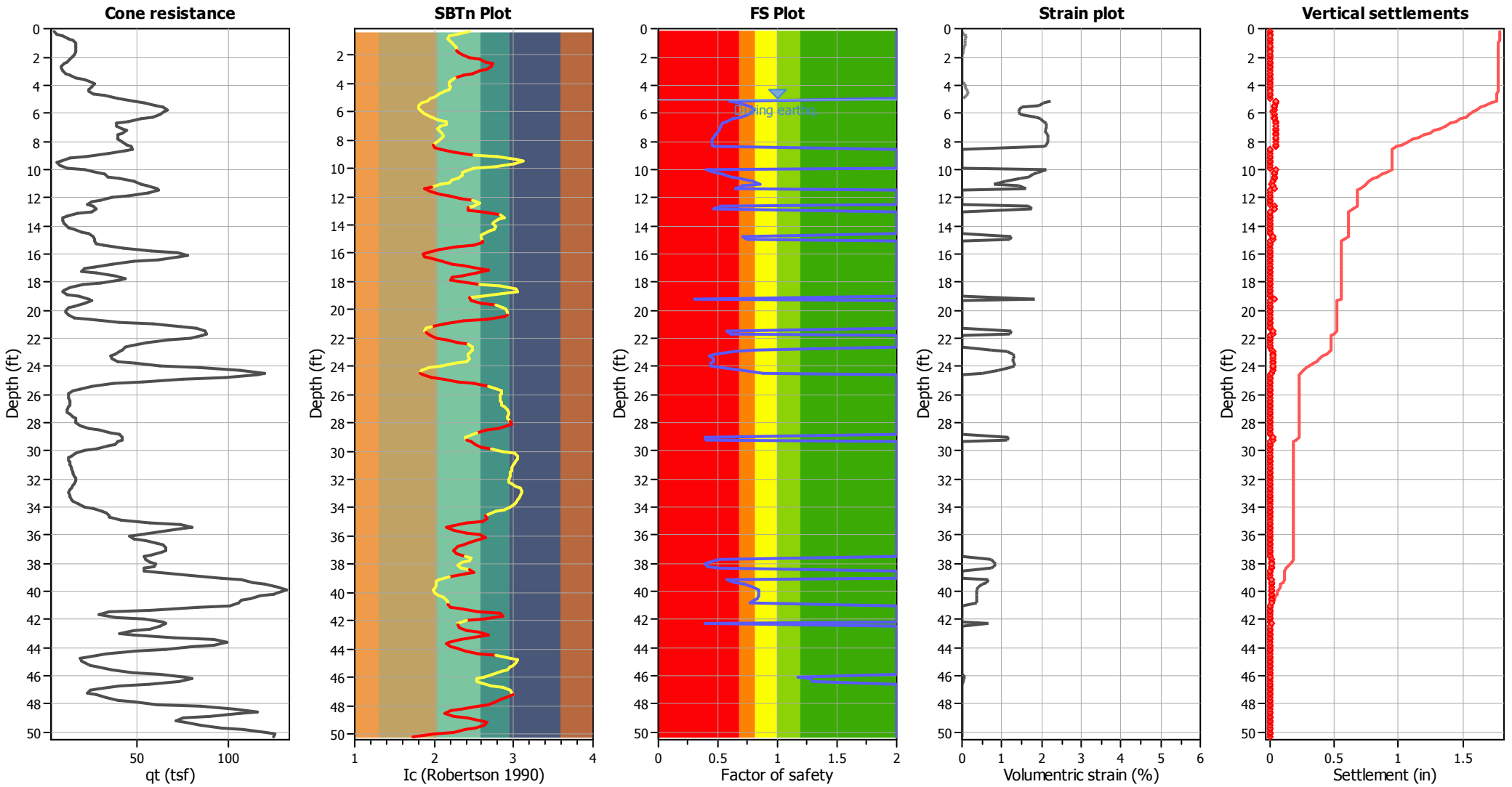




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

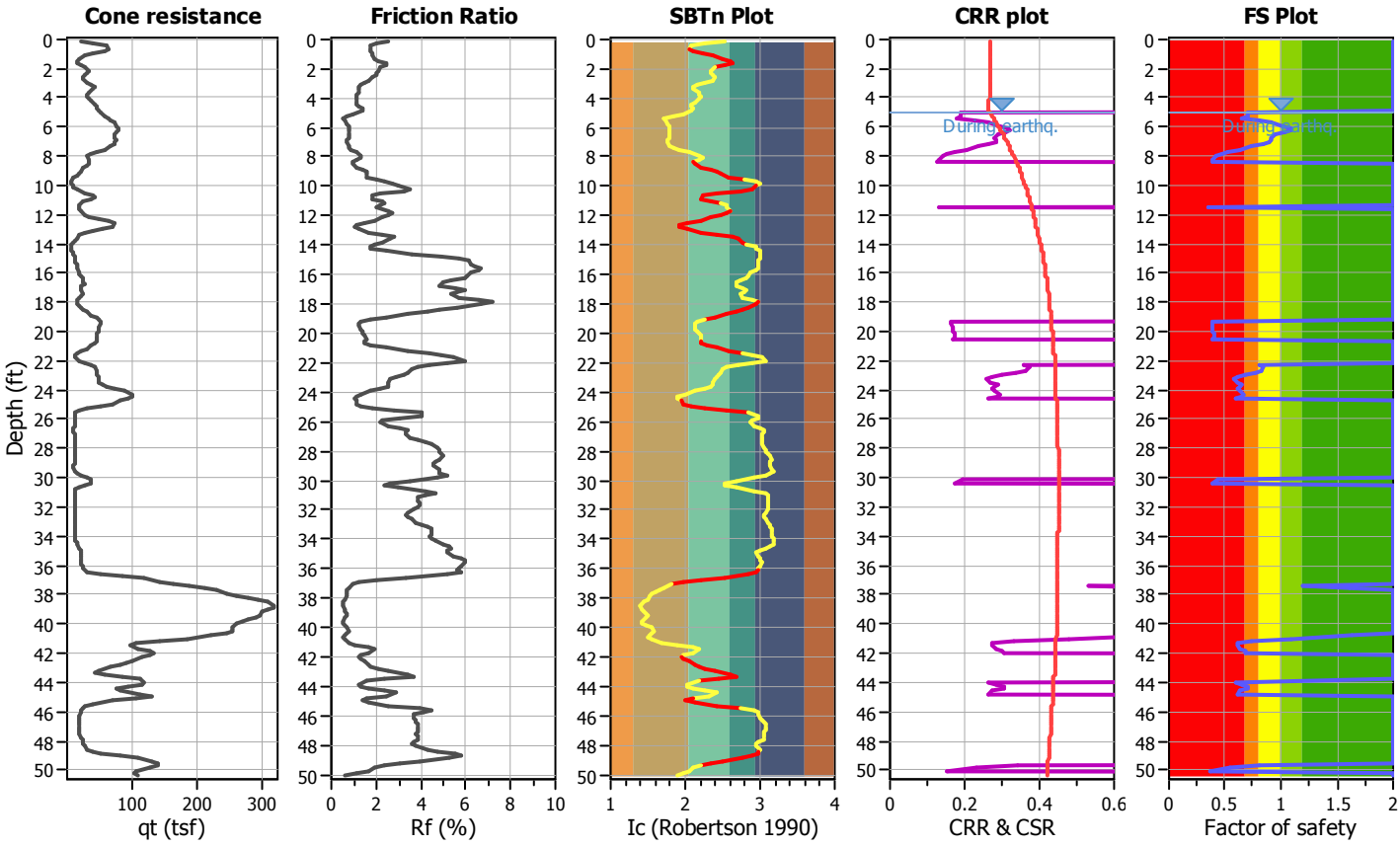
LIQUEFACTION ANALYSIS REPORT

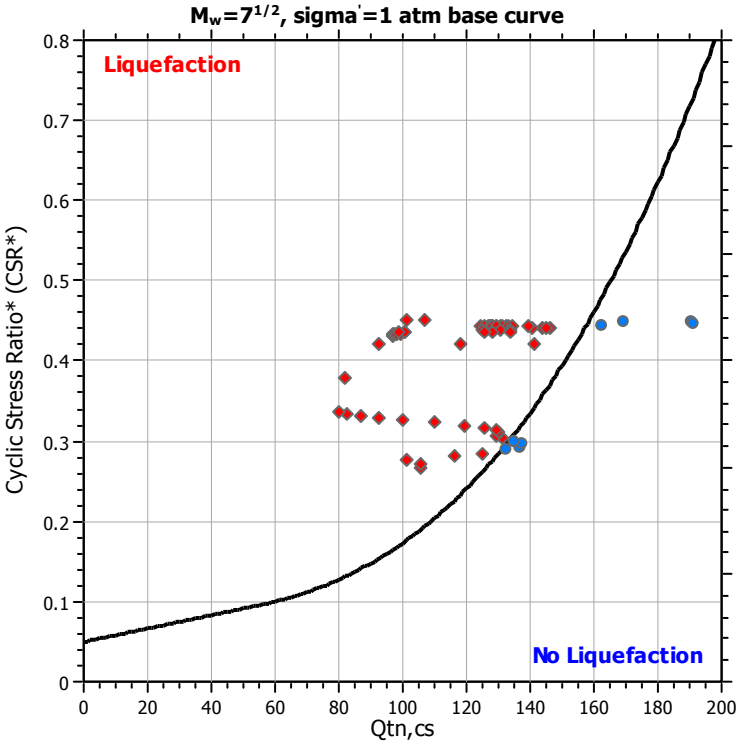
Project title : Shea Properties/Cypress **Location : Cypress, California**

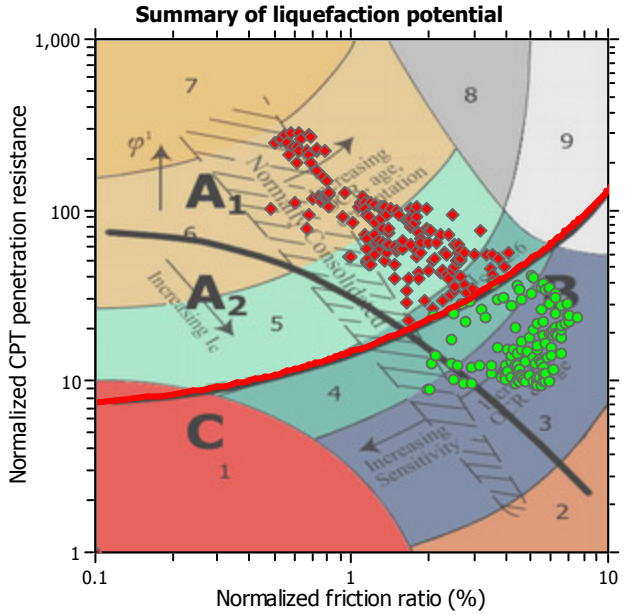
CPT file : CPT- 2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

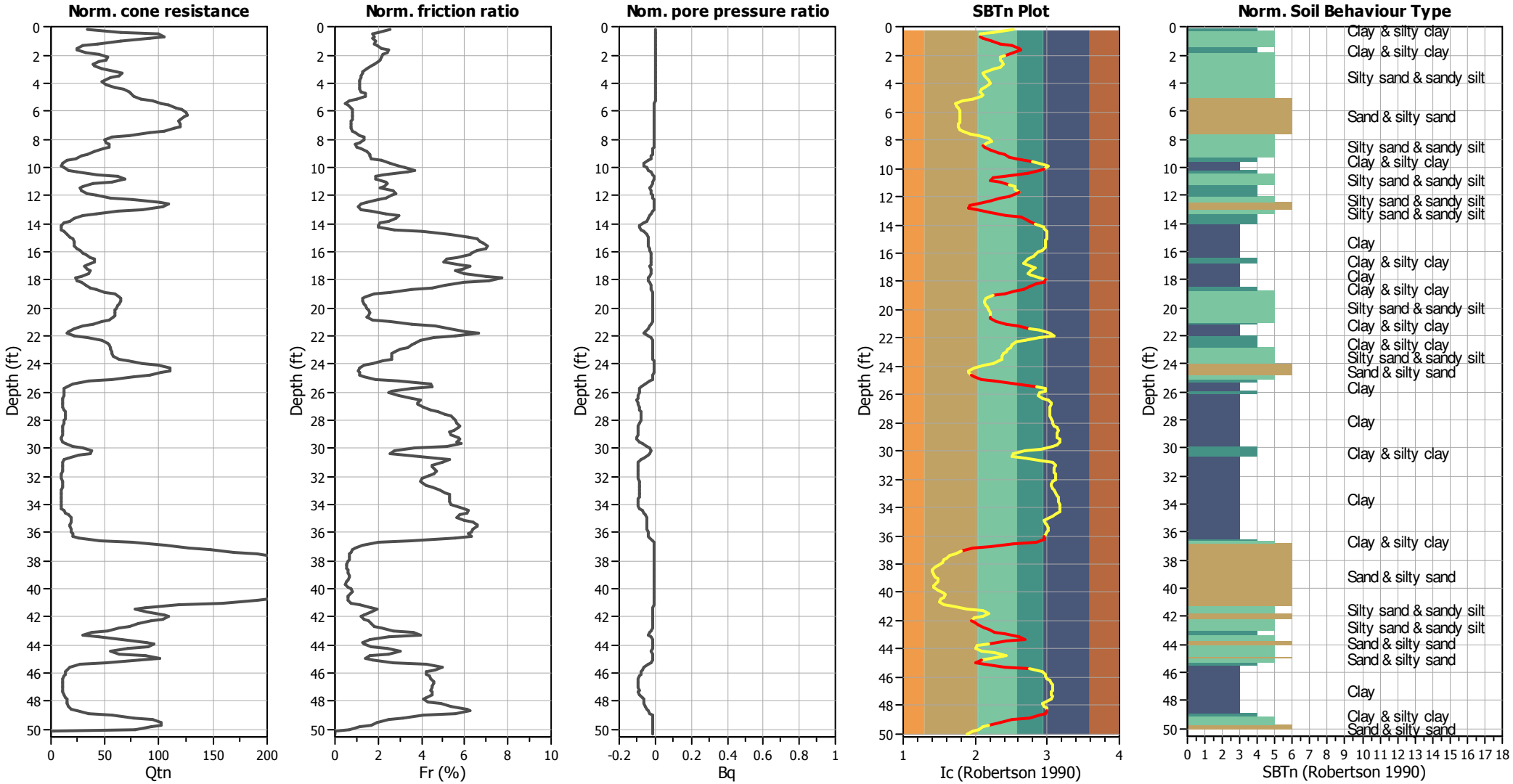






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



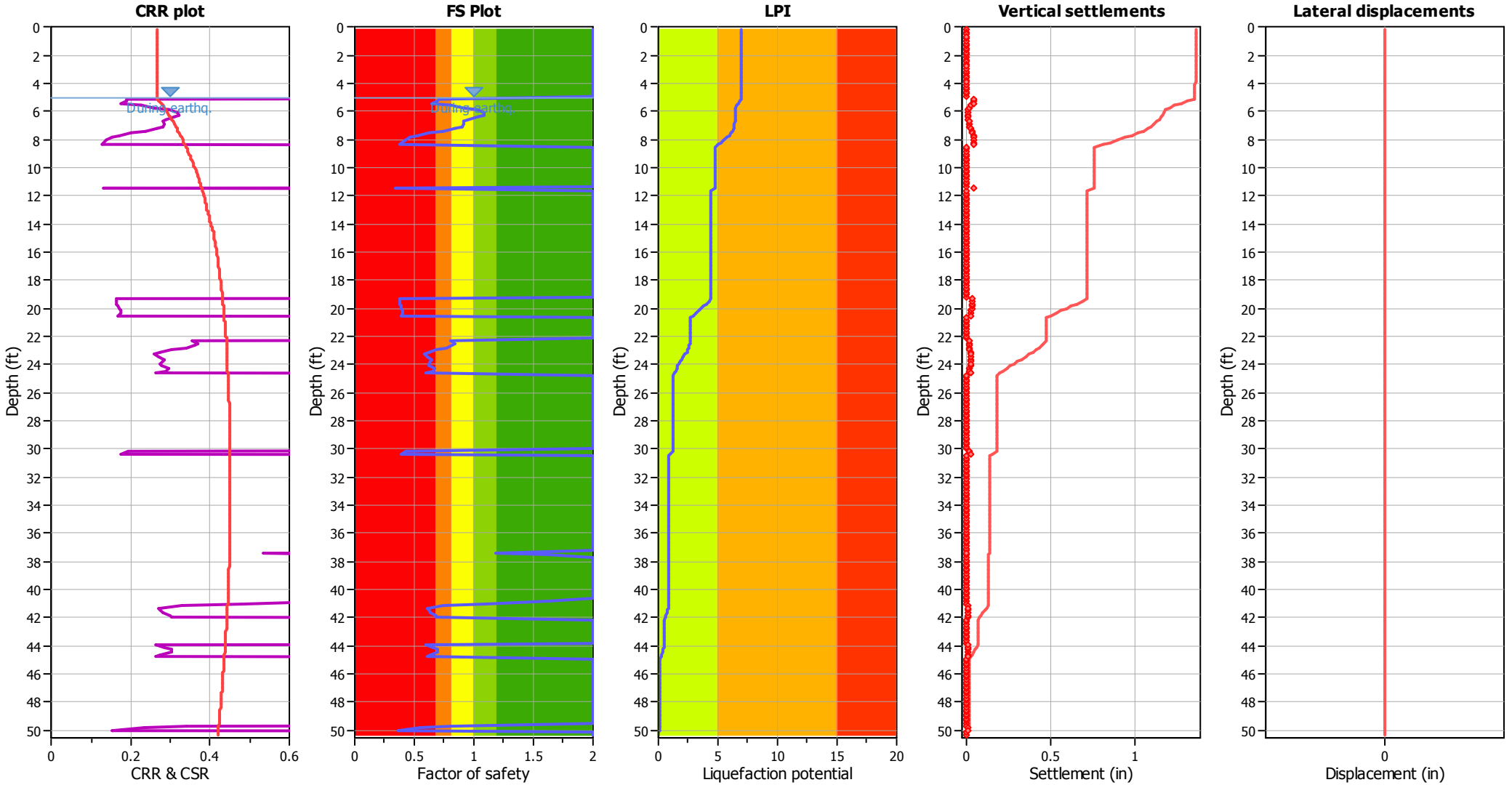
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

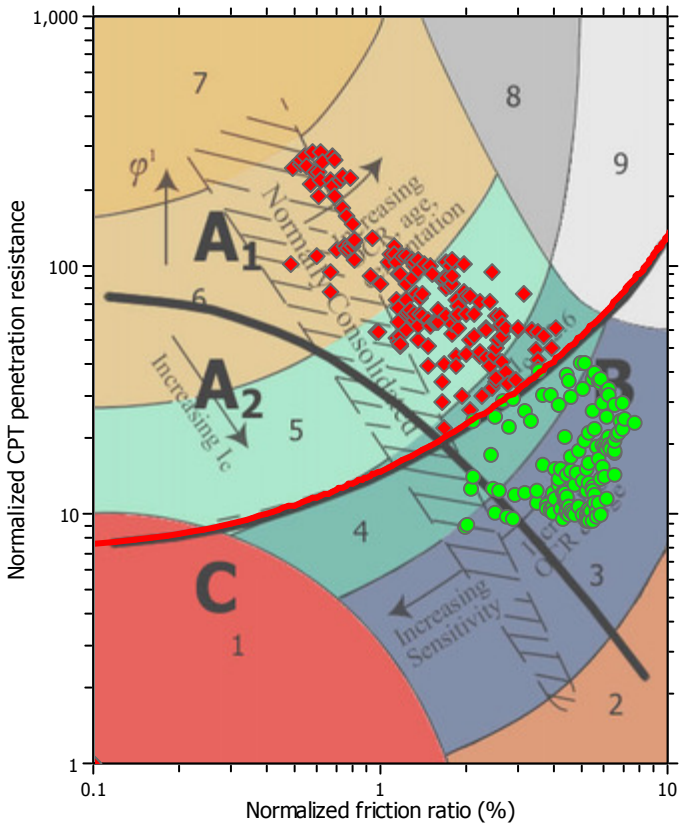
F.S. color scheme

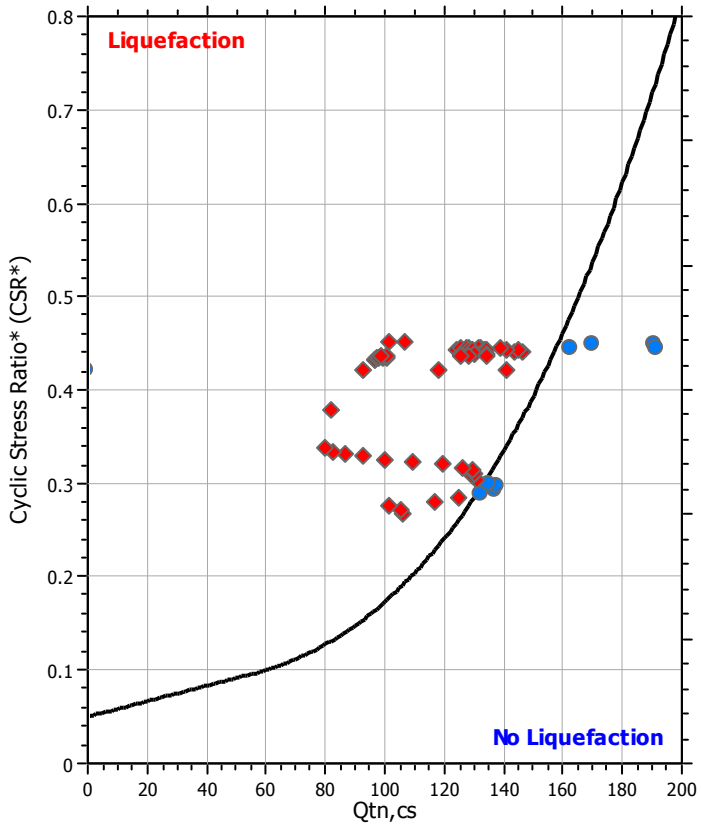
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

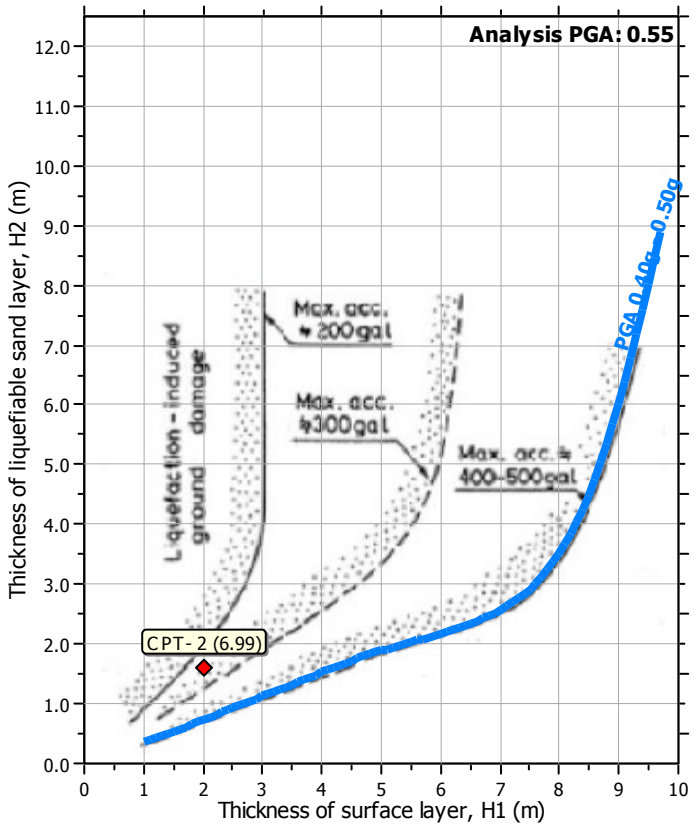
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



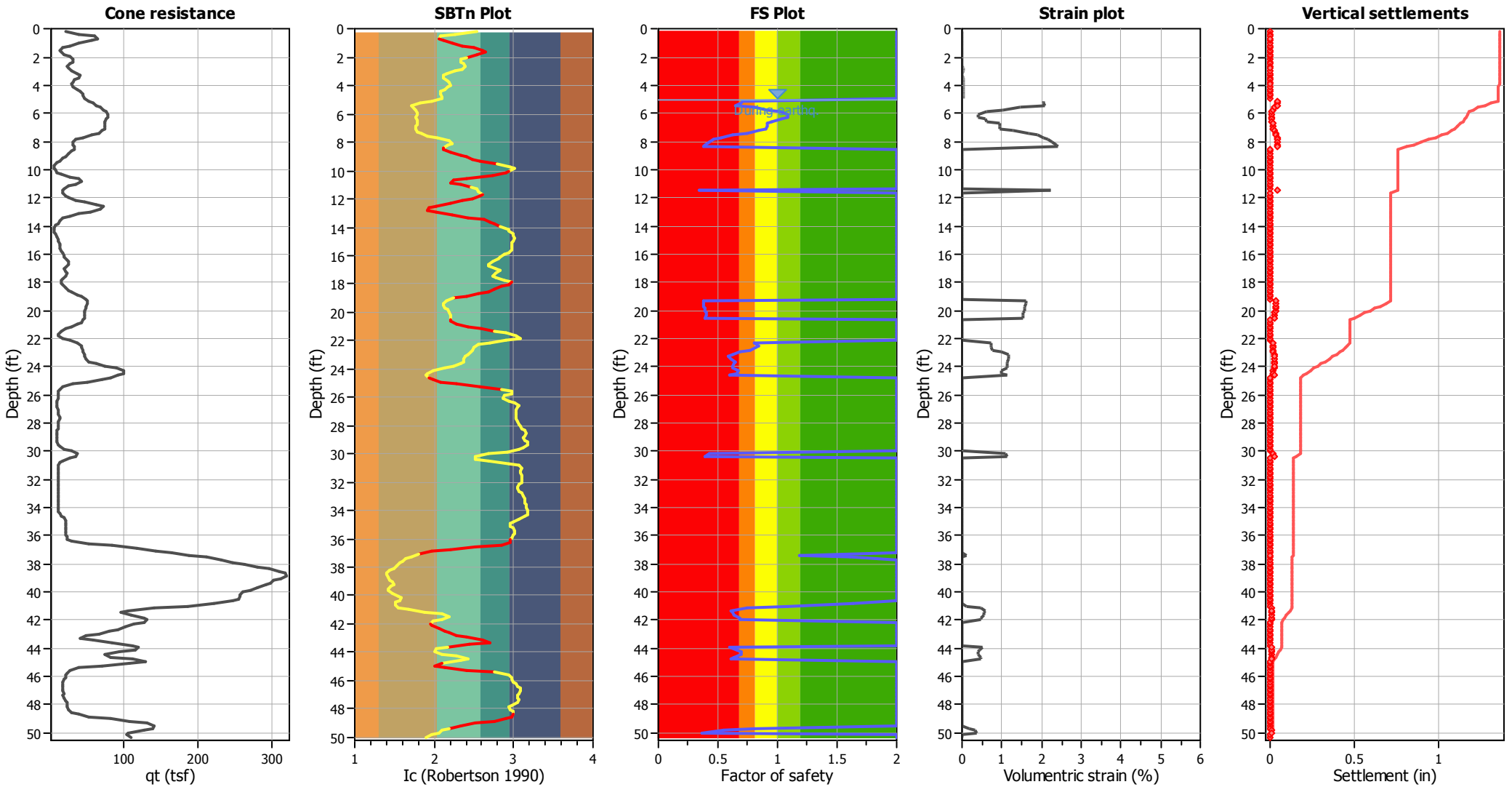




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

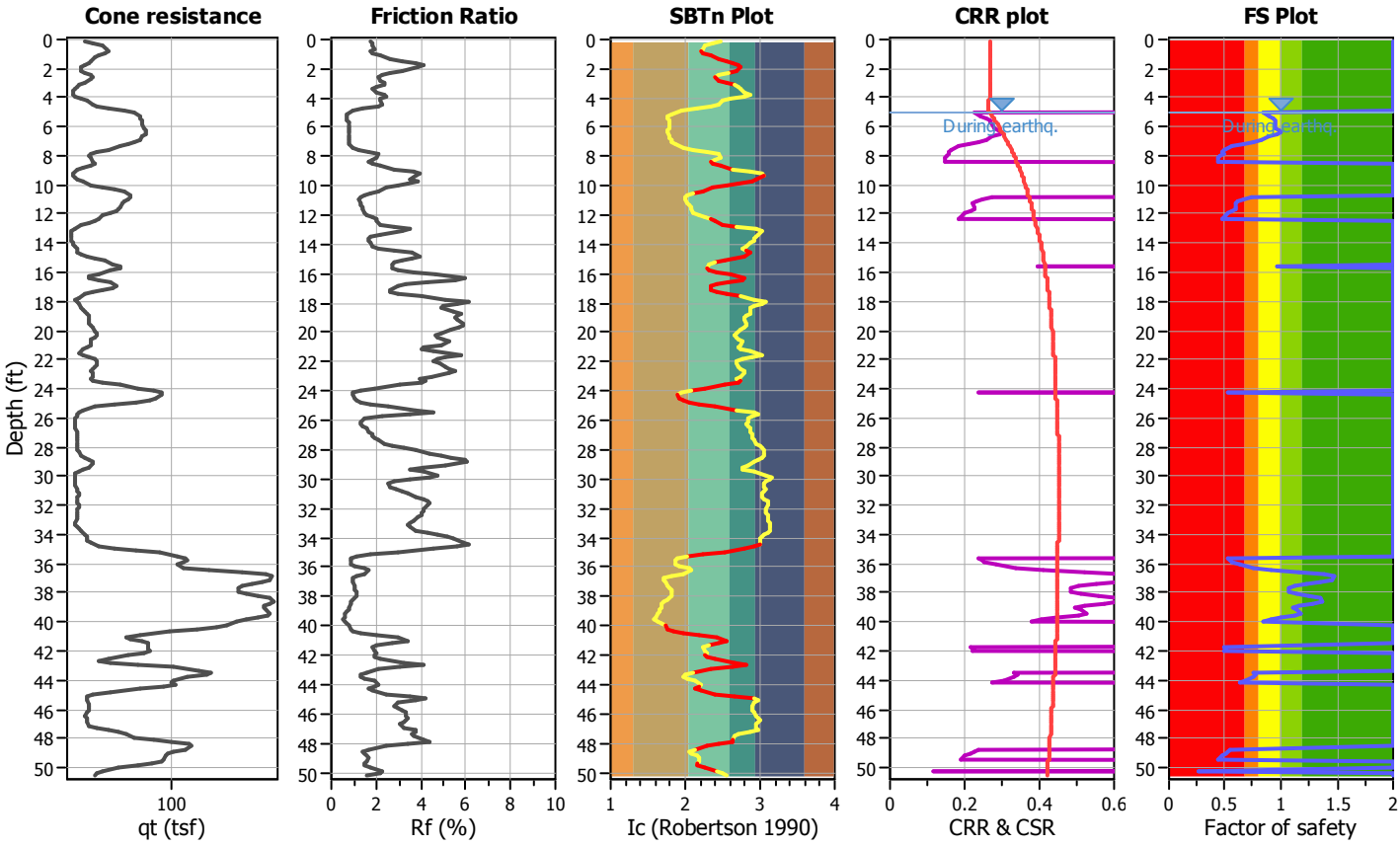
LIQUEFACTION ANALYSIS REPORT

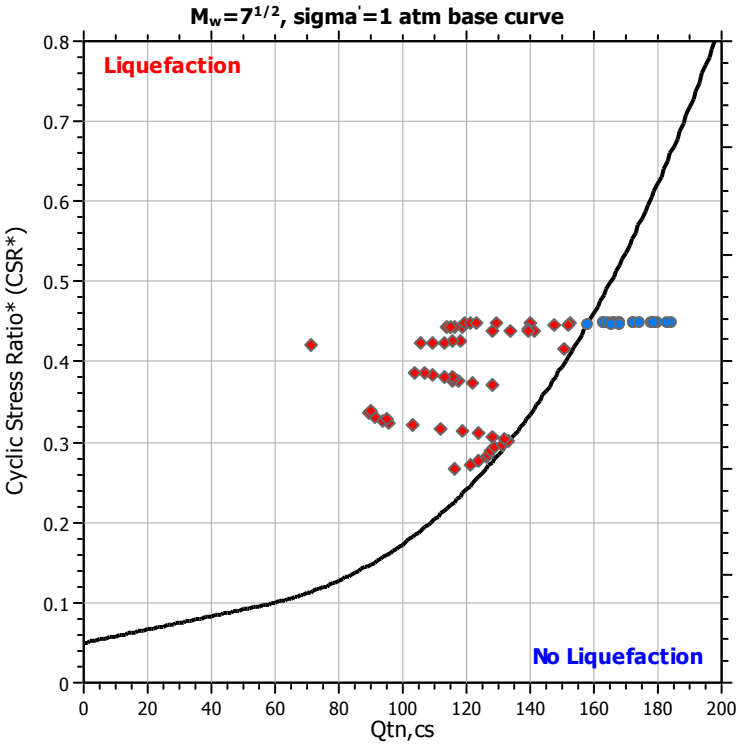
Project title : Shea Properties/Cypress **Location : Cypress, California**

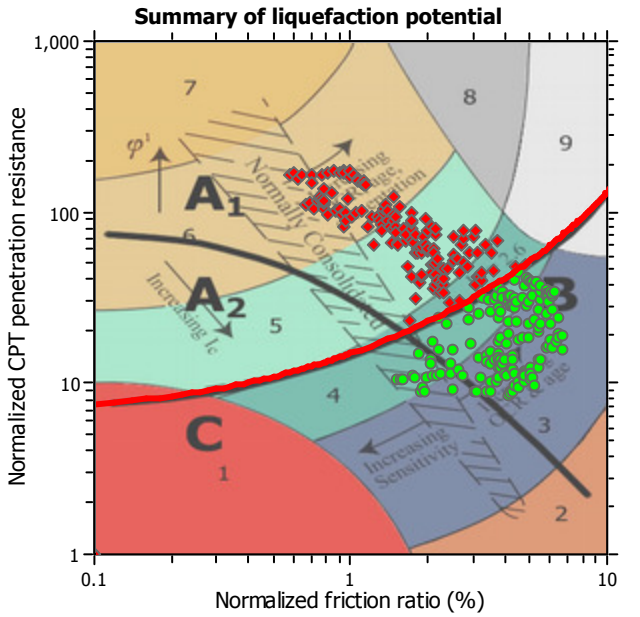
CPT file : CPT- 3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

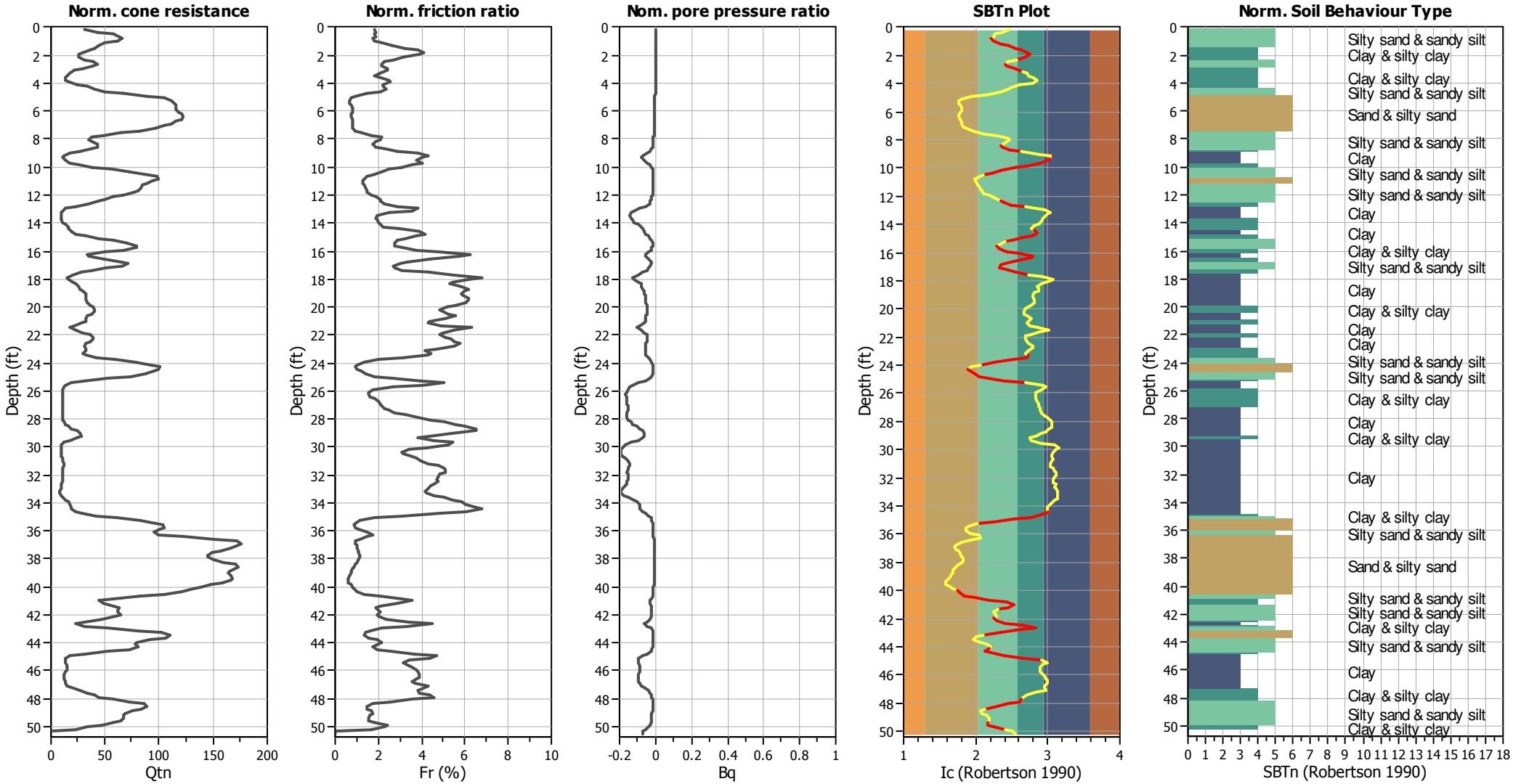






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



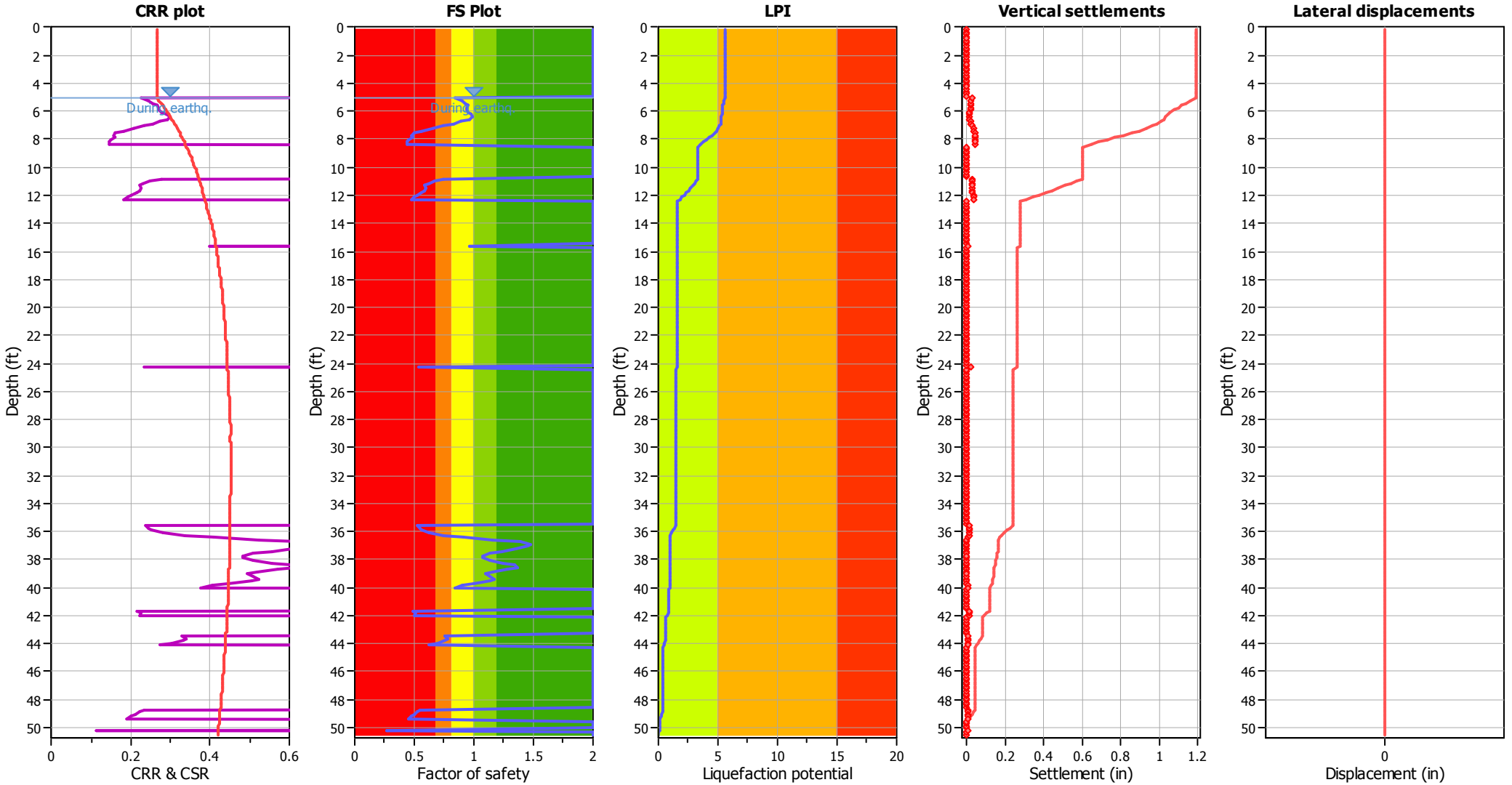
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

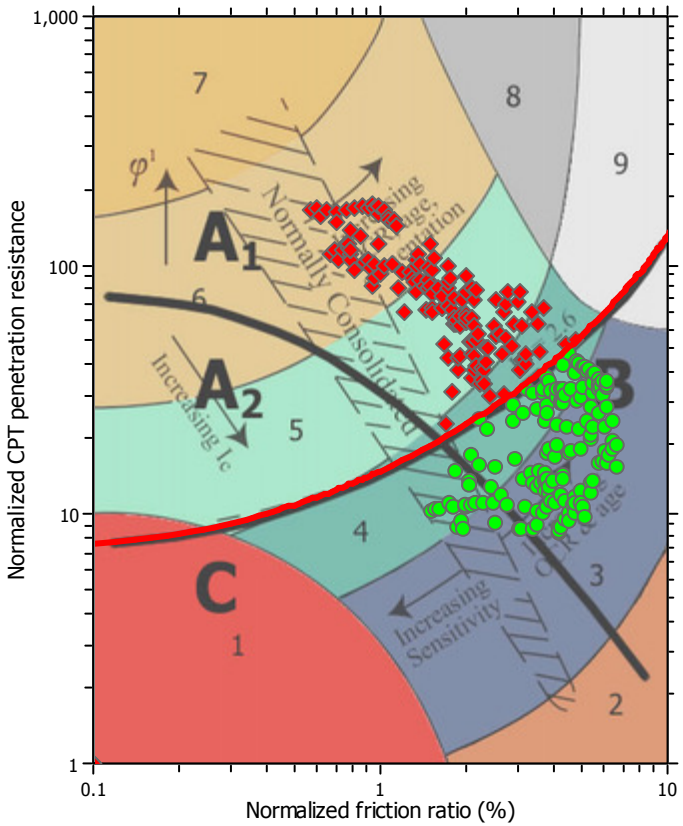
F.S. color scheme

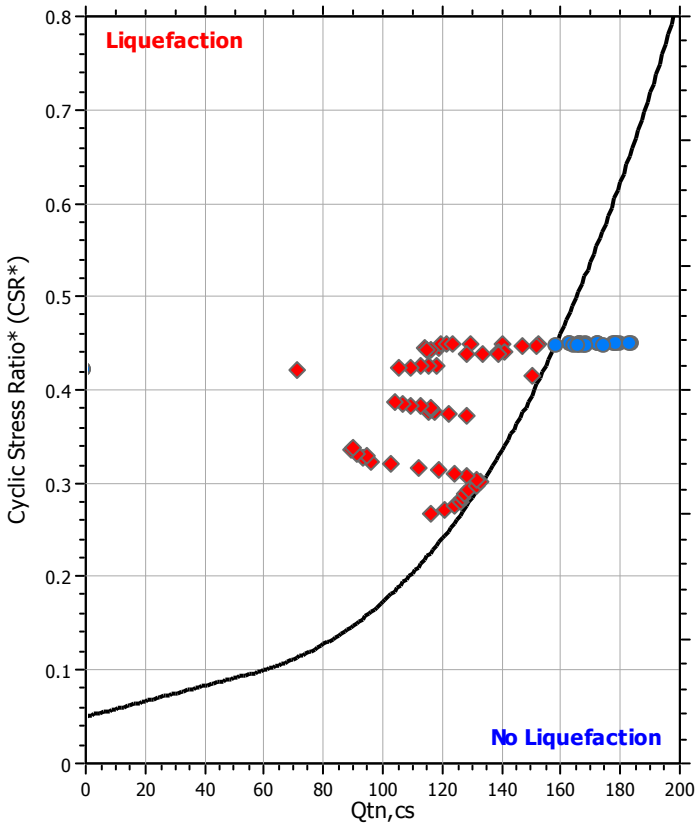
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

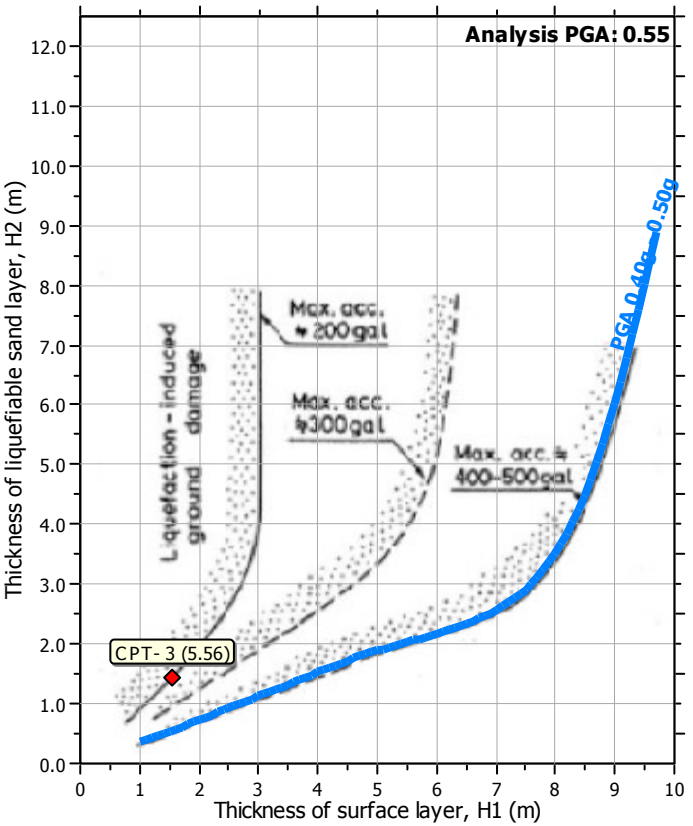
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



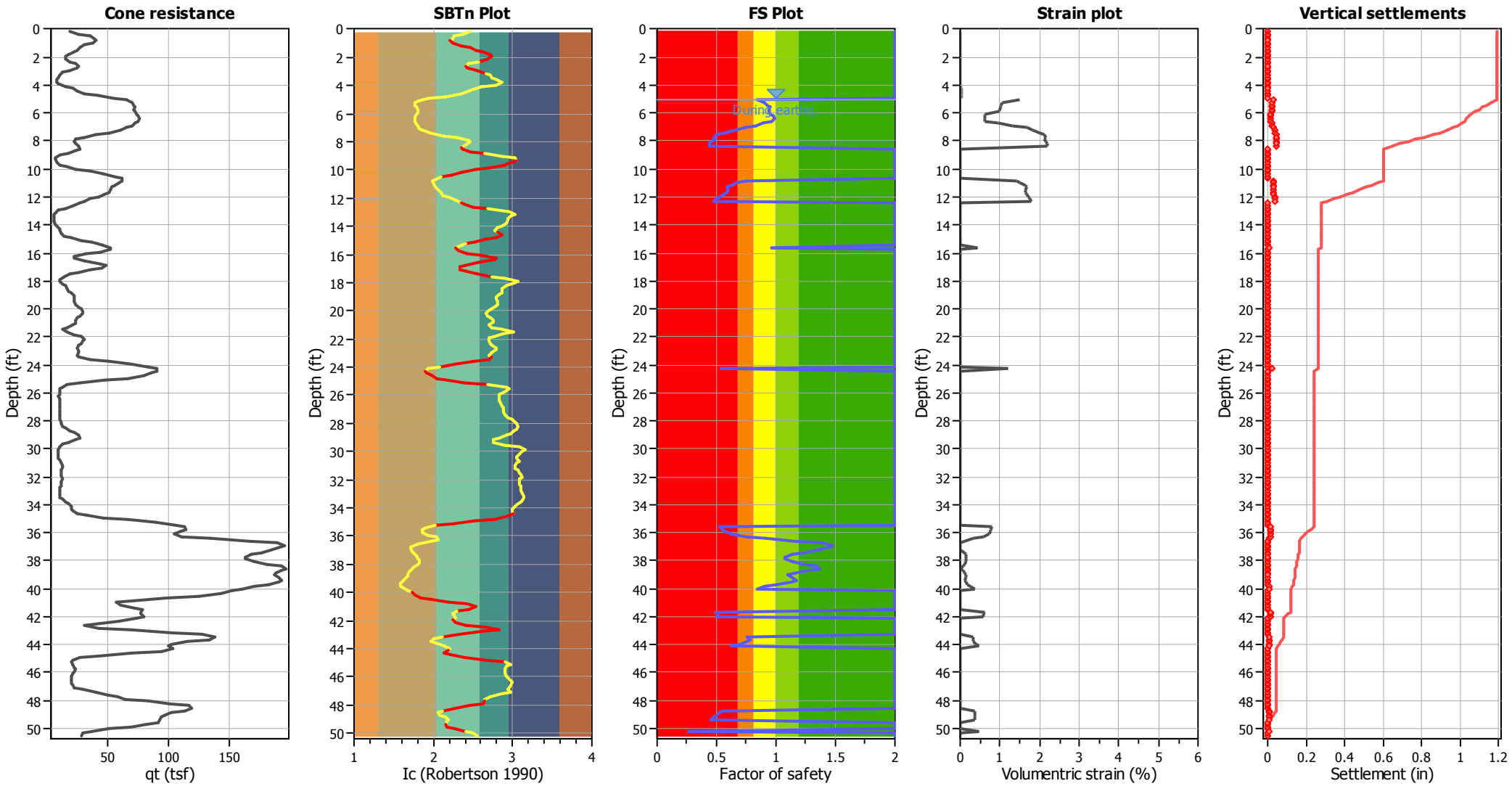




Input parameters and analysis data

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_σ 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)
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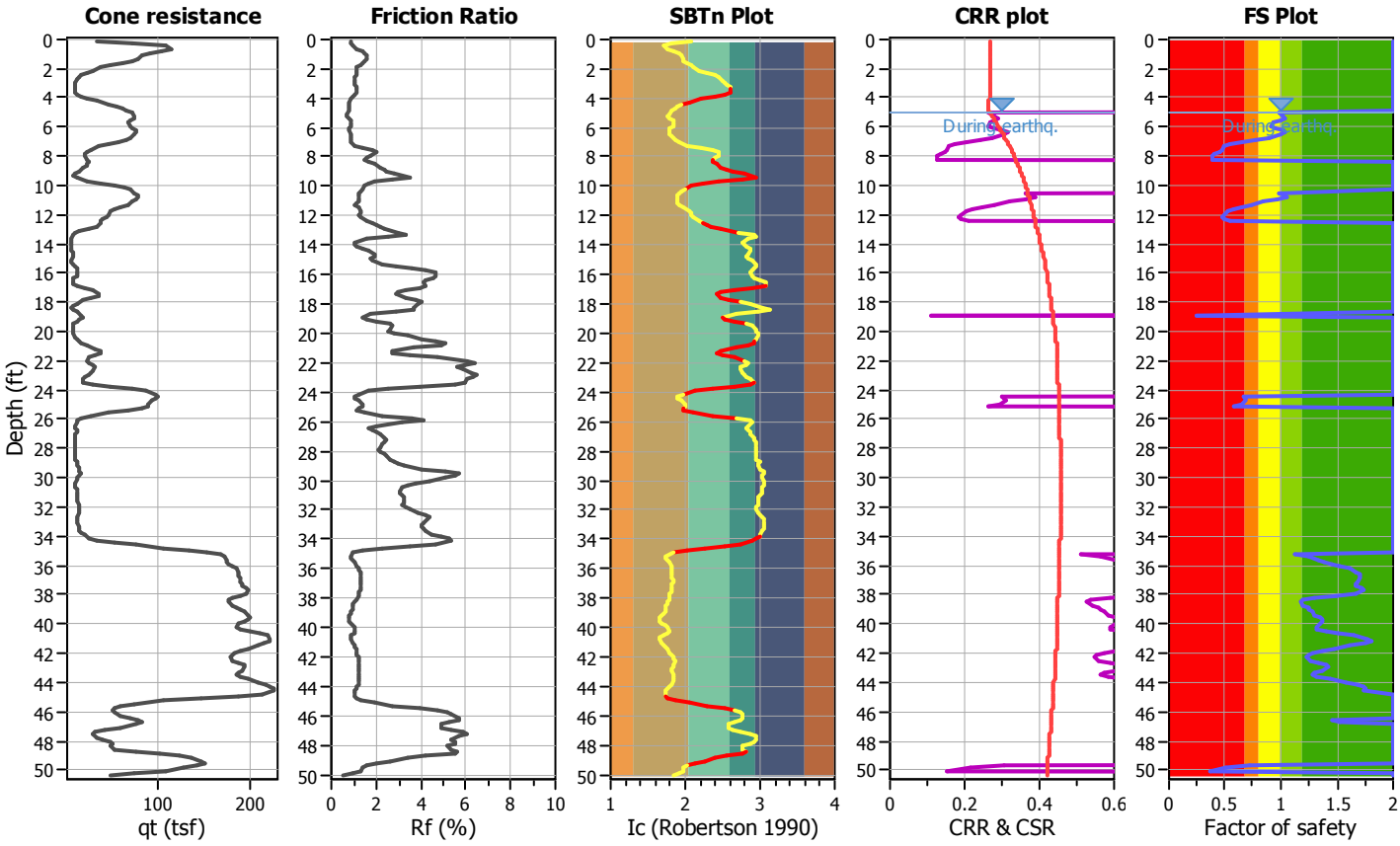
LIQUEFACTION ANALYSIS REPORT

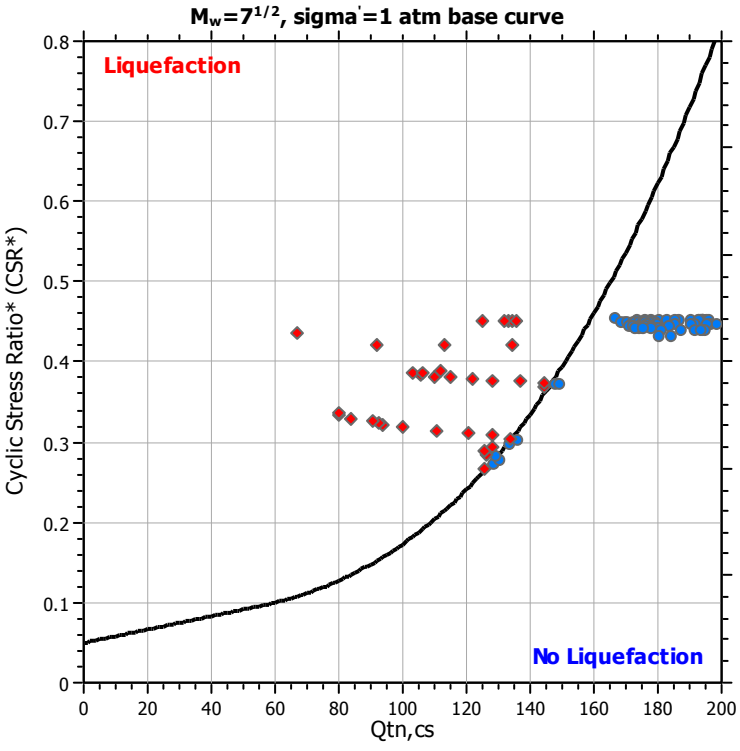
Project title : Shea Properties/Cypress **Location : Cypress, California**

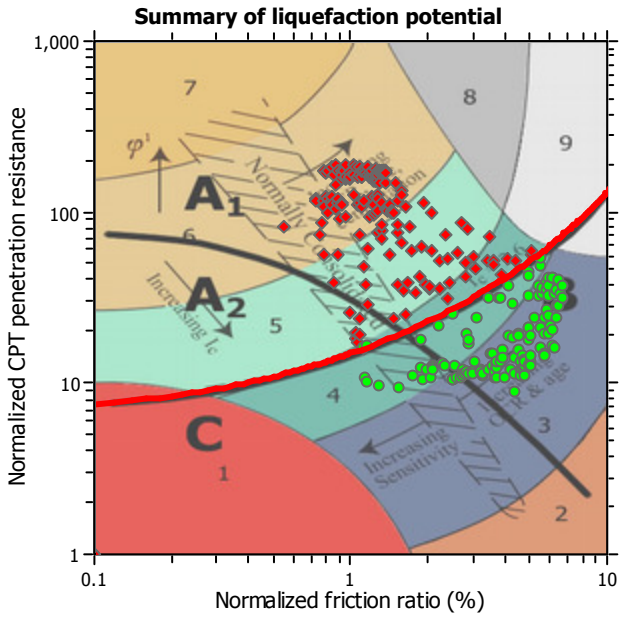
CPT file : CPT- 4

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

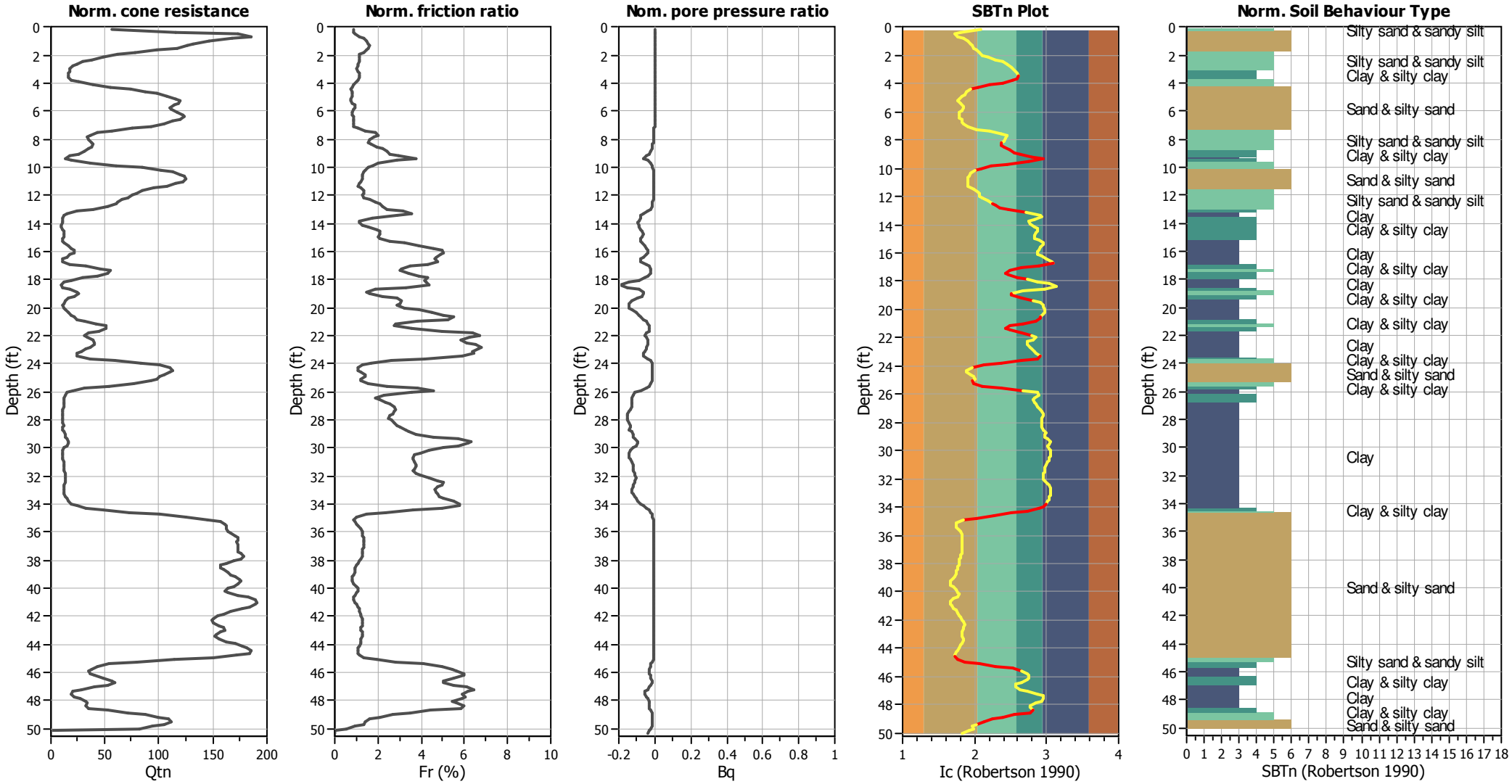






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



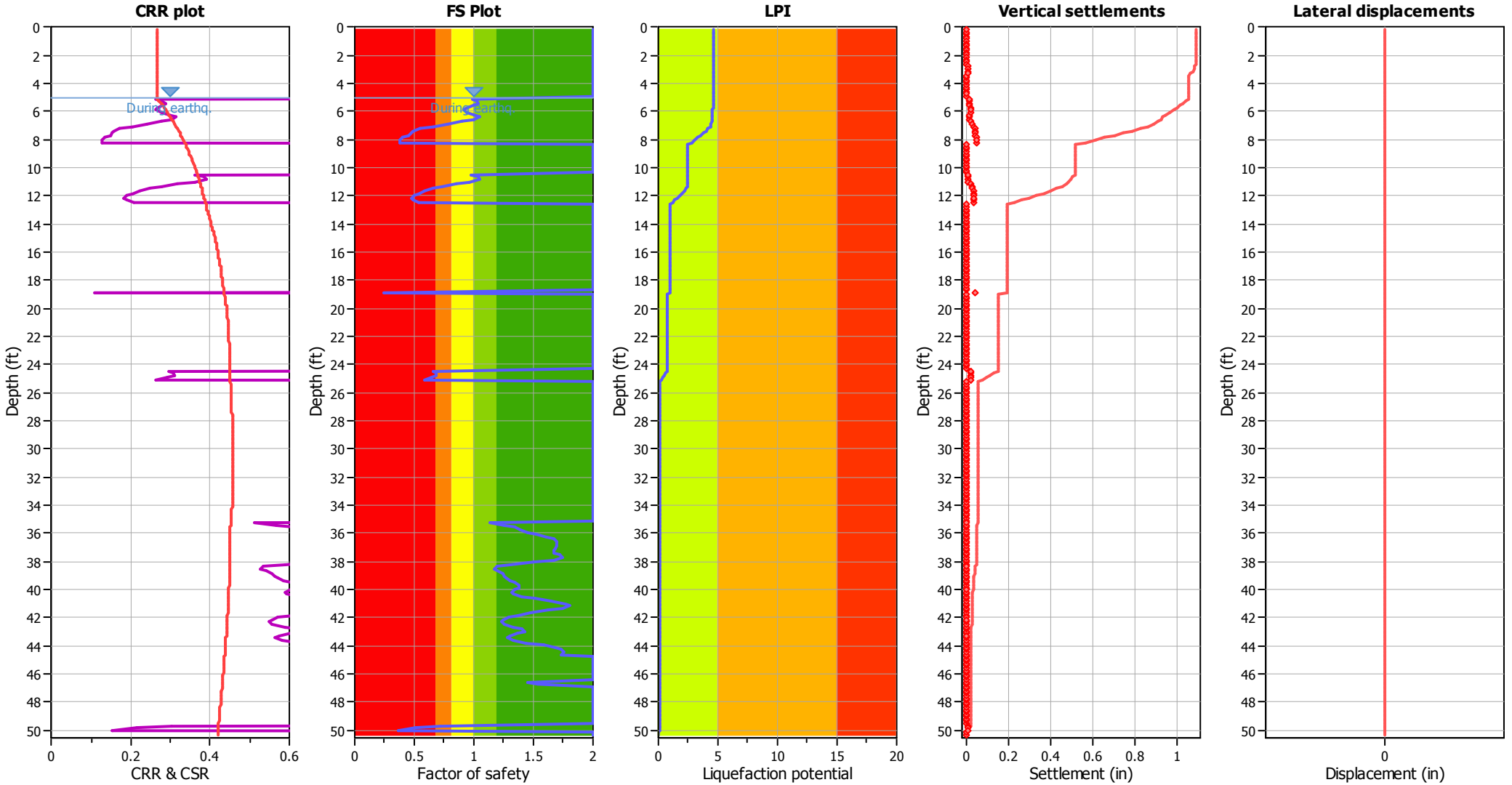
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

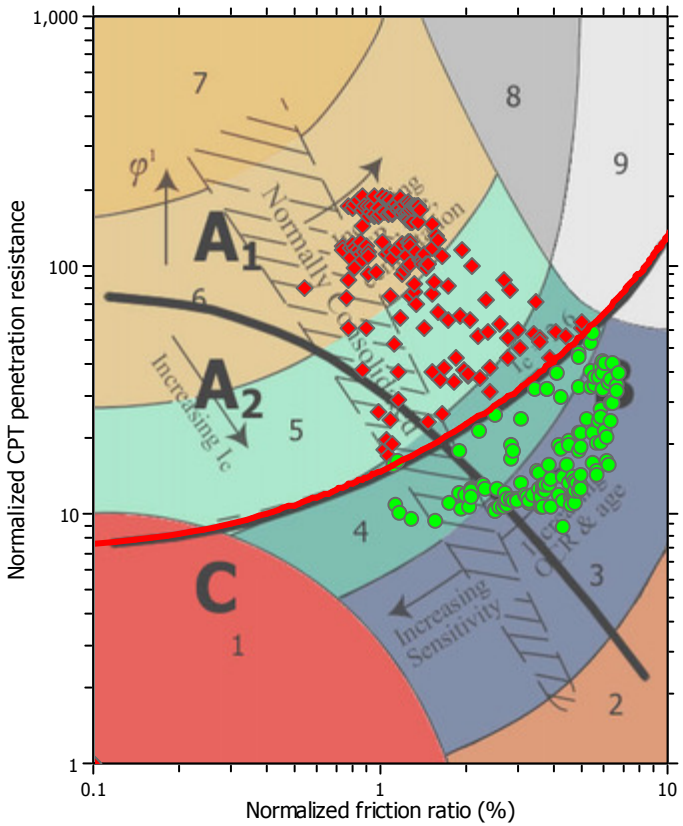
F.S. color scheme

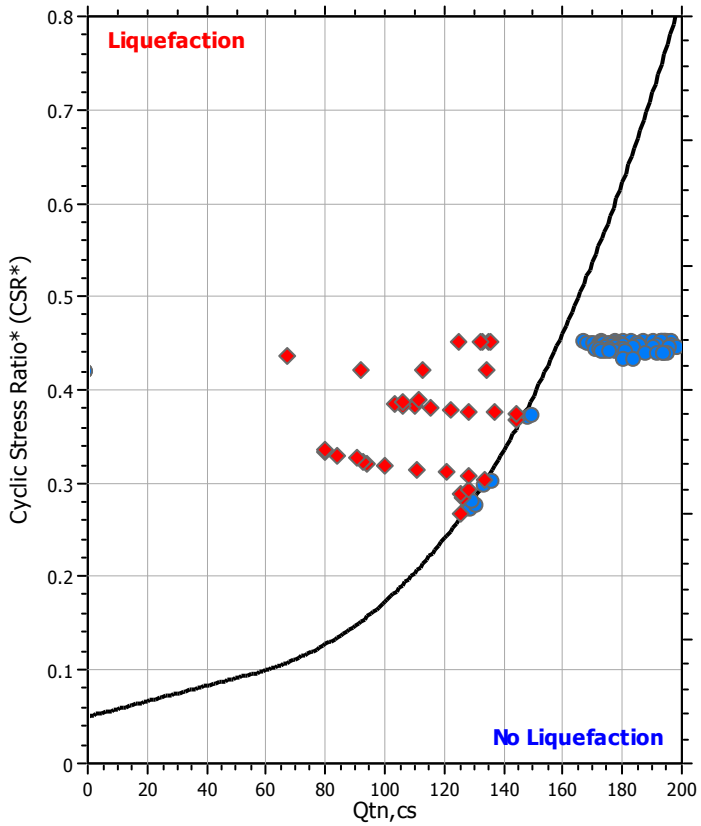
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

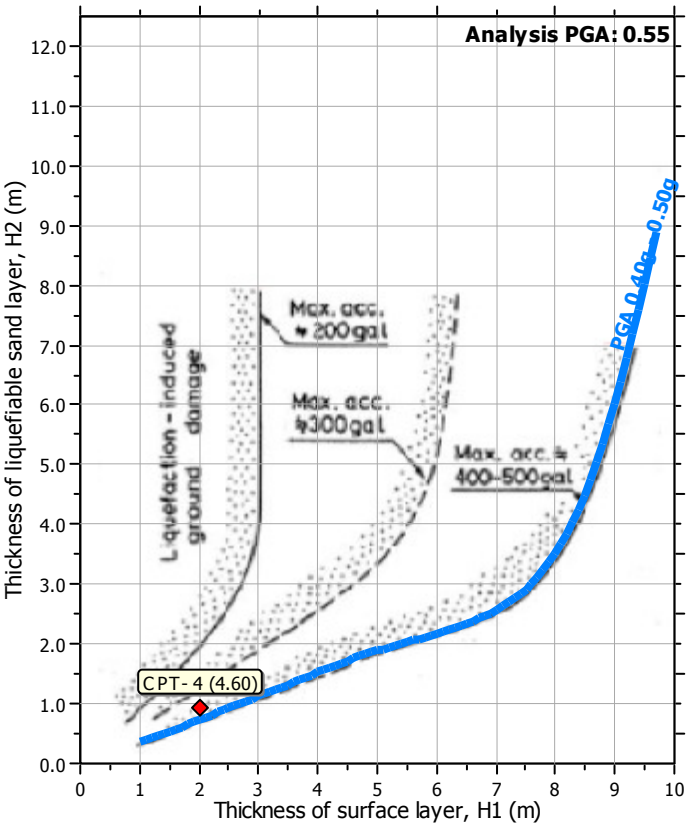
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



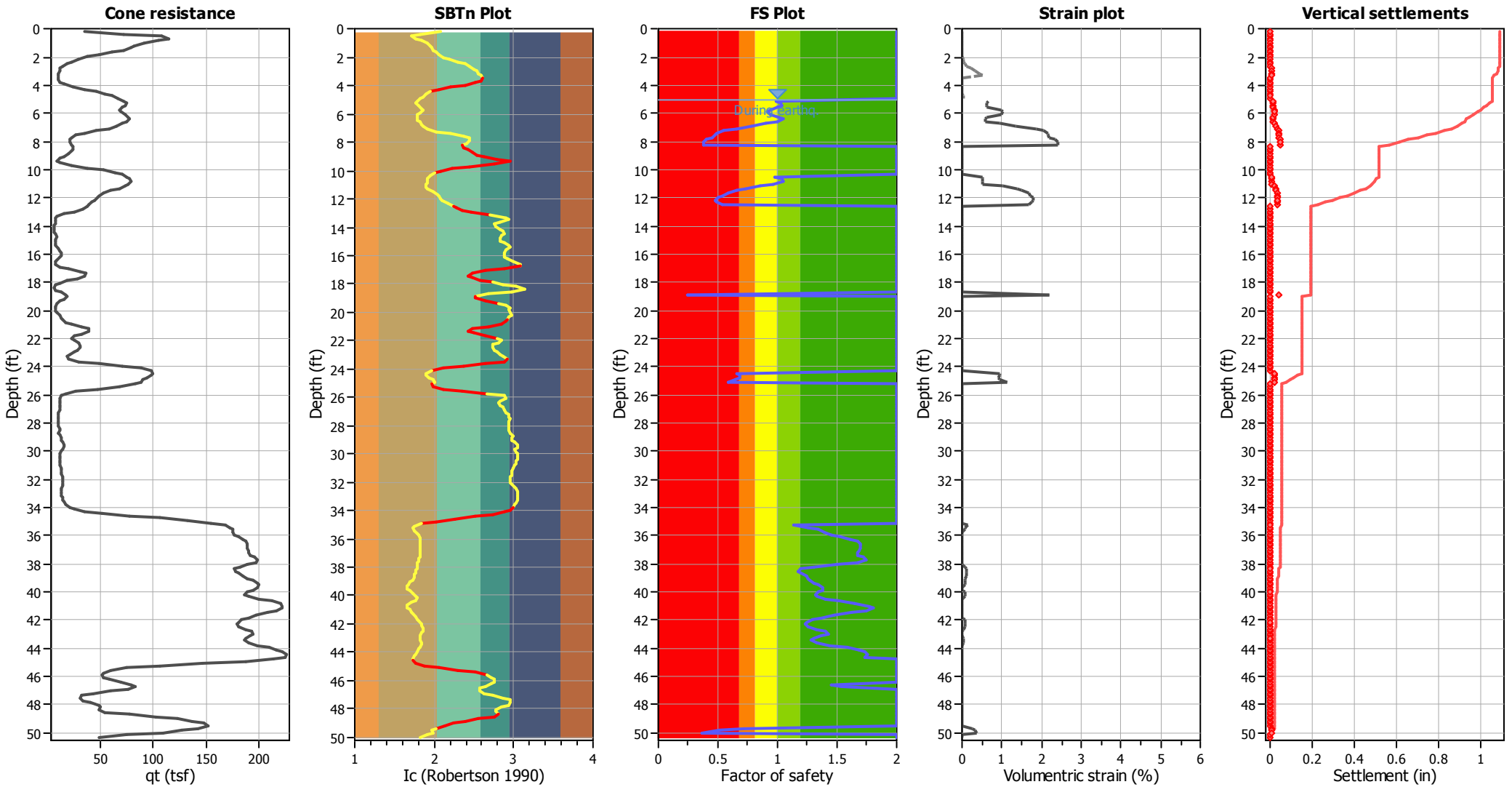




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

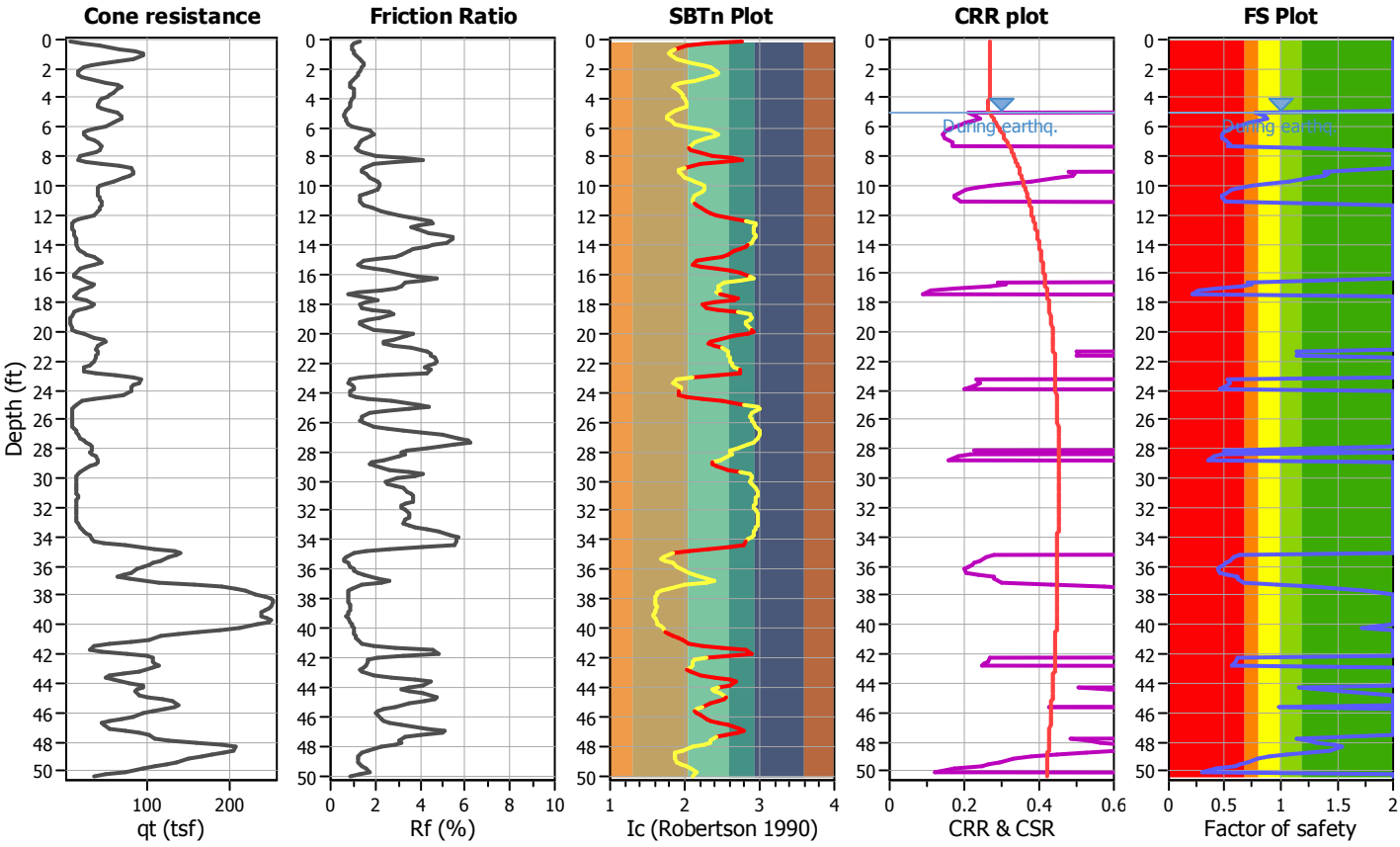
LIQUEFACTION ANALYSIS REPORT

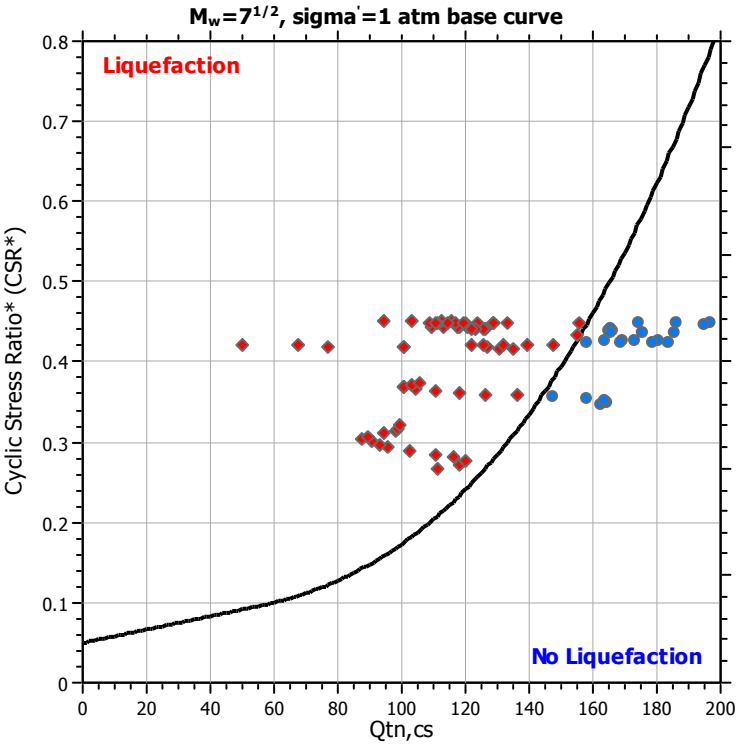
Project title : Shea Properties/Cypress **Location : Cypress, California**

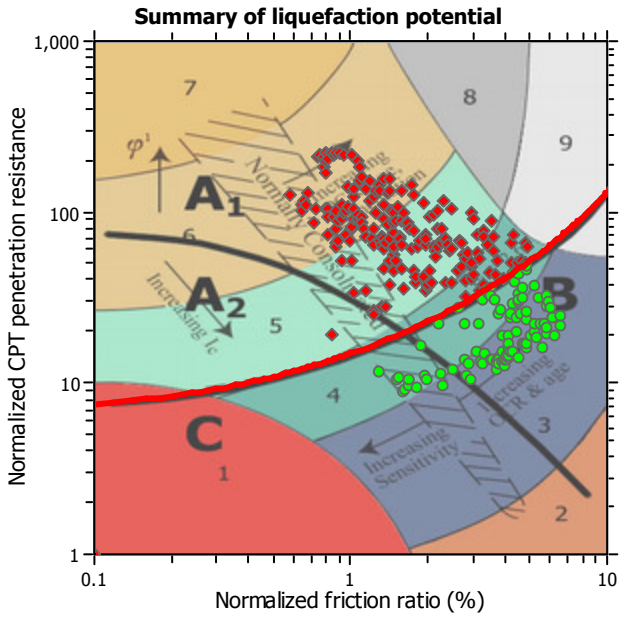
CPT file : CPT- 5

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

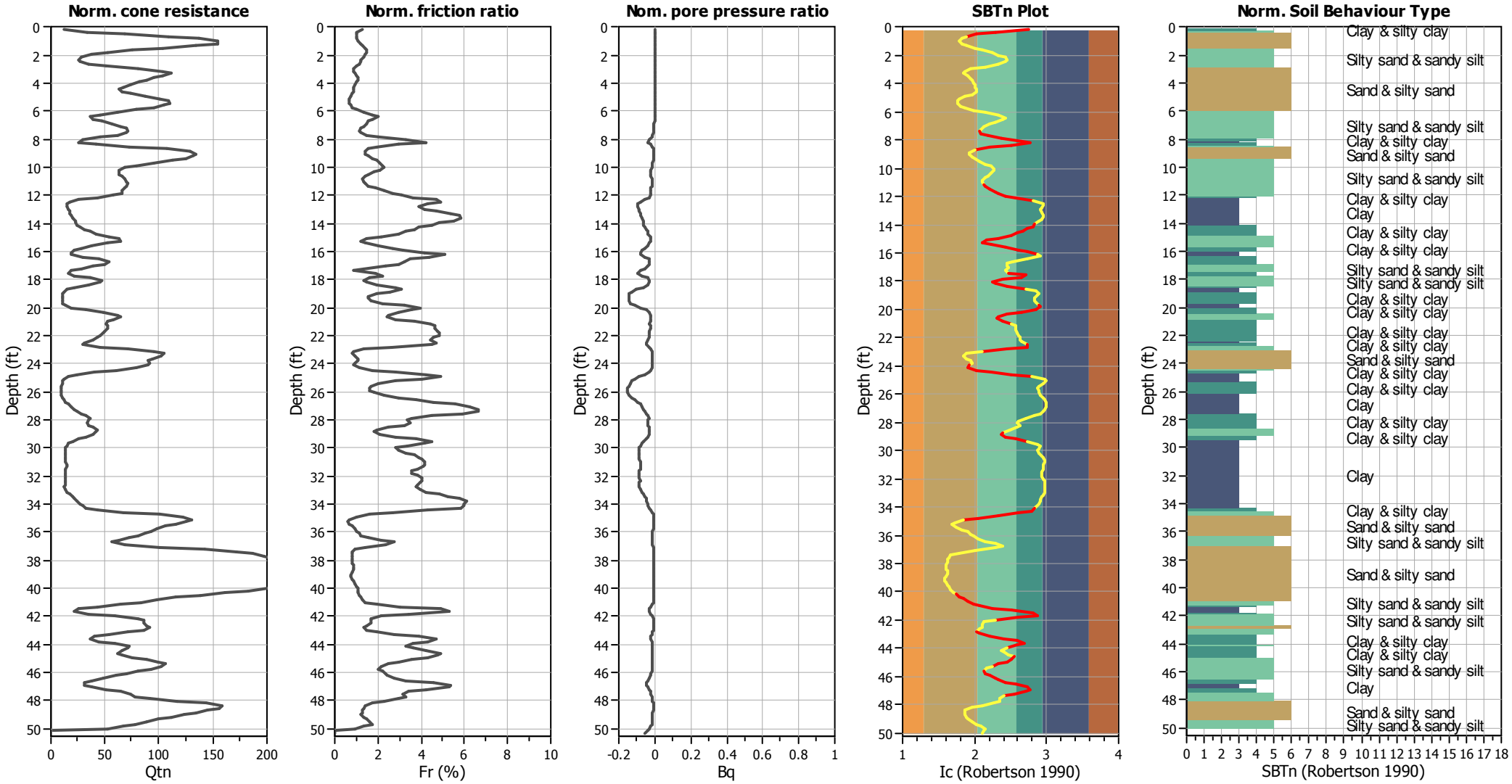






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



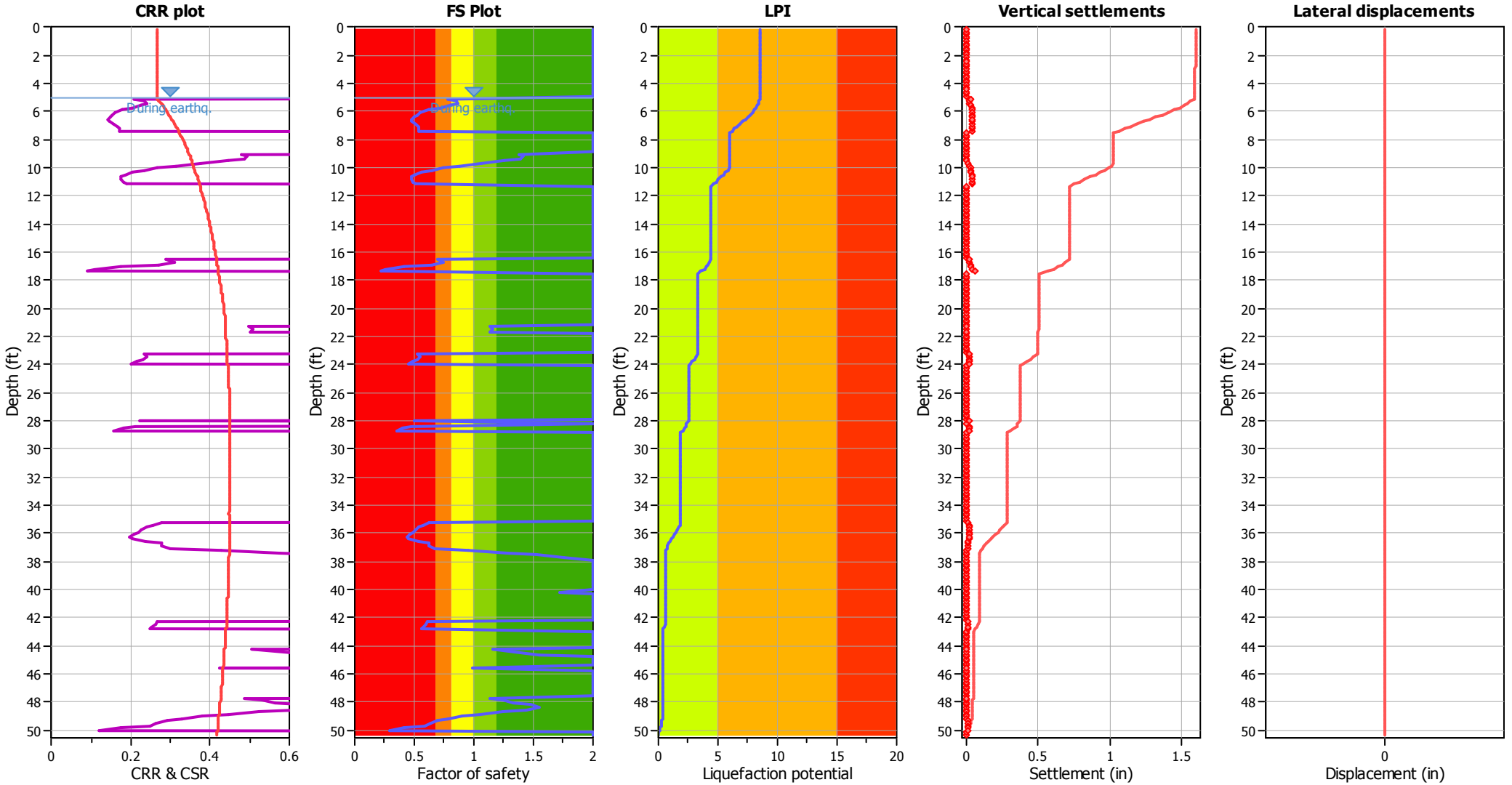
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

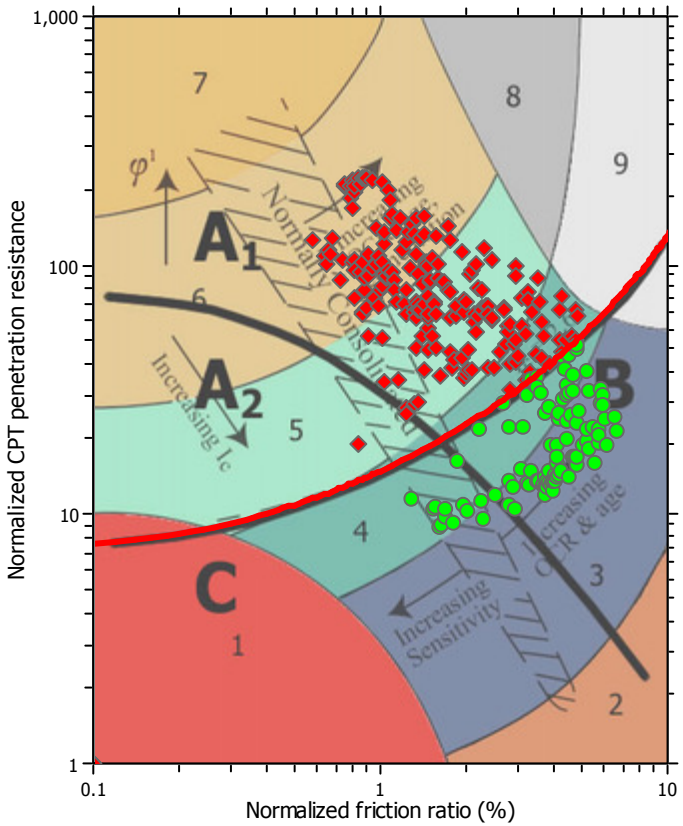
F.S. color scheme

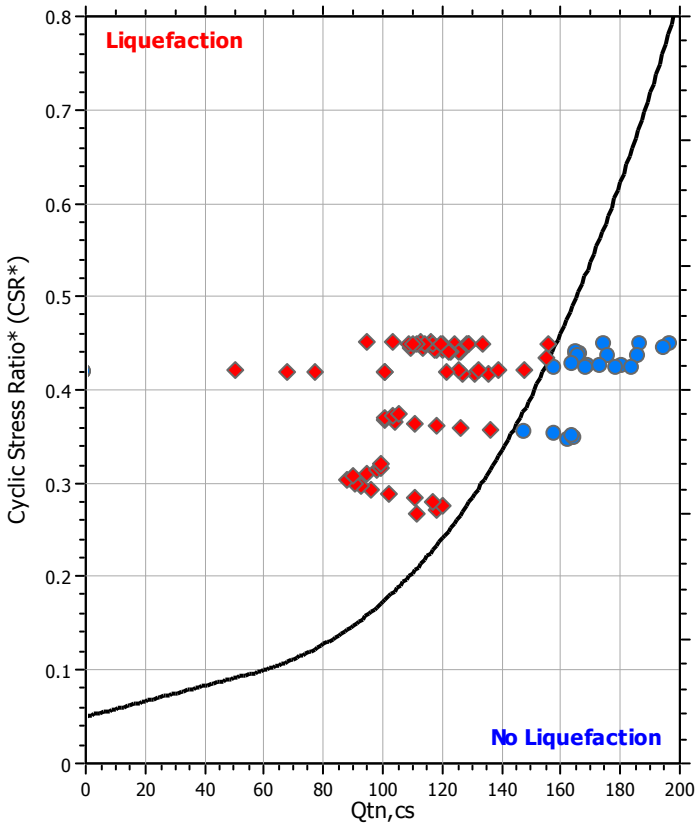
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

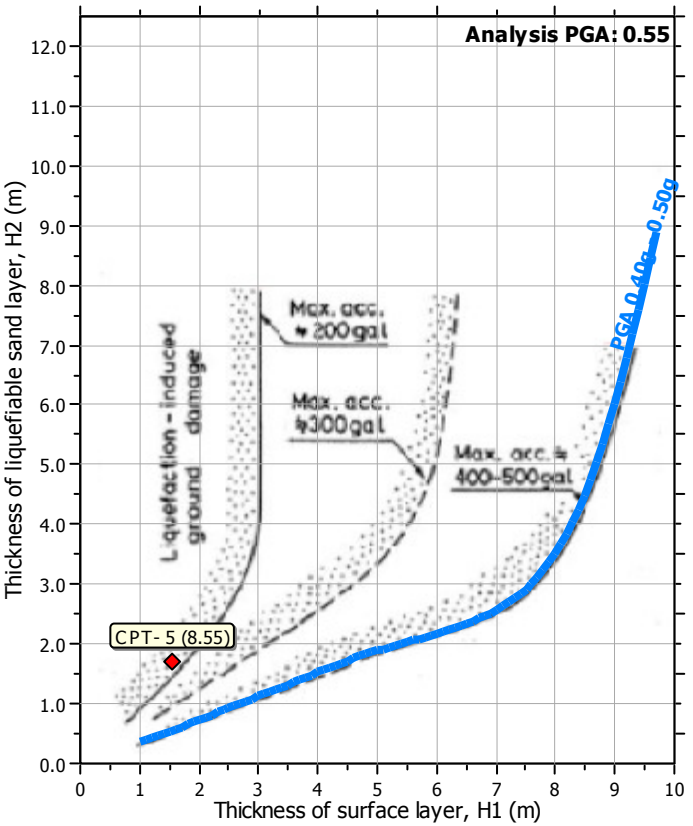
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



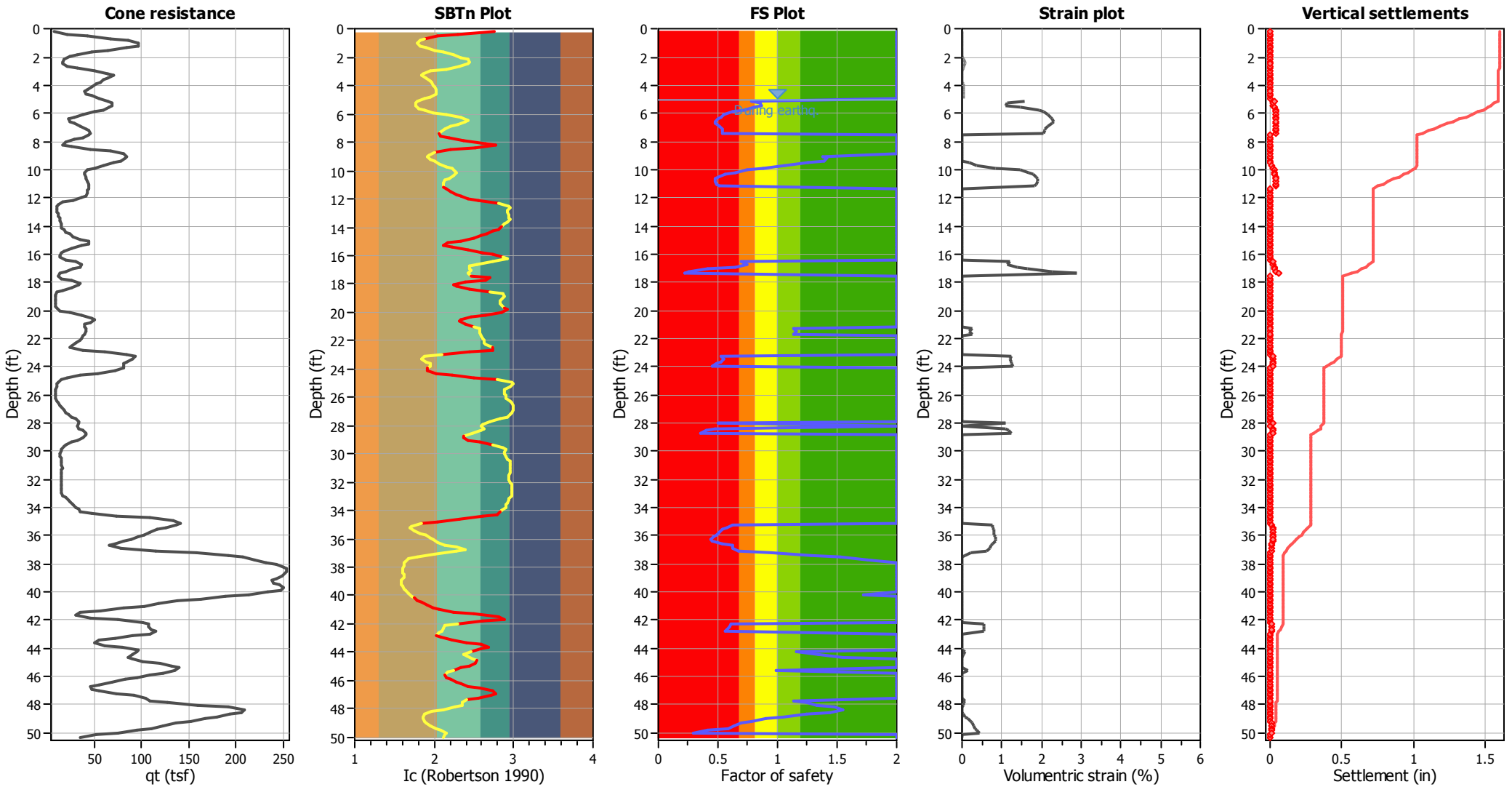




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

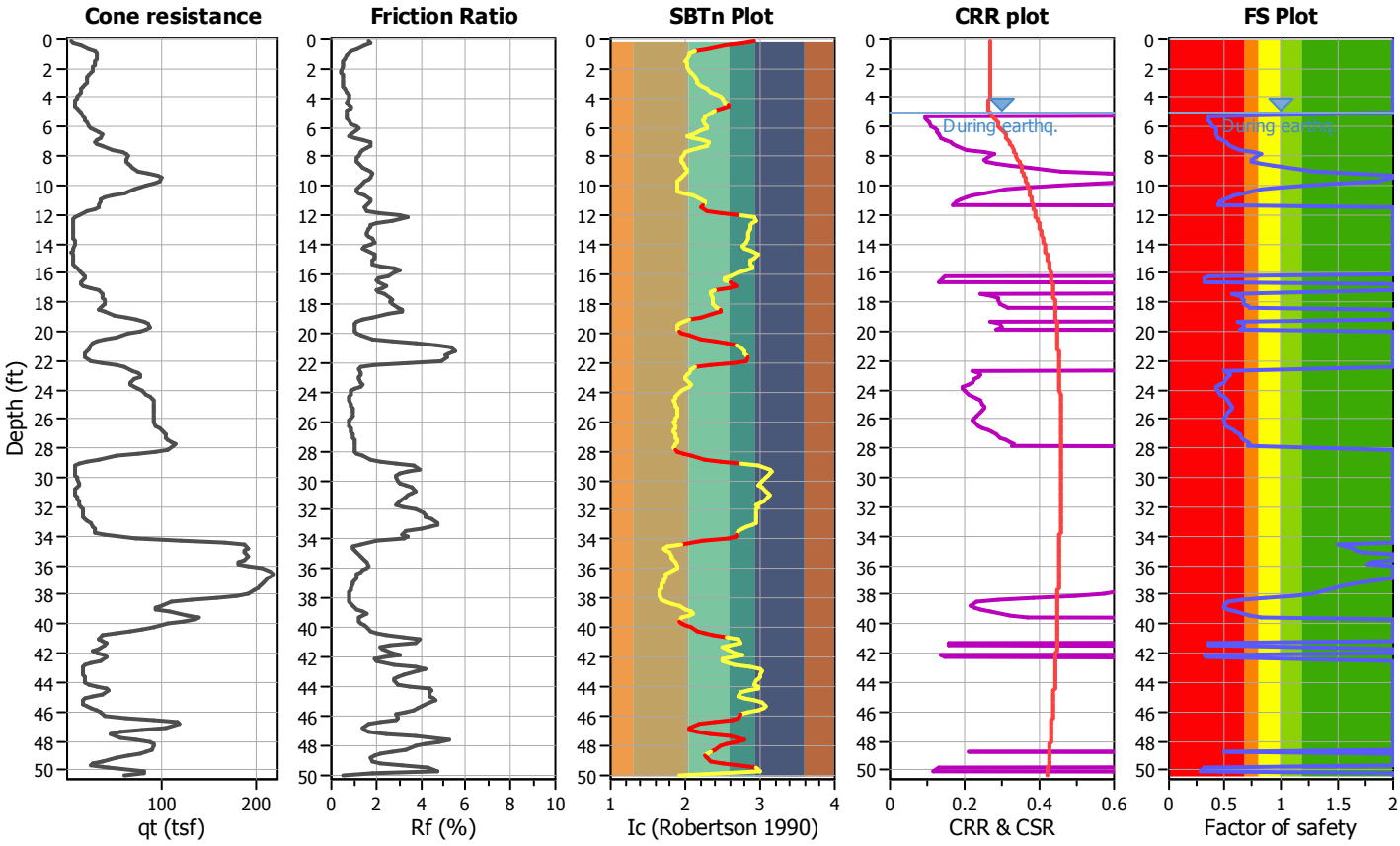
LIQUEFACTION ANALYSIS REPORT

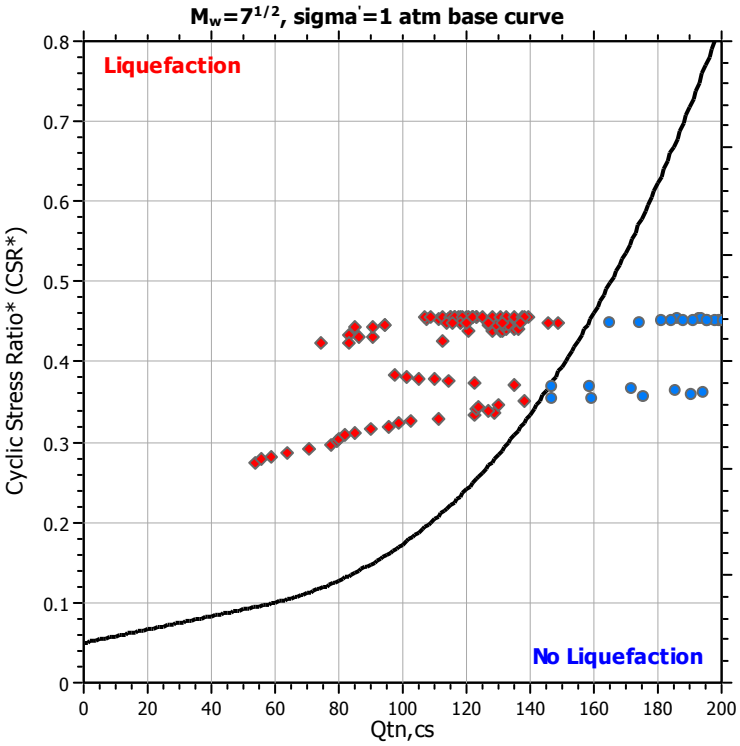
Project title : Shea Properties/Cypress **Location : Cypress, California**

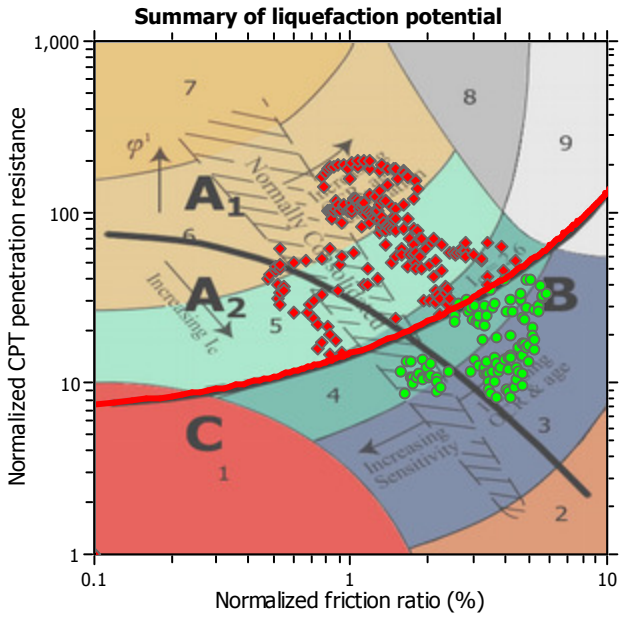
CPT file : CPT- 6

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

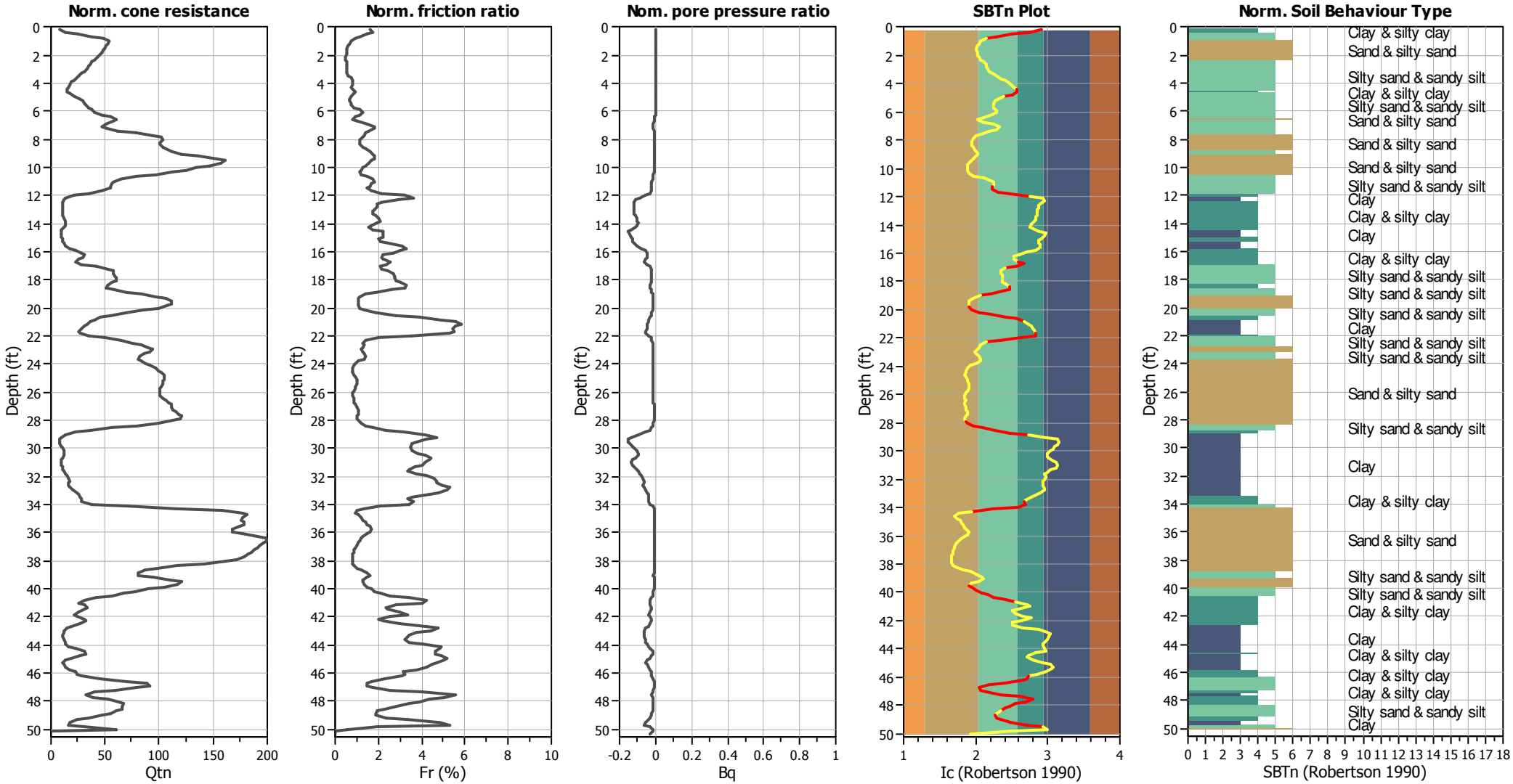






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



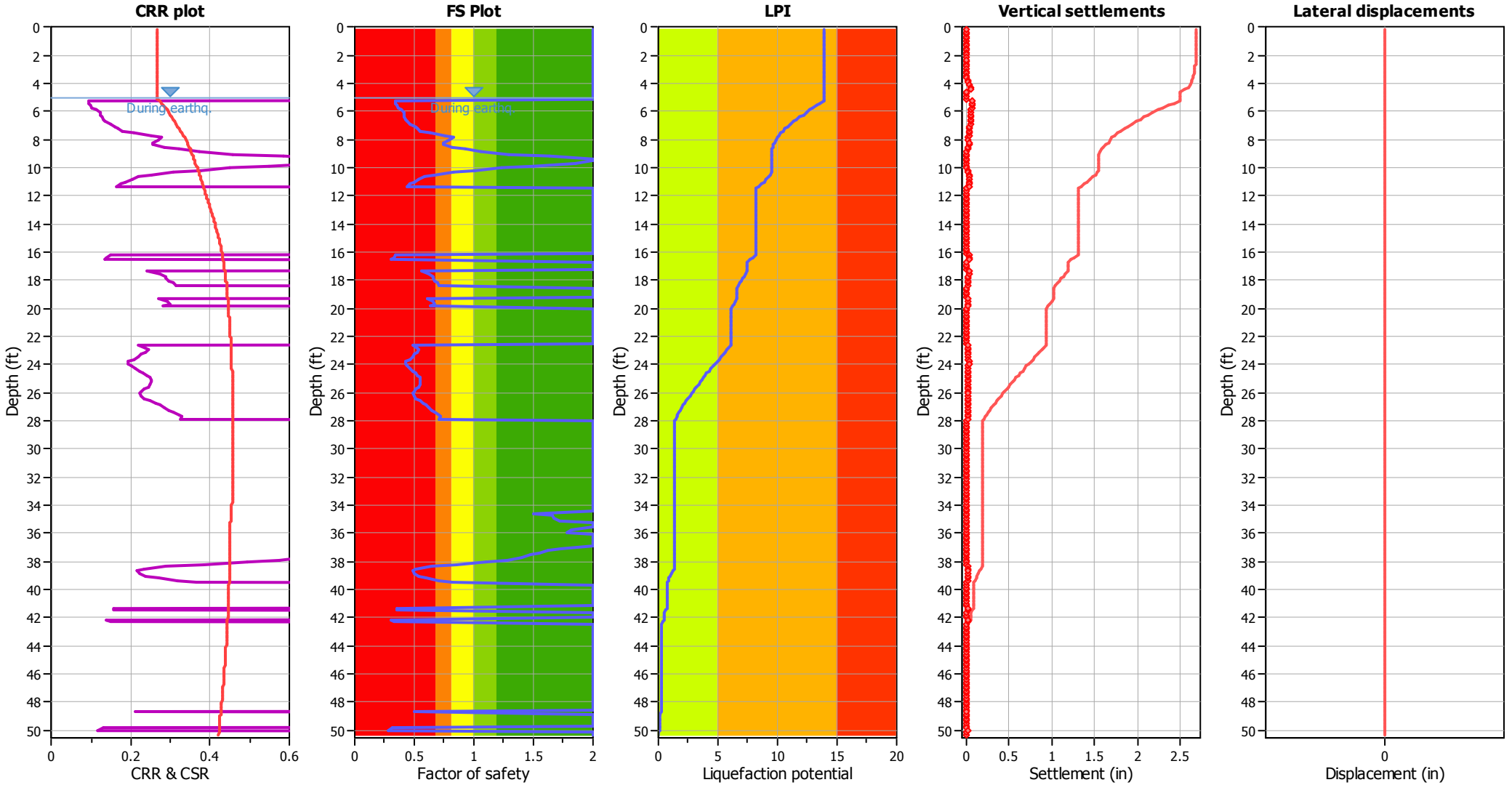
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

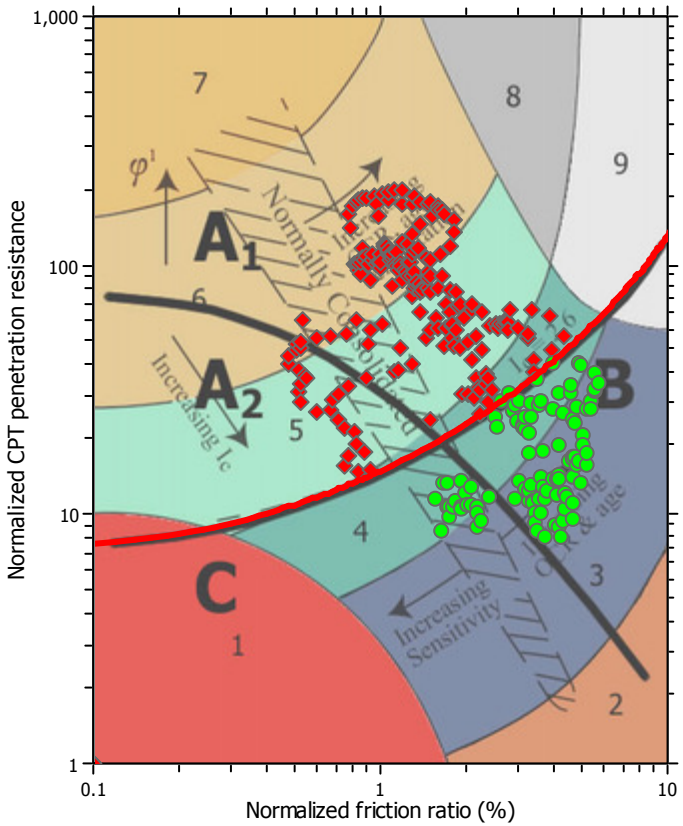
F.S. color scheme

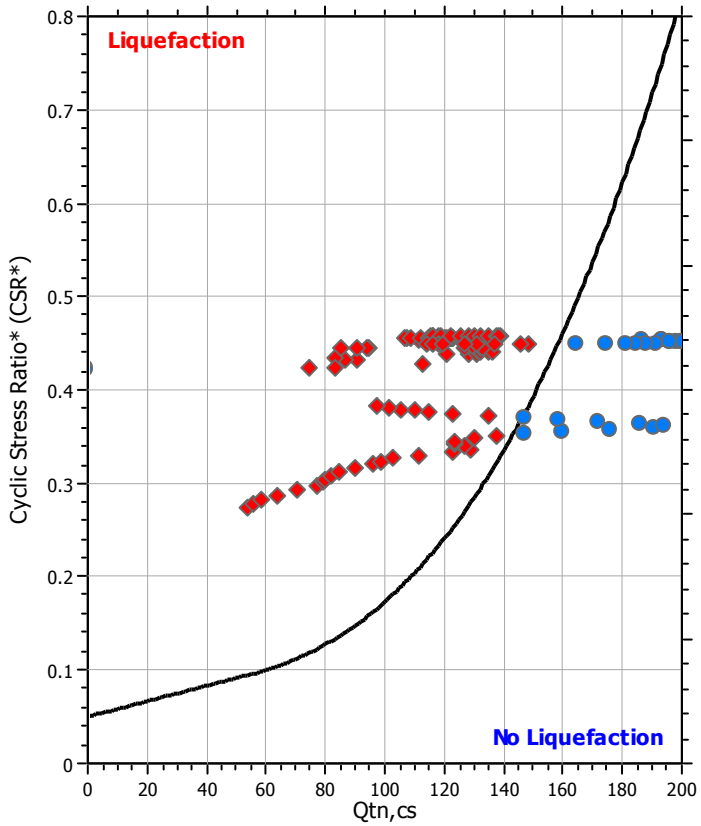
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

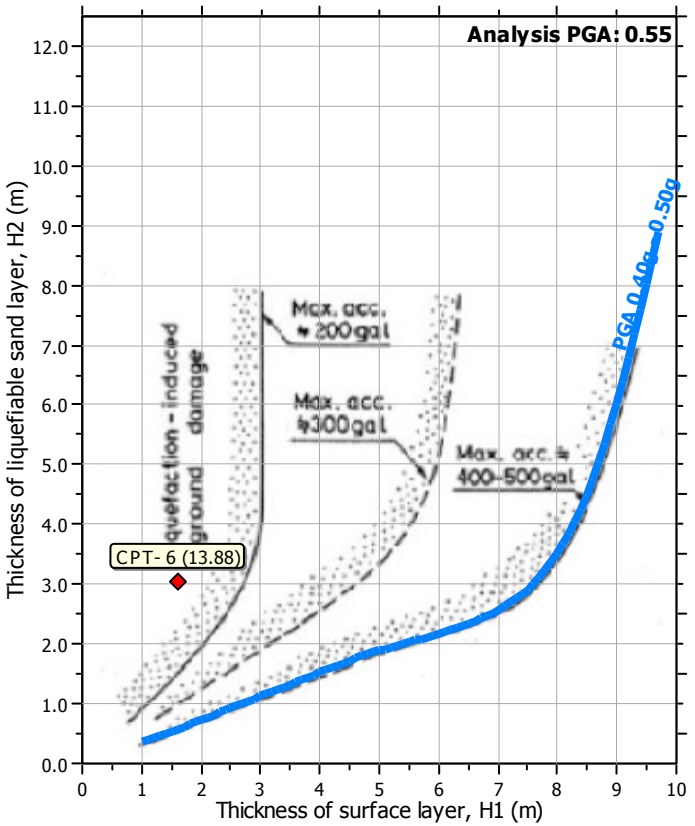
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



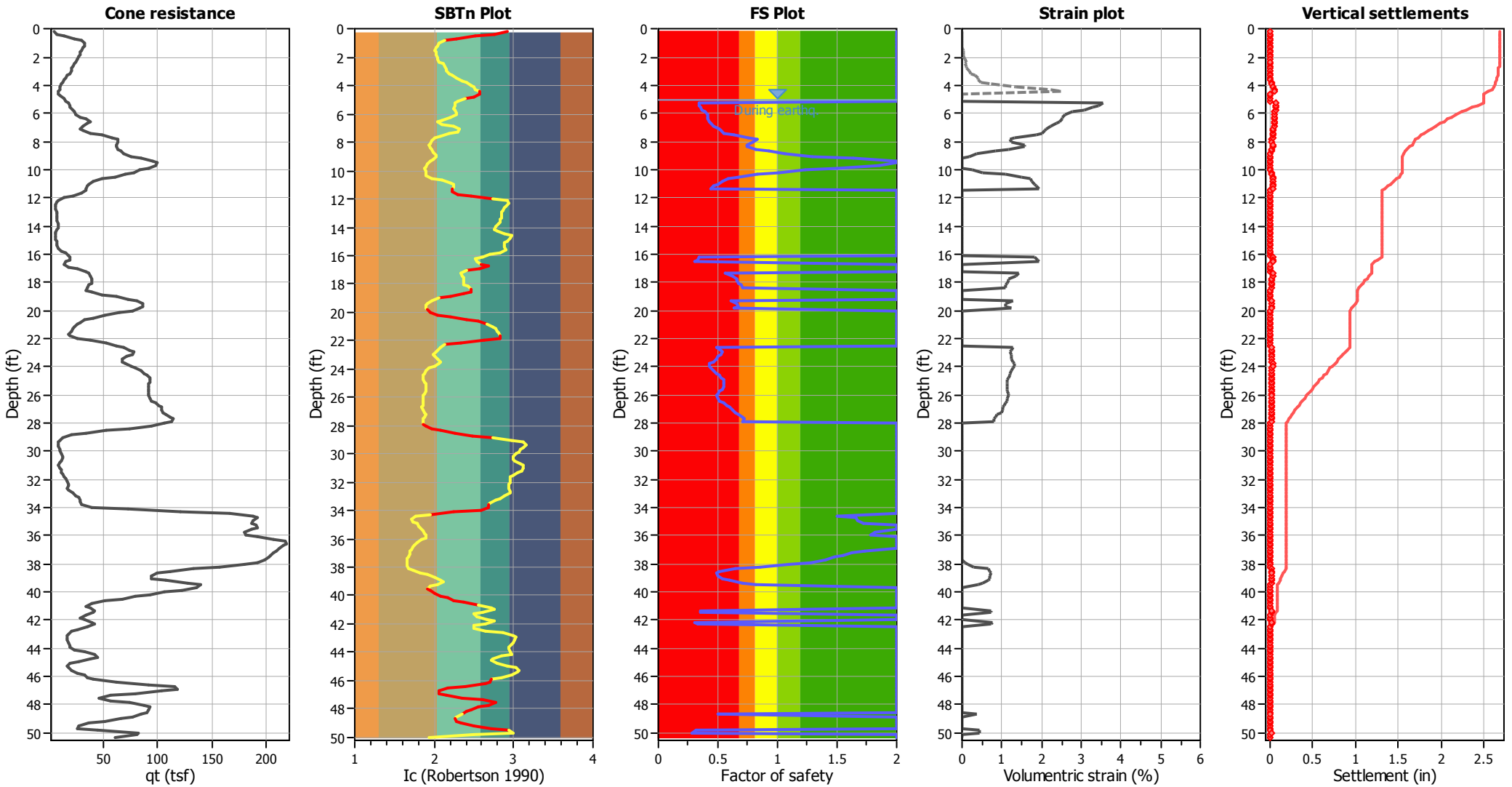




Input parameters and analysis data

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_σ 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)
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Volumentric strain:	Post-liquefaction volumentric strain

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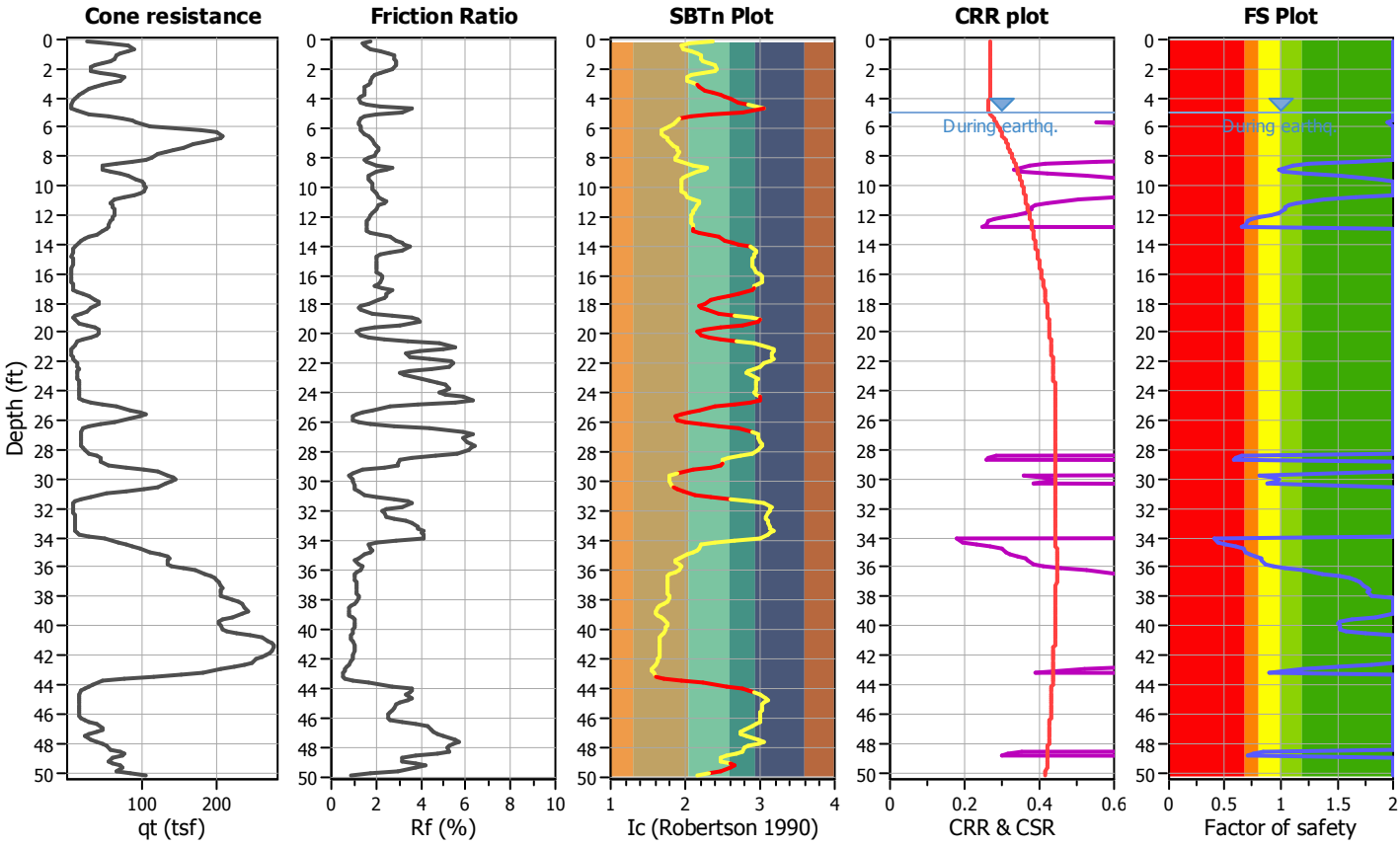
LIQUEFACTION ANALYSIS REPORT

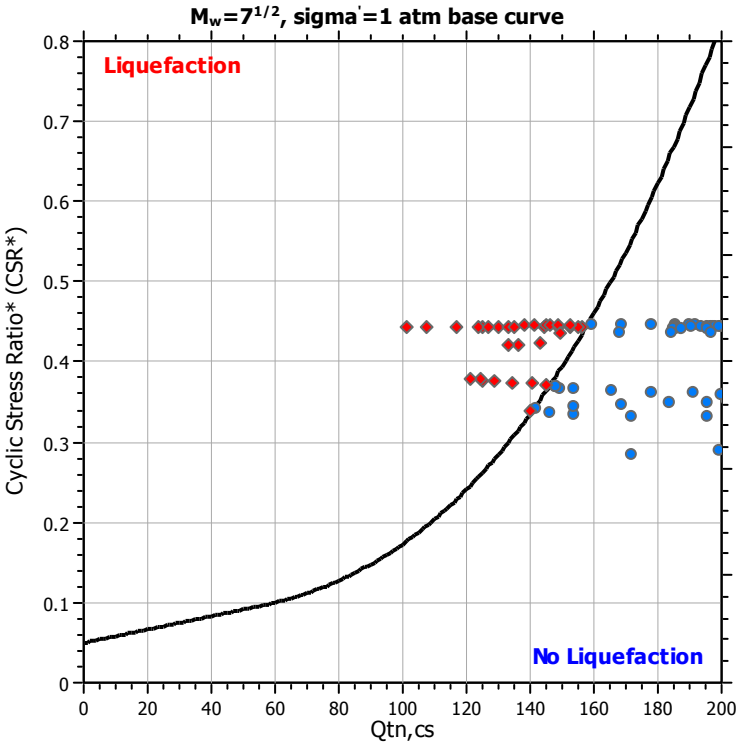
Project title : Shea Properties/Cypress **Location : Cypress, California**

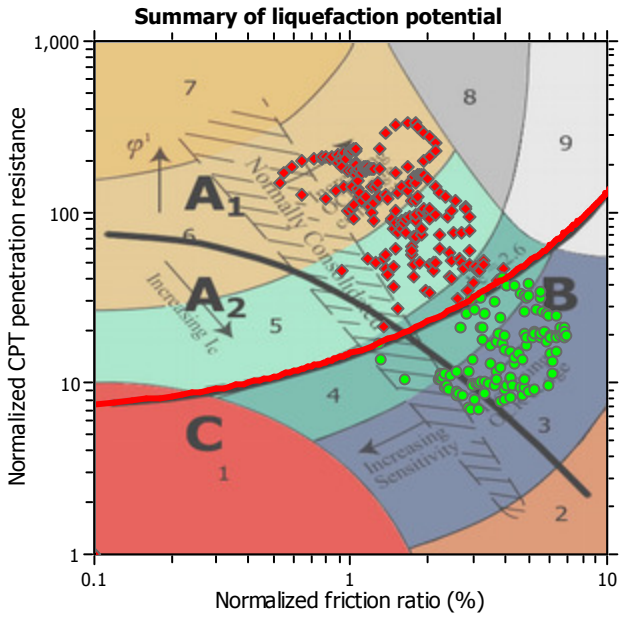
CPT file : CPT- 7

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

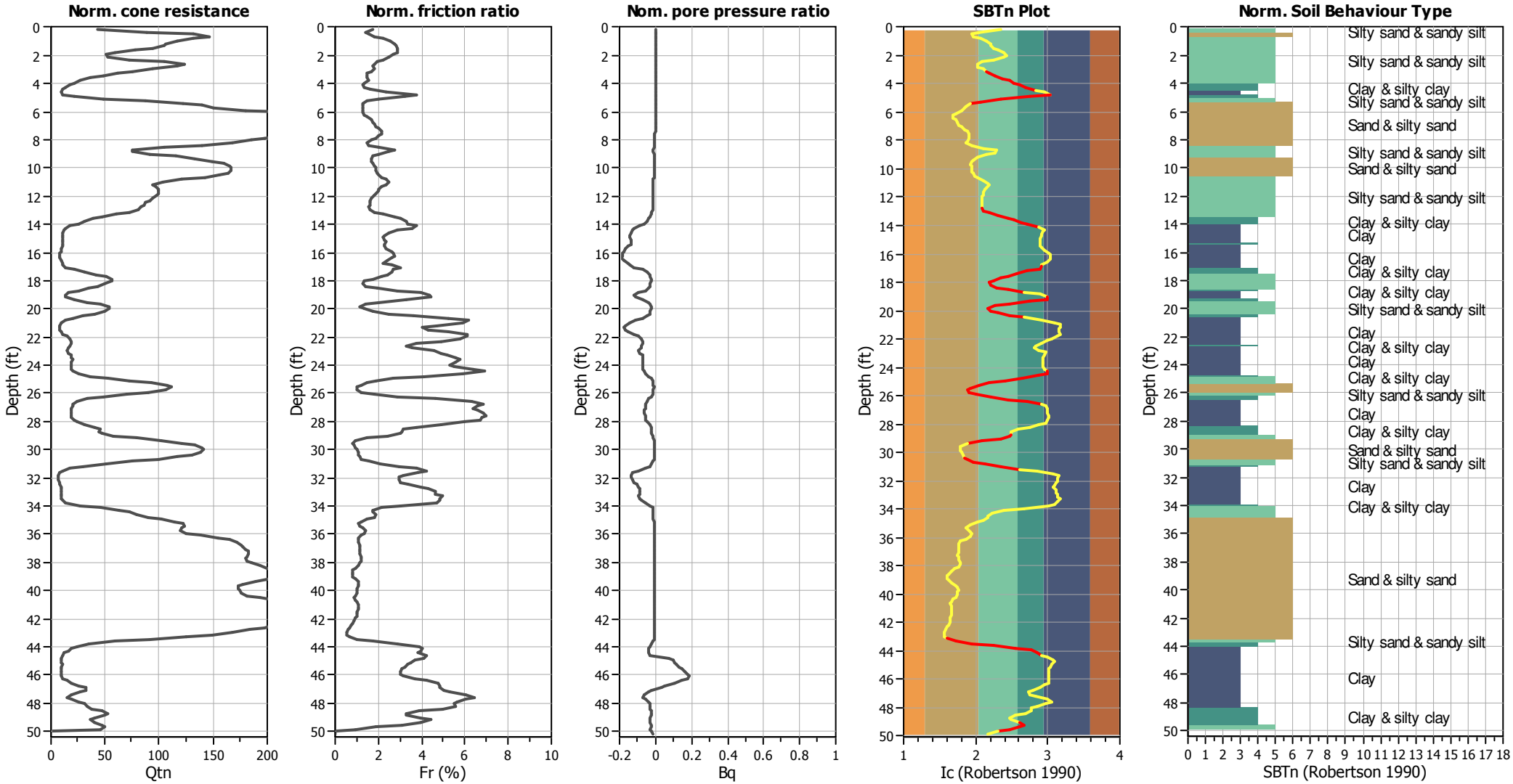






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



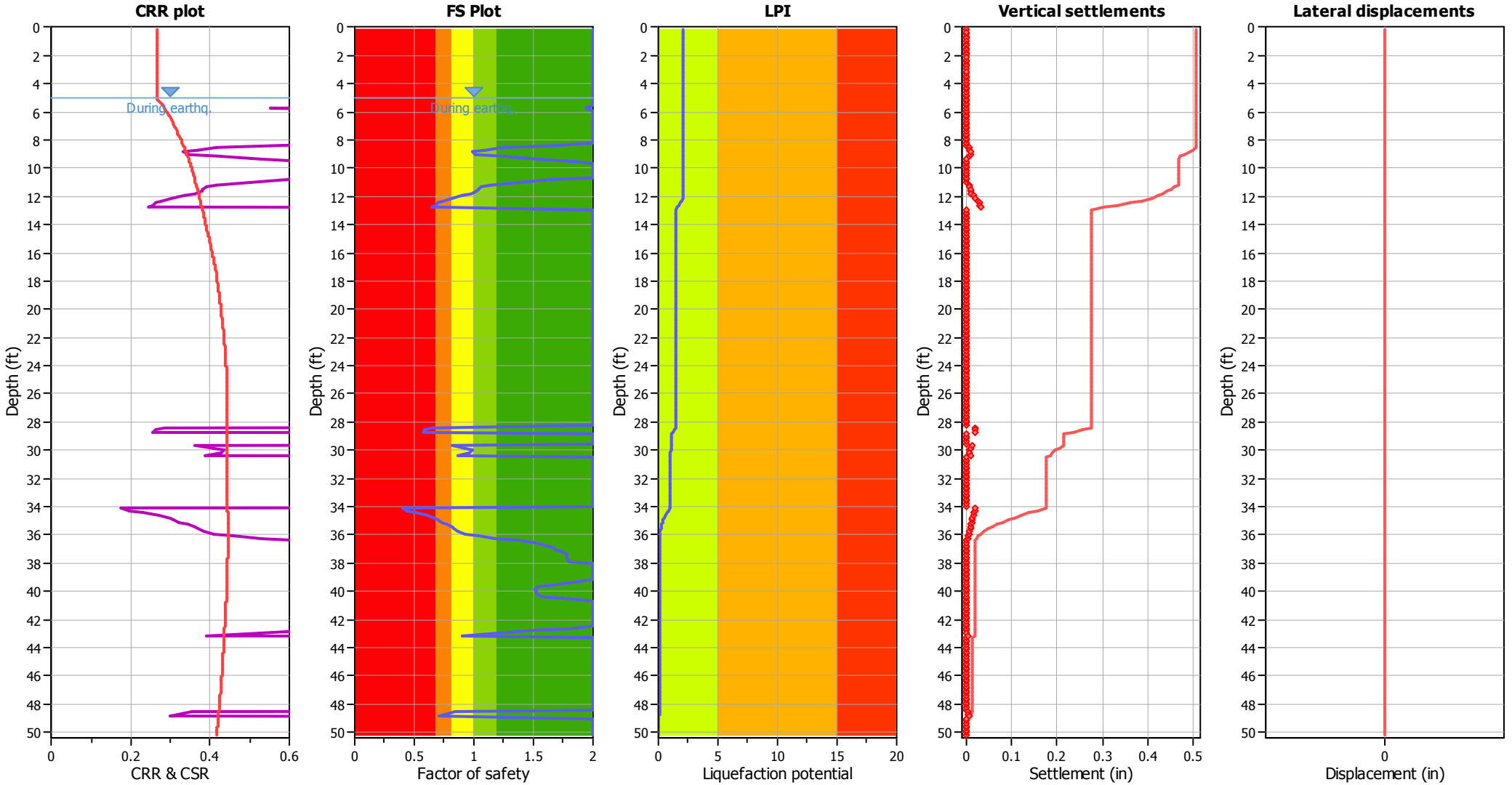
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

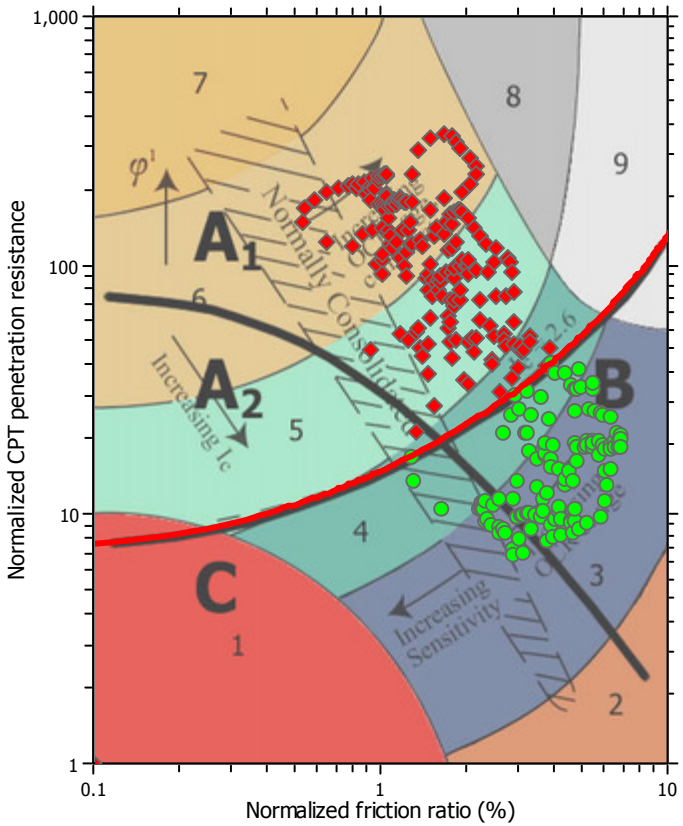
F.S. color scheme

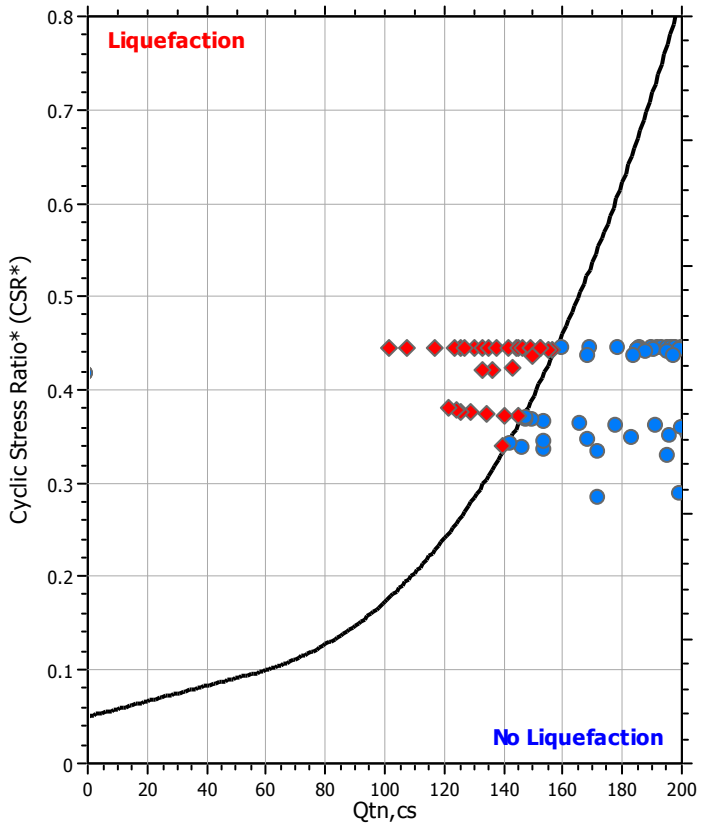
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

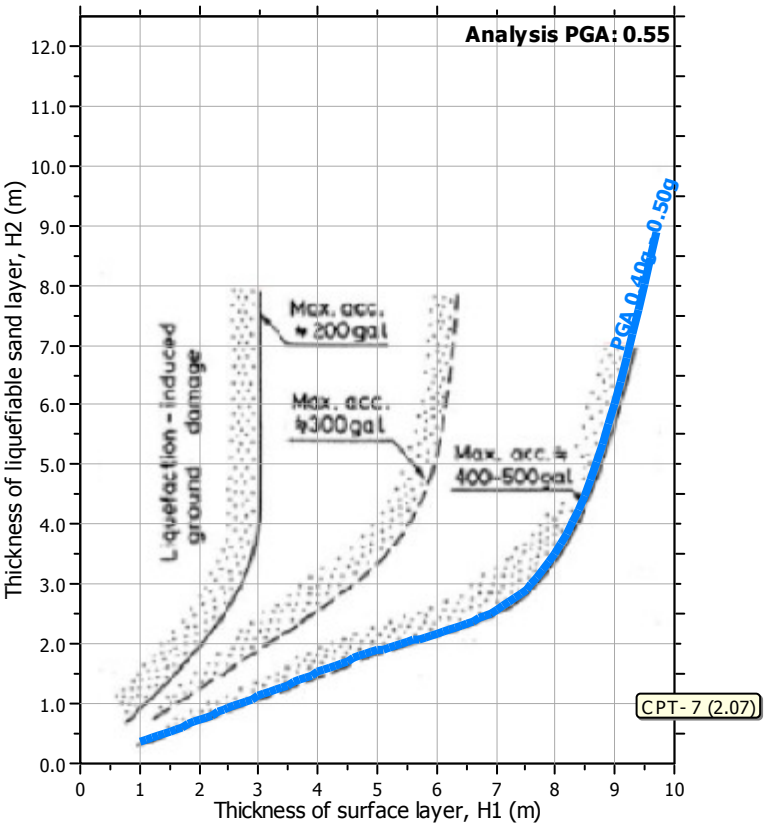
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



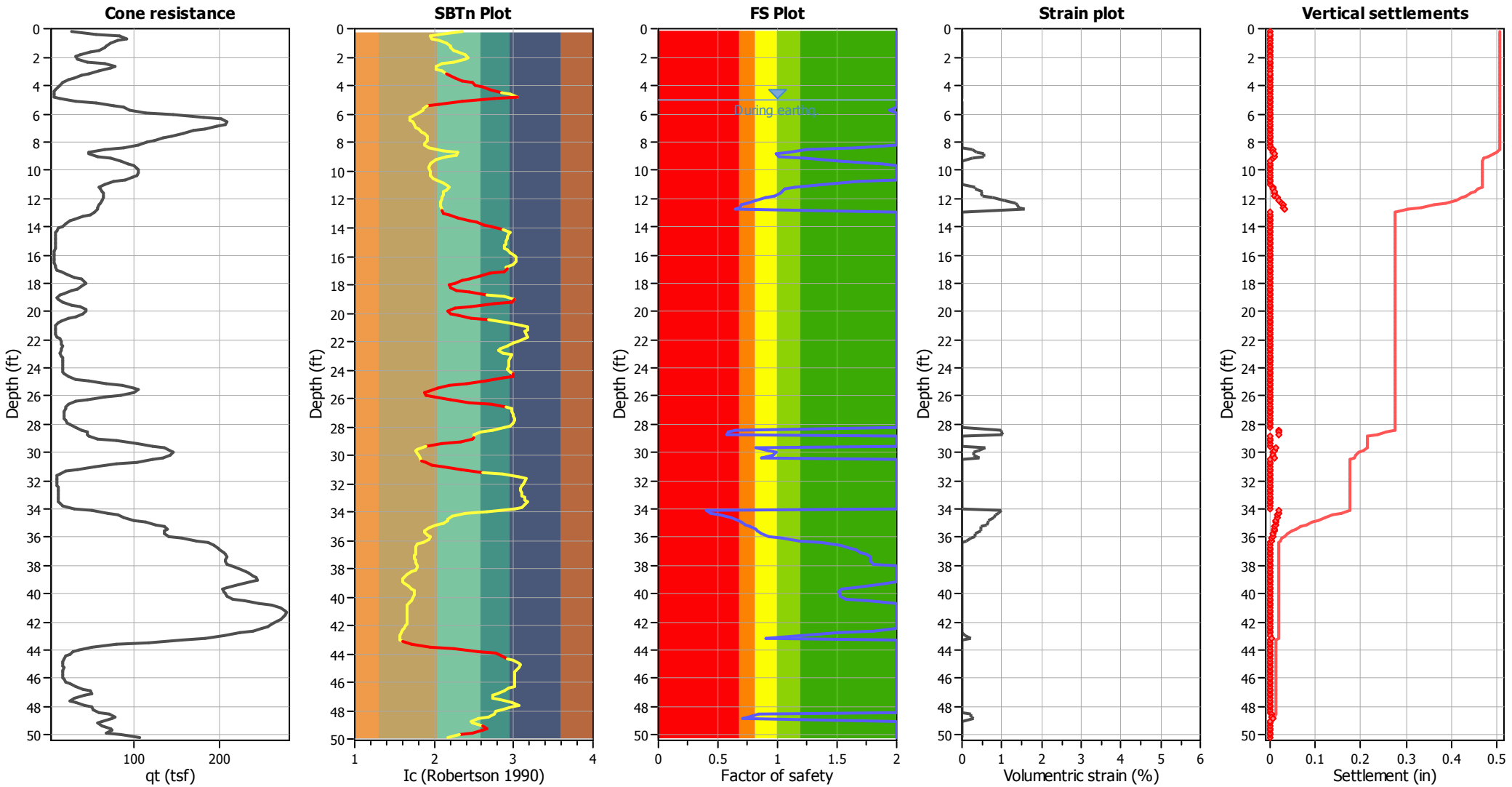




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

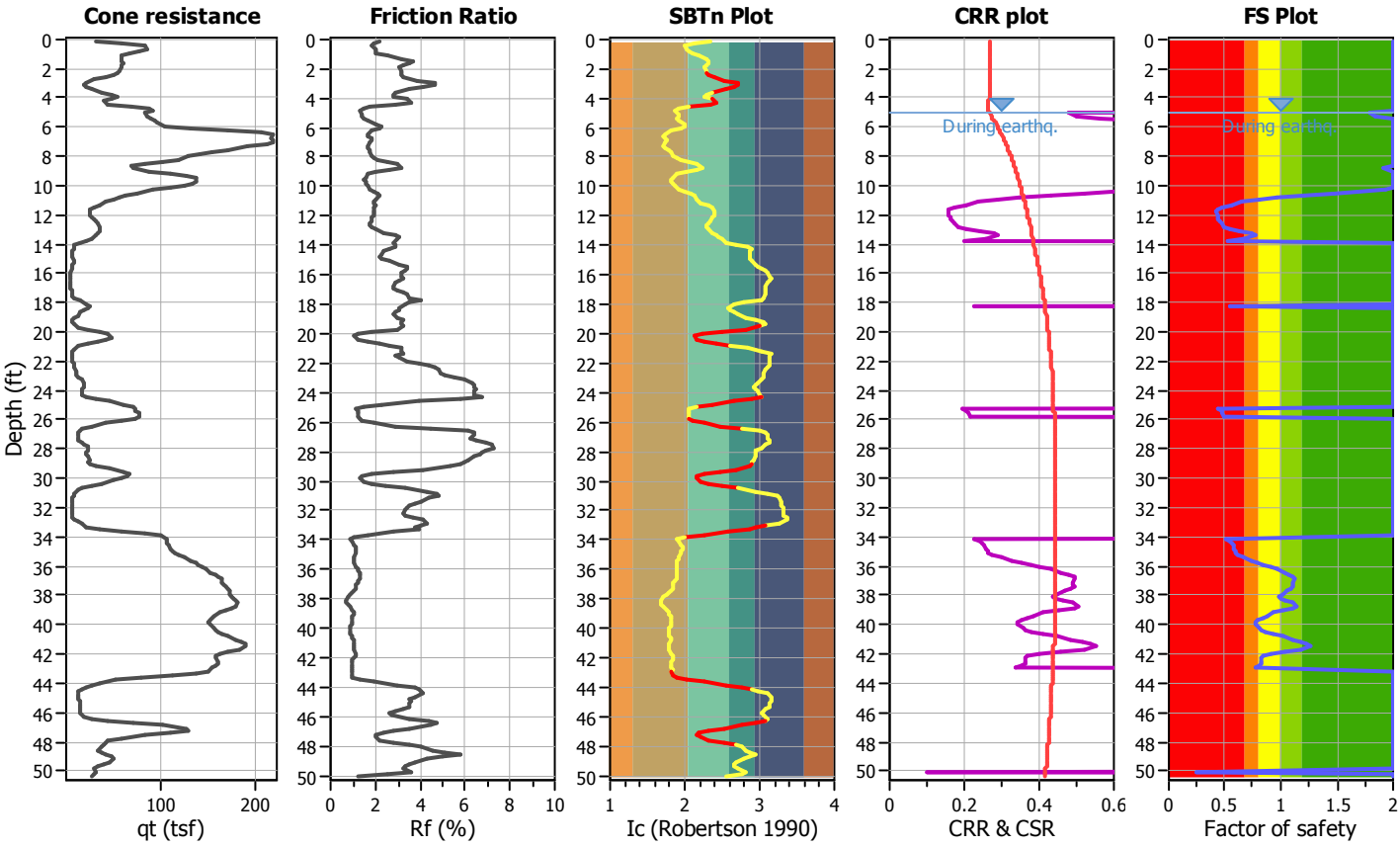
LIQUEFACTION ANALYSIS REPORT

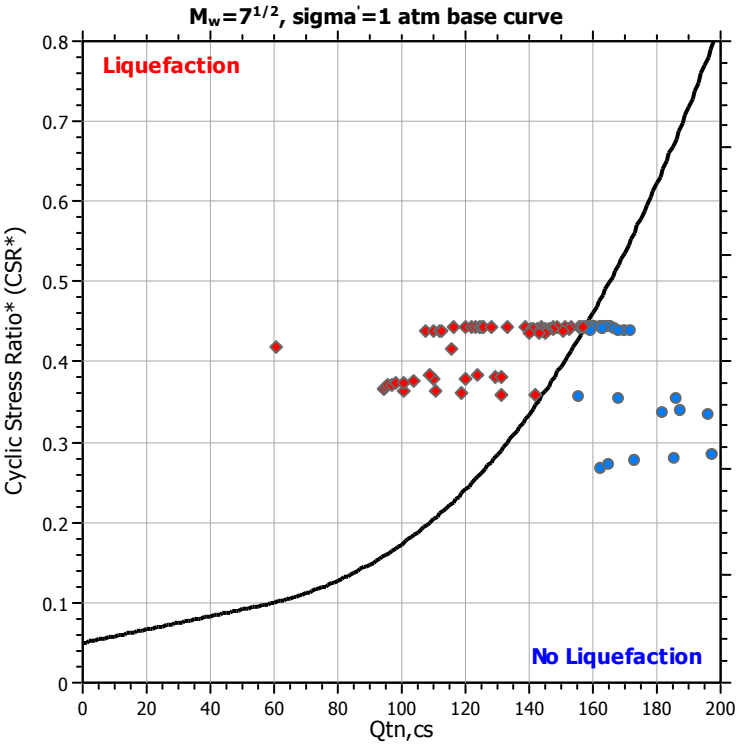
Project title : Shea Properties/Cypress **Location : Cypress, California**

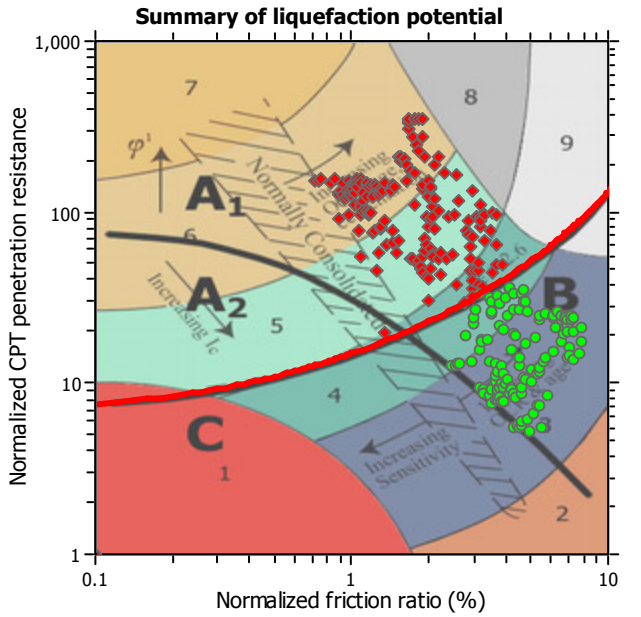
CPT file : CPT- 8

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

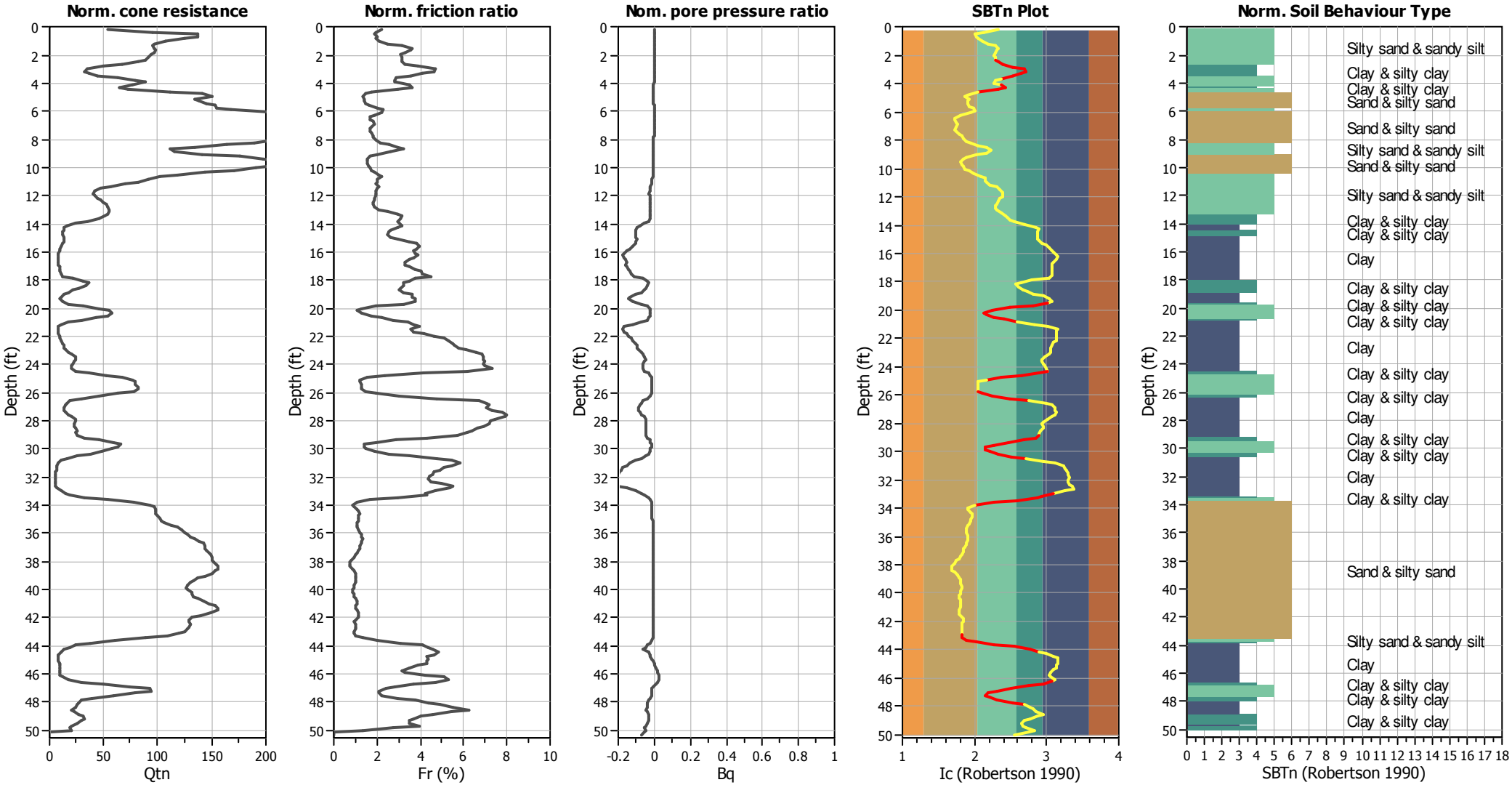






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



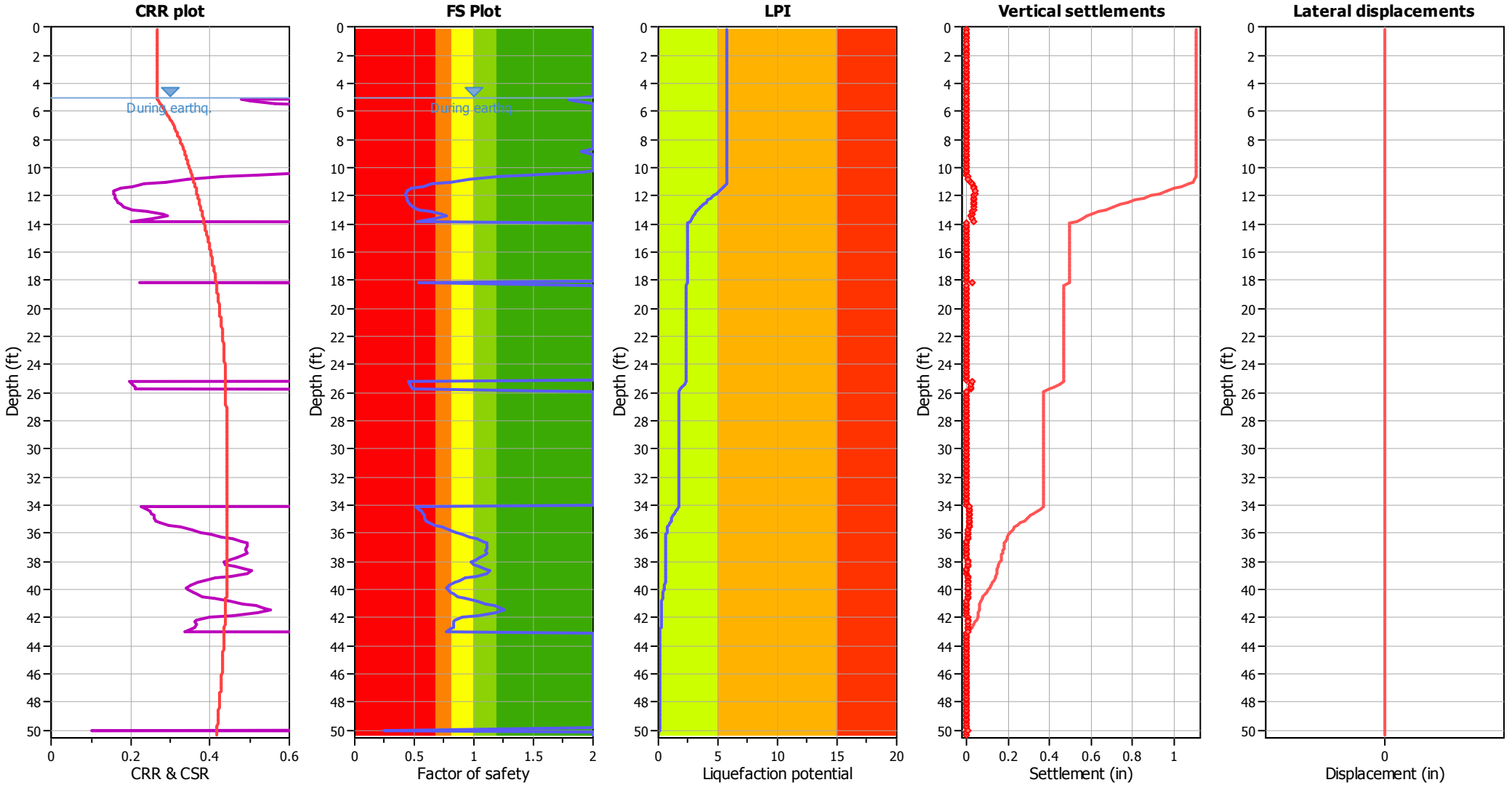
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

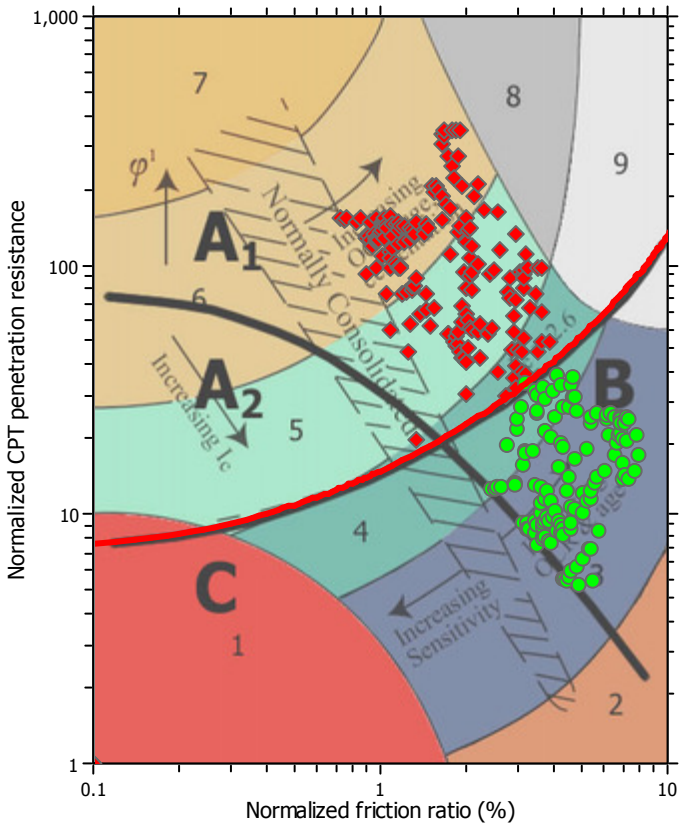
F.S. color scheme

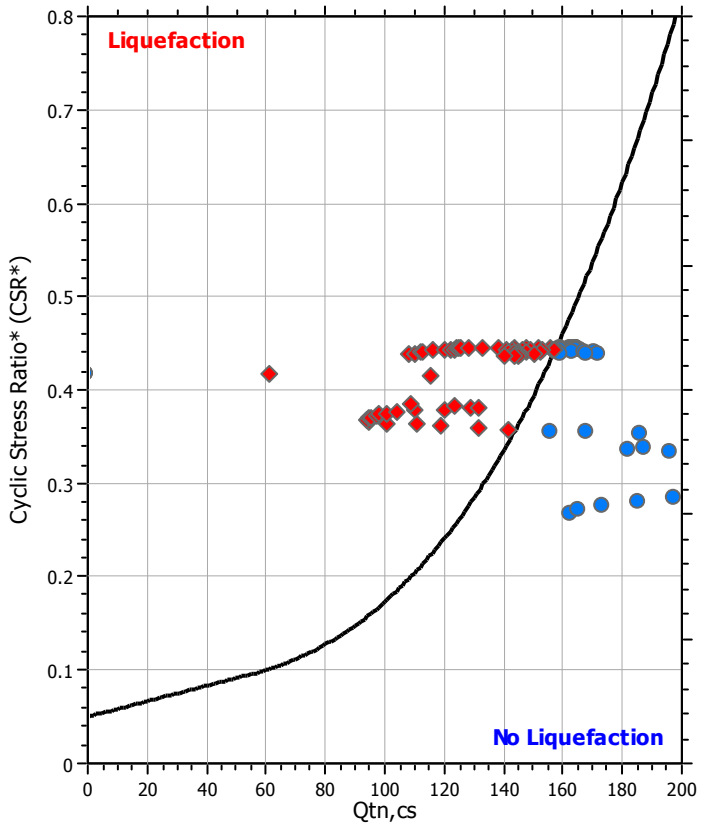
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

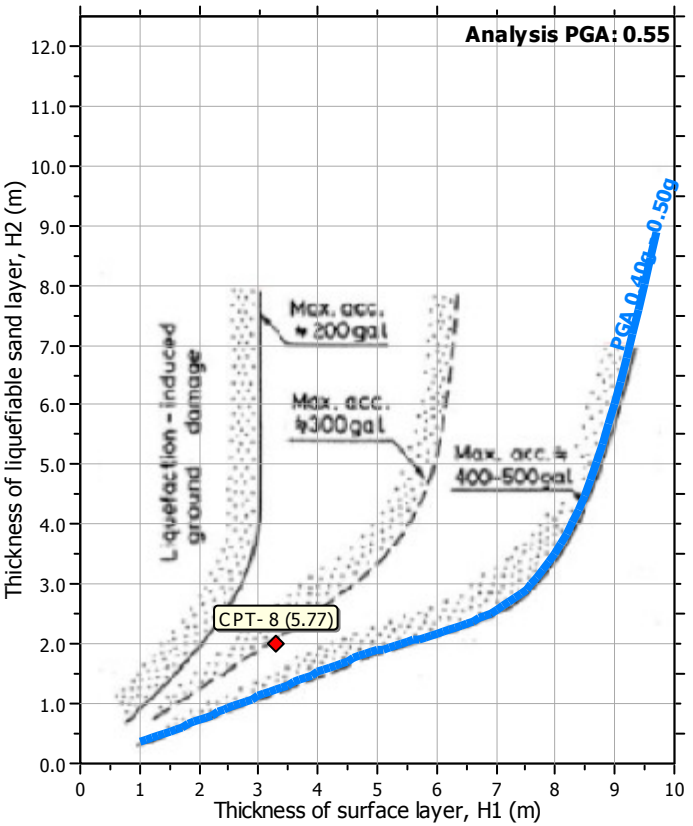
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



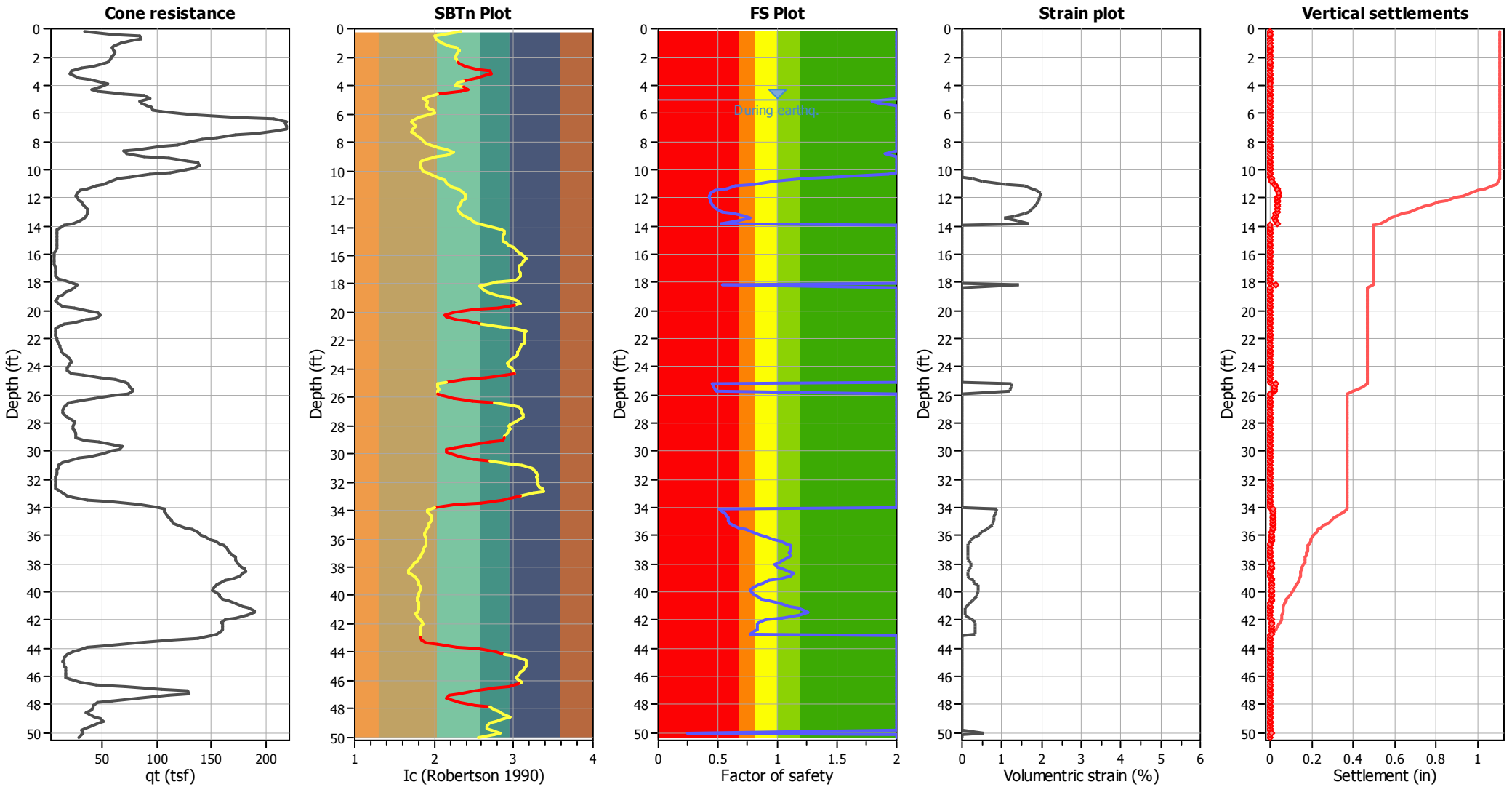




Input parameters and analysis data

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_σ 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
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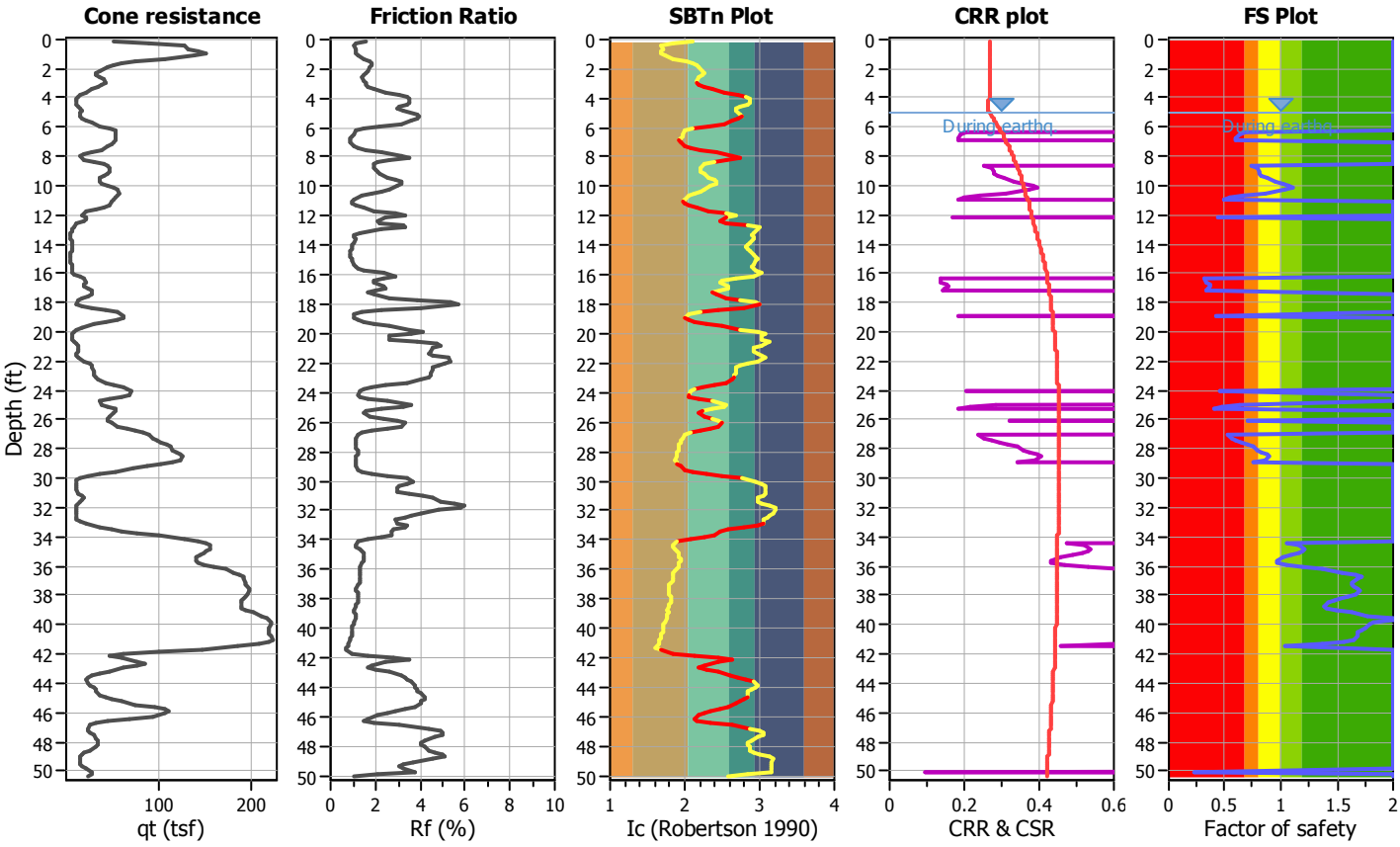
LIQUEFACTION ANALYSIS REPORT

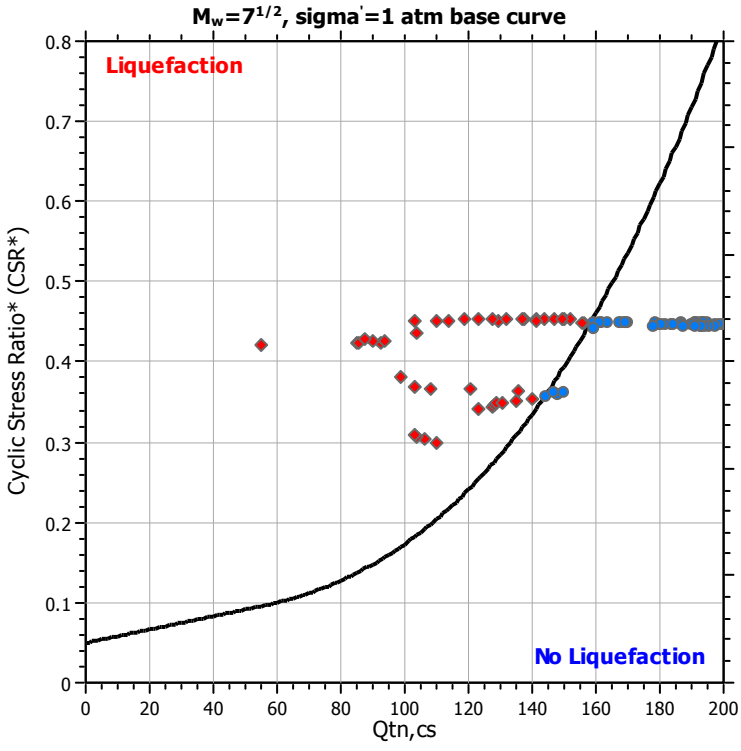
Project title : Shea Properties/Cypress **Location : Cypress, California**

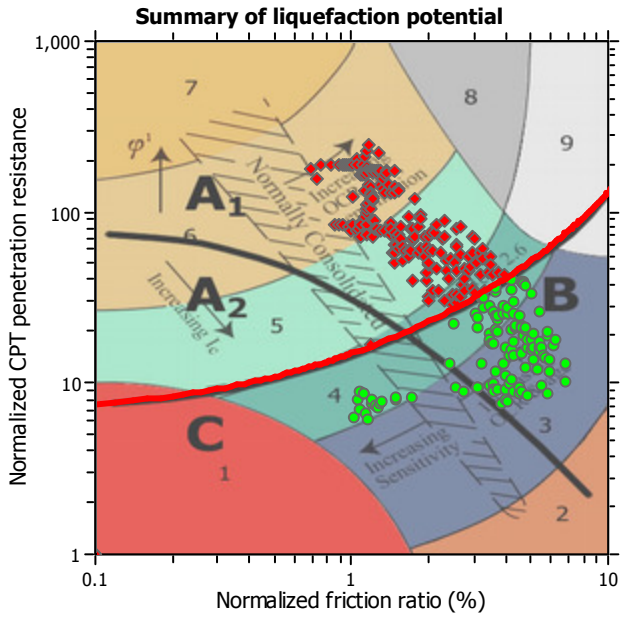
CPT file : CPT- 9

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

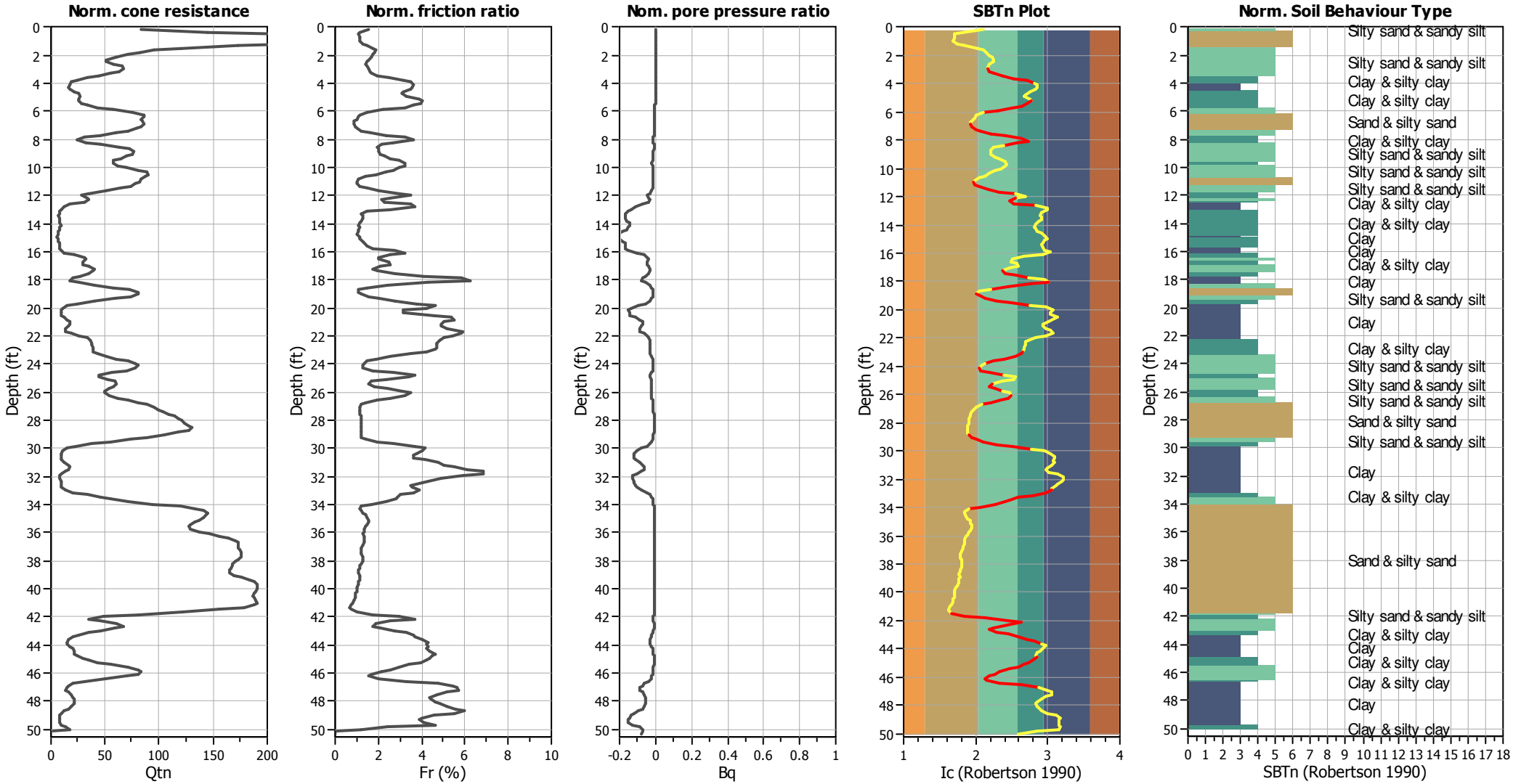






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



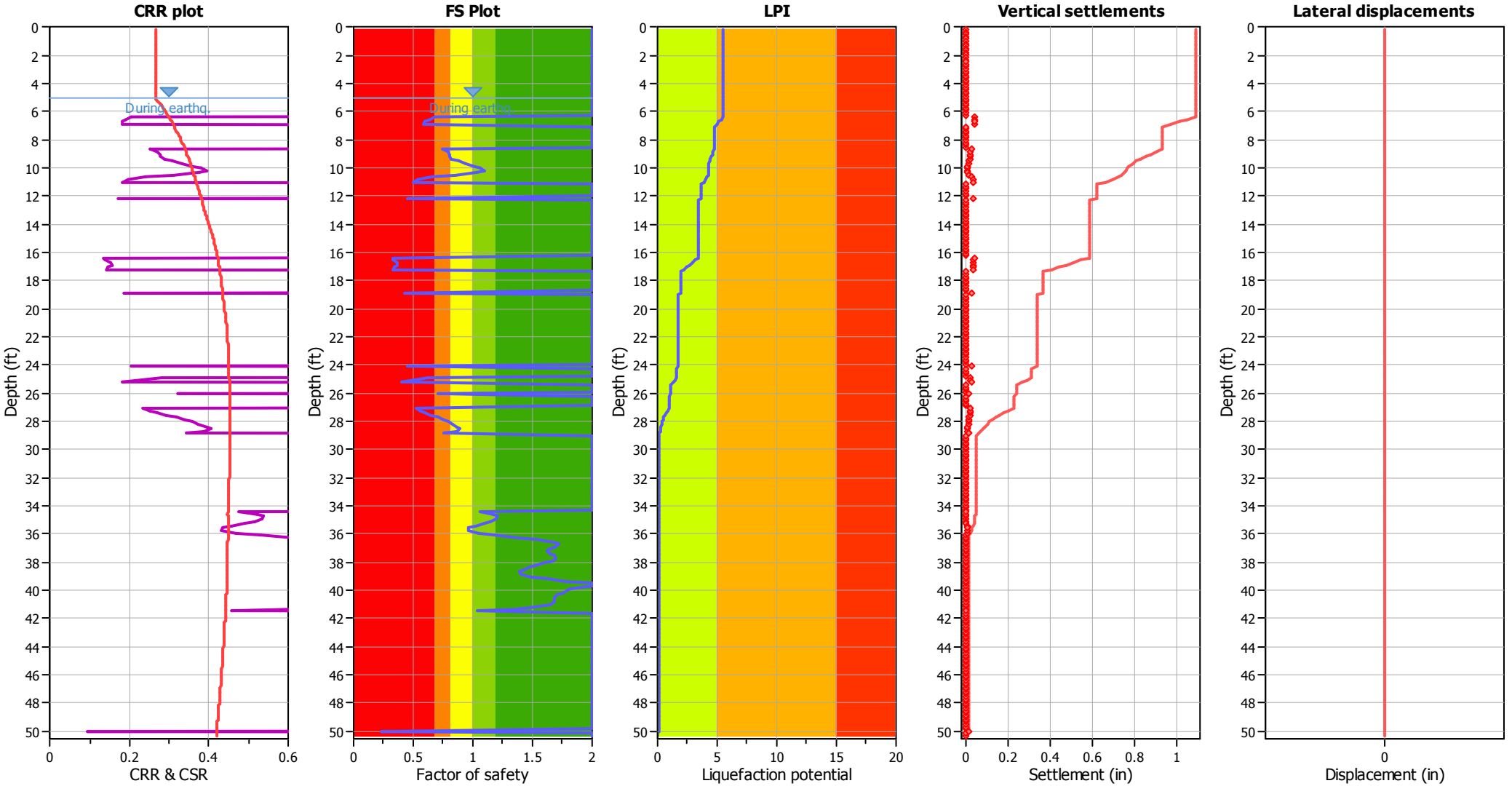
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

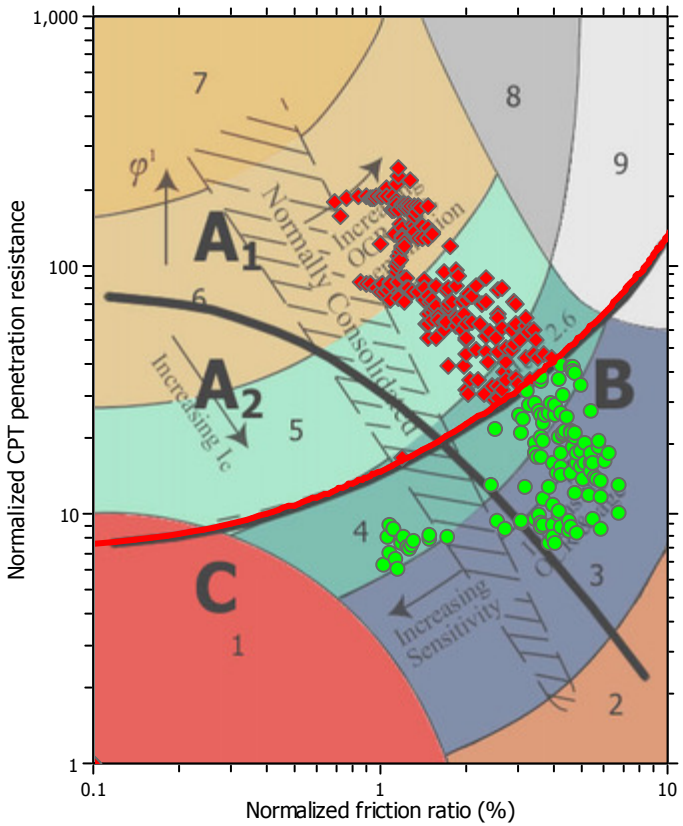
F.S. color scheme

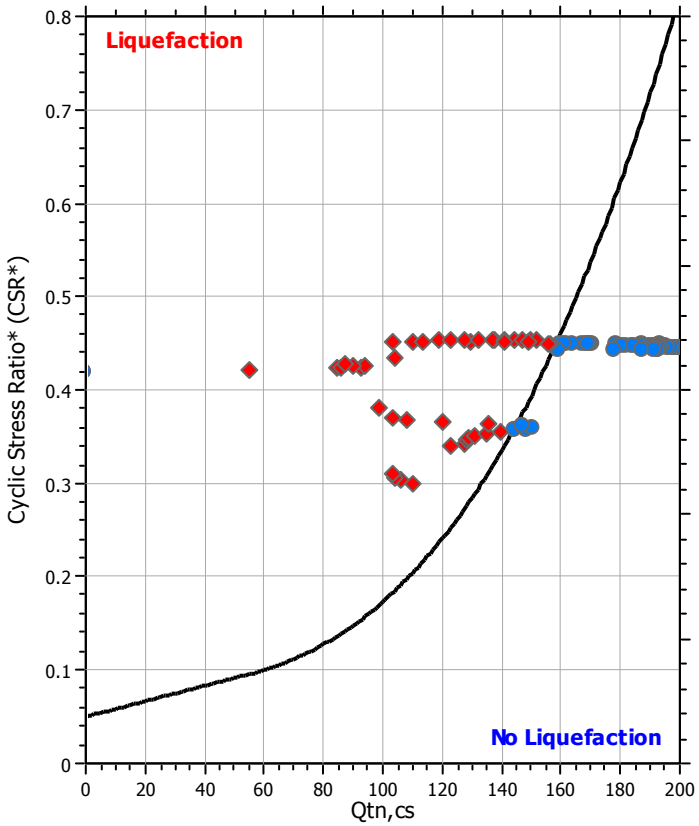
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

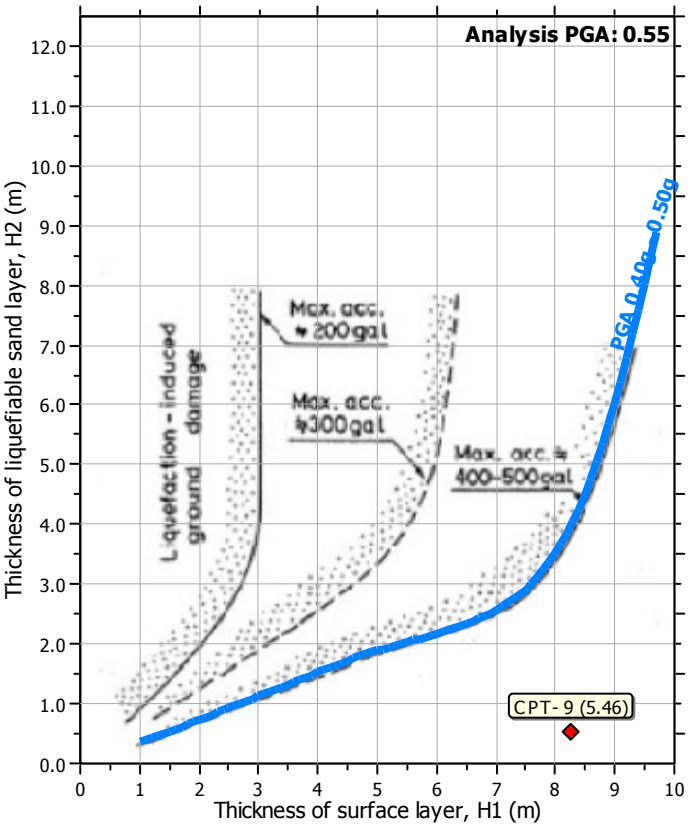
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



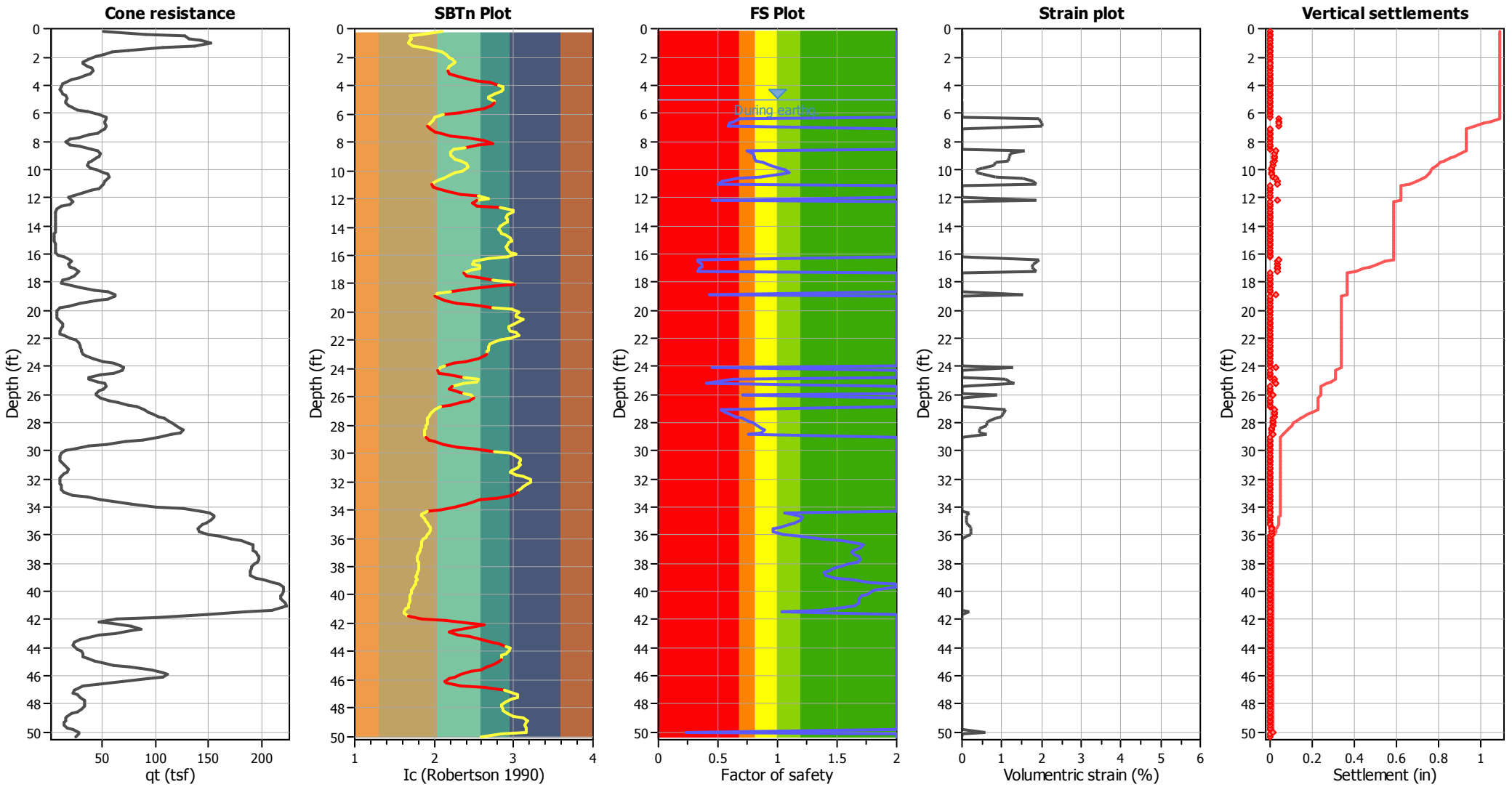




Input parameters and analysis data

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_σ 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)
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Volumentric strain:	Post-liquefaction volumentric strain

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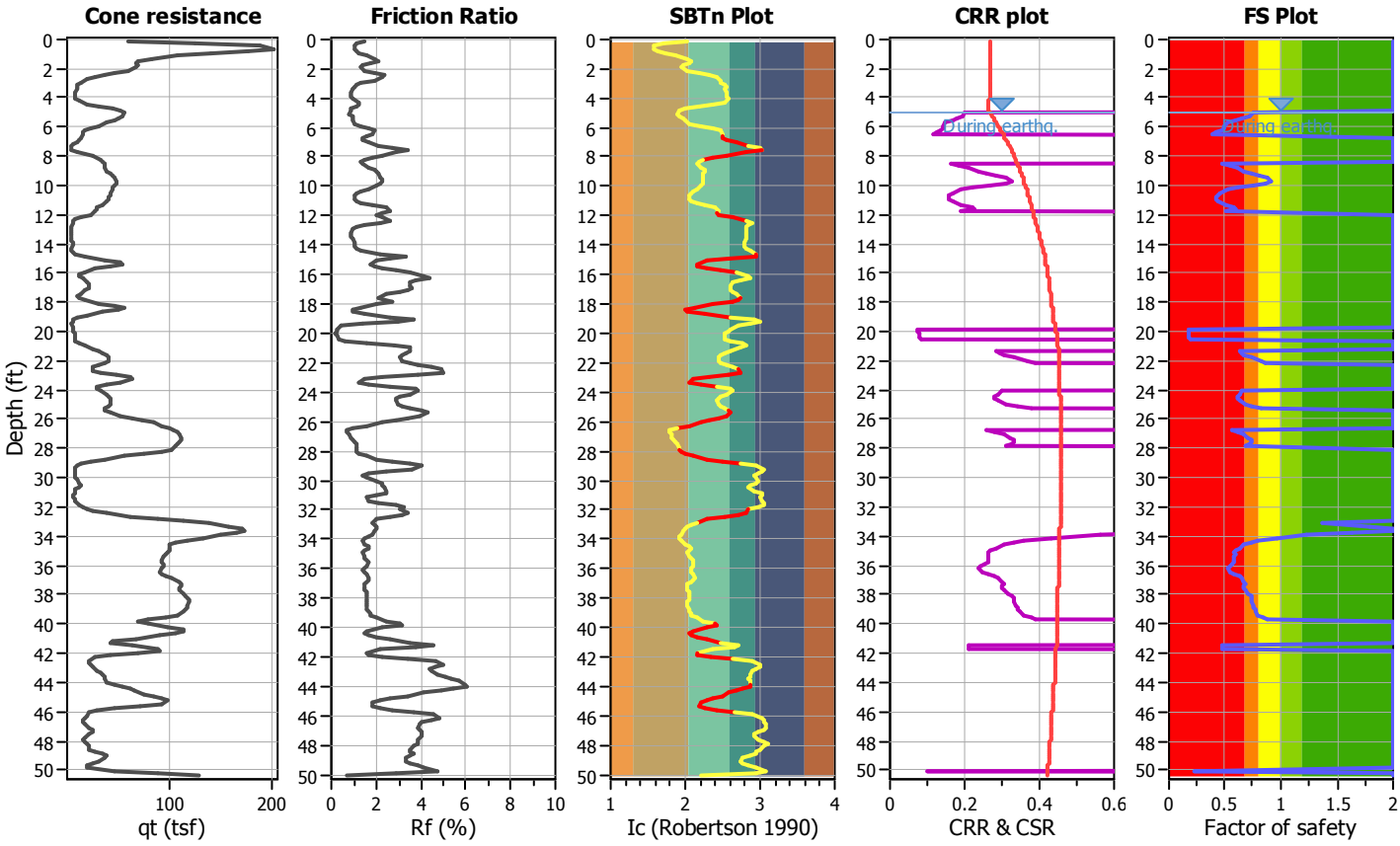
LIQUEFACTION ANALYSIS REPORT

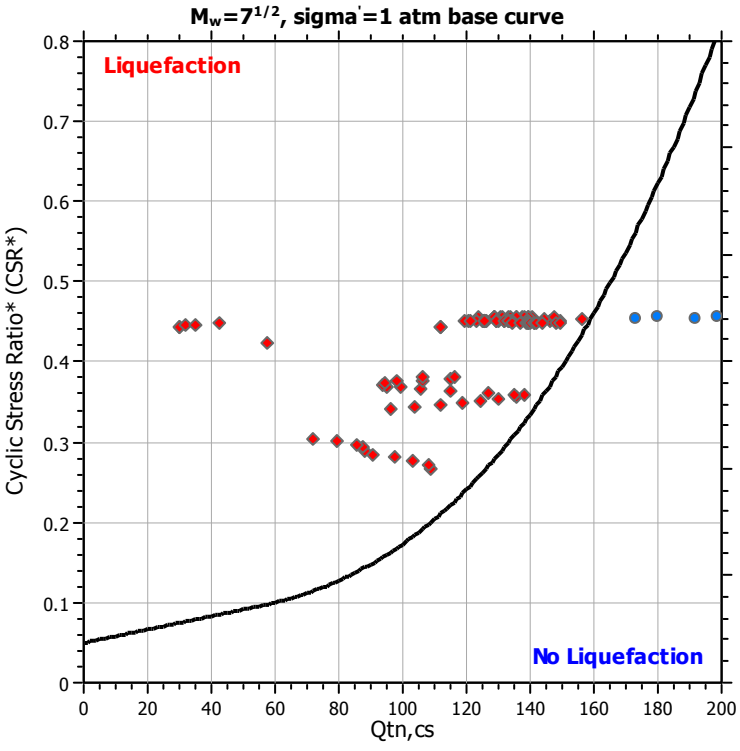
Project title : Shea Properties/Cypress **Location : Cypress, California**

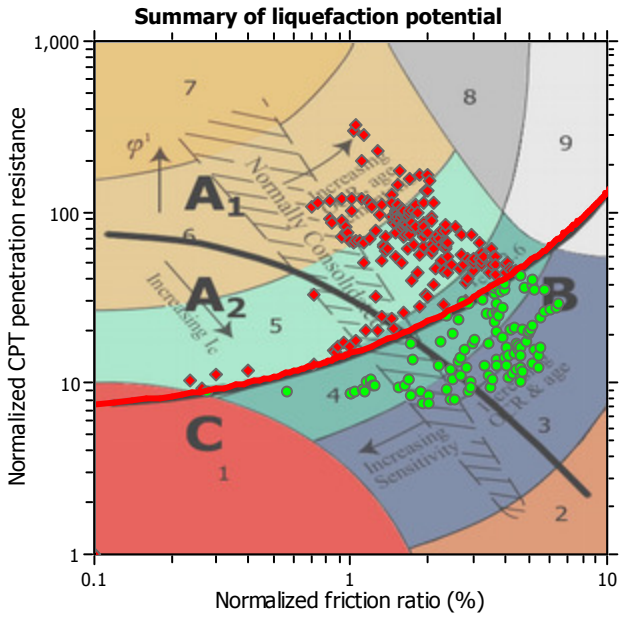
CPT file : CPT-10

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

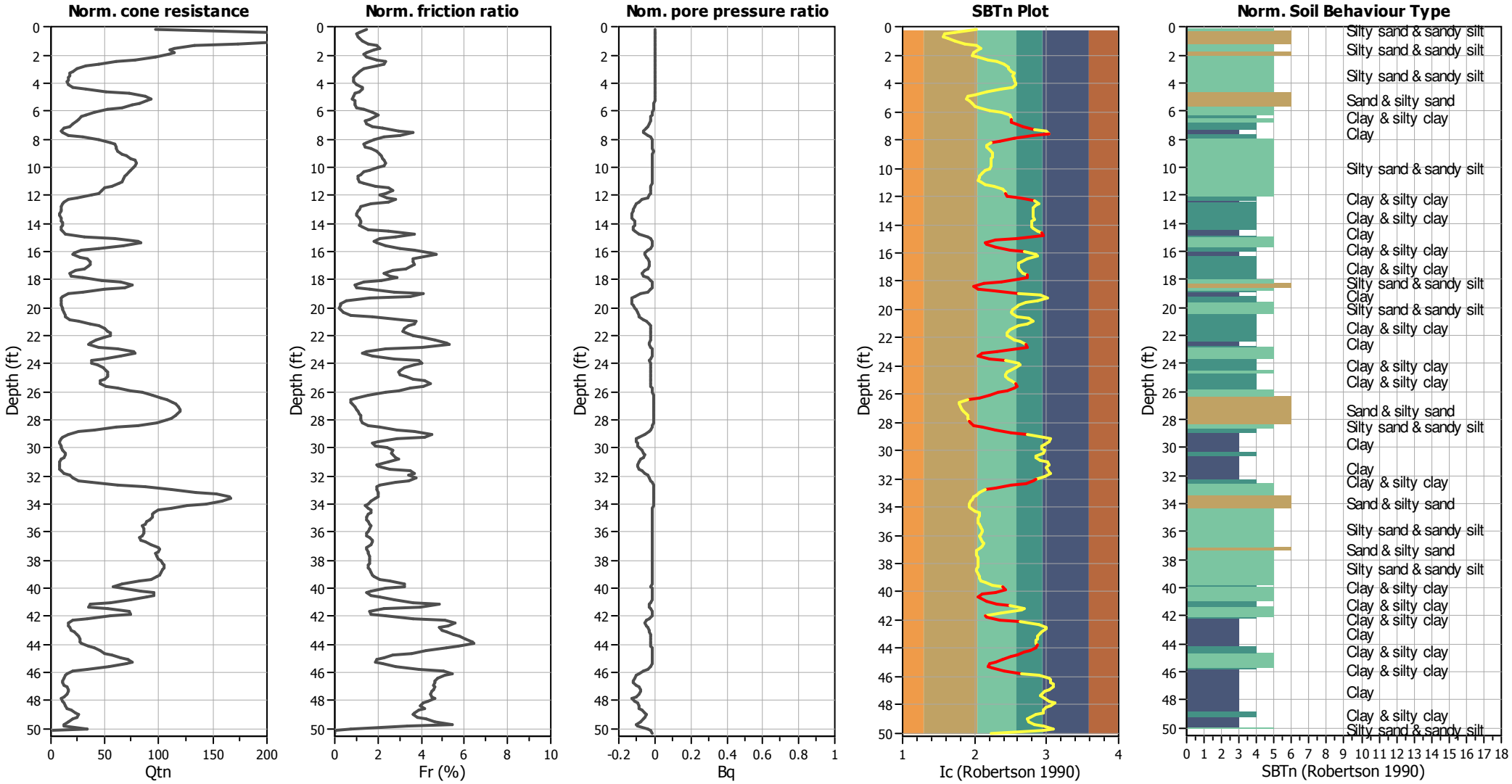






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
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CPT basic interpretation plots (normalized)



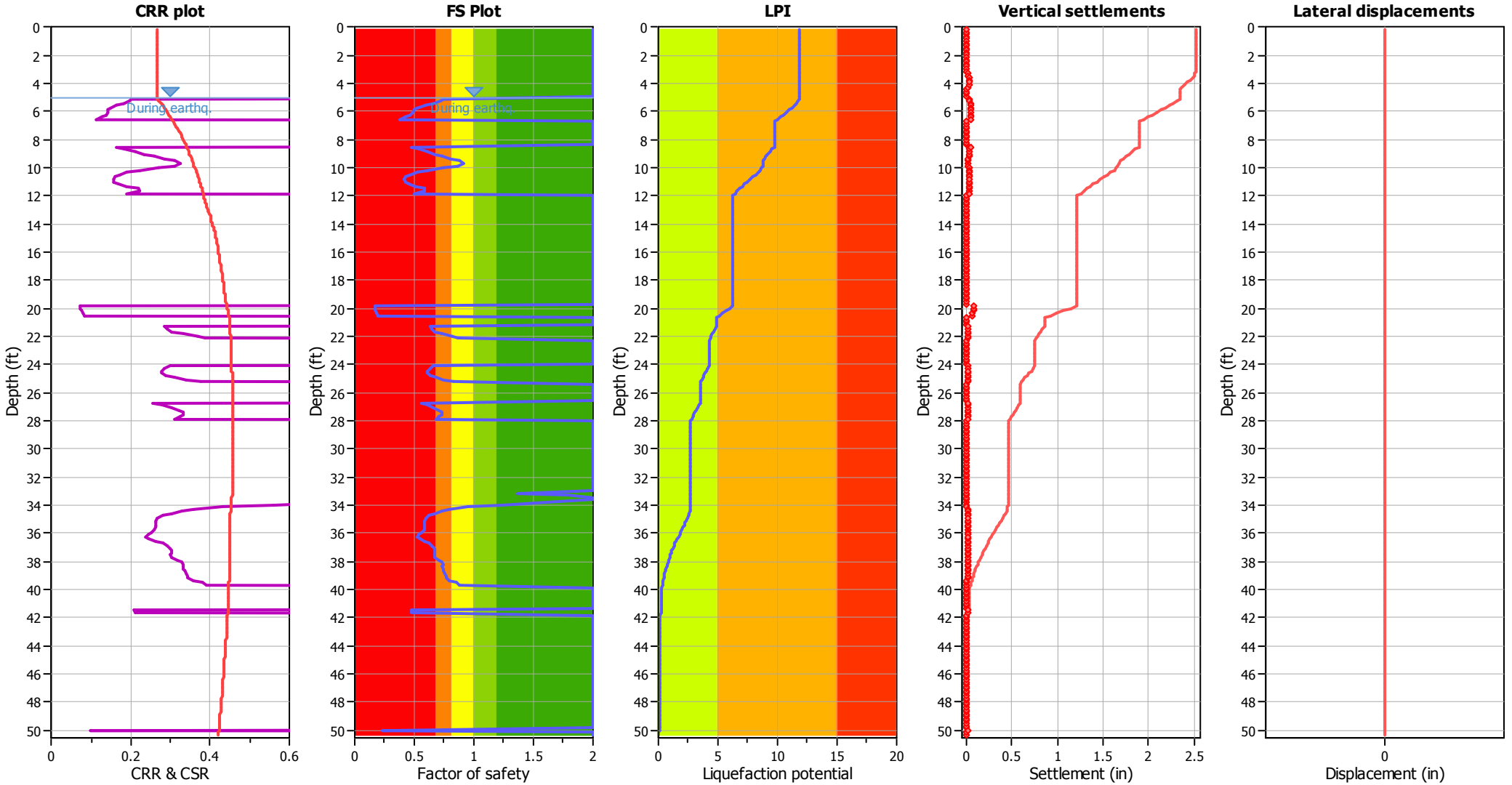
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
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8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

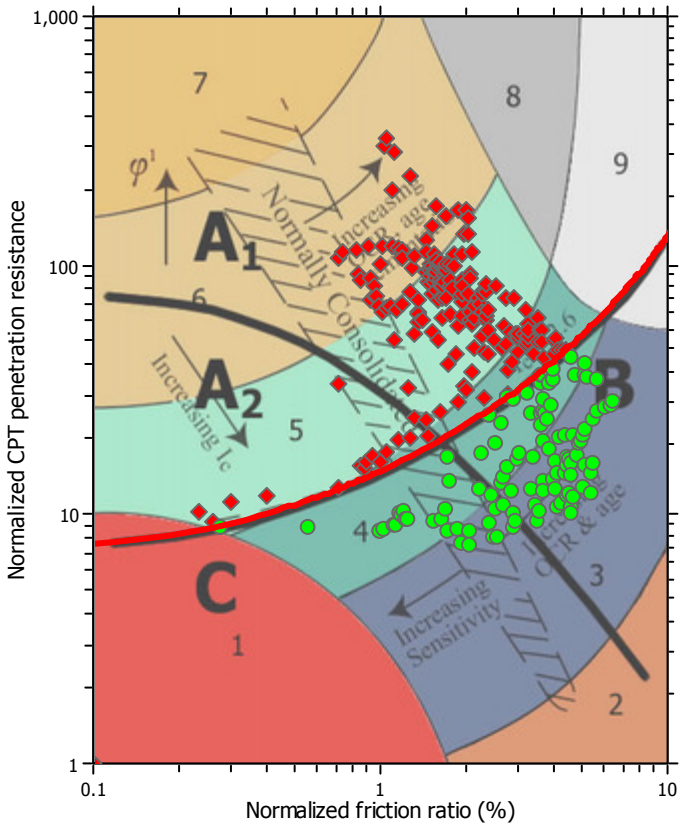
F.S. color scheme

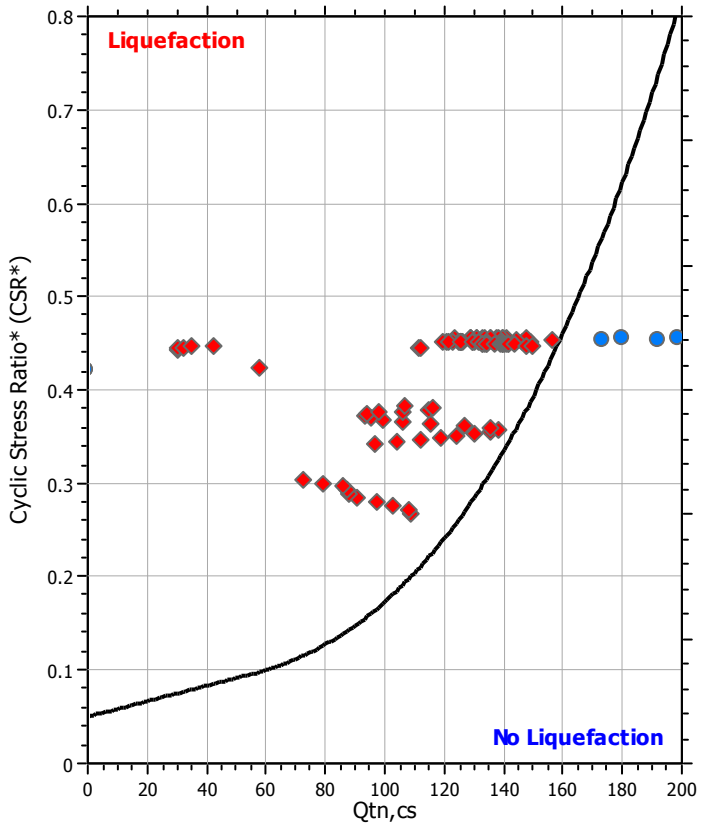
- Almost certain it will liquefy
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- Liquefaction and no liq. are equally likely
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- Almost certain it will not liquefy

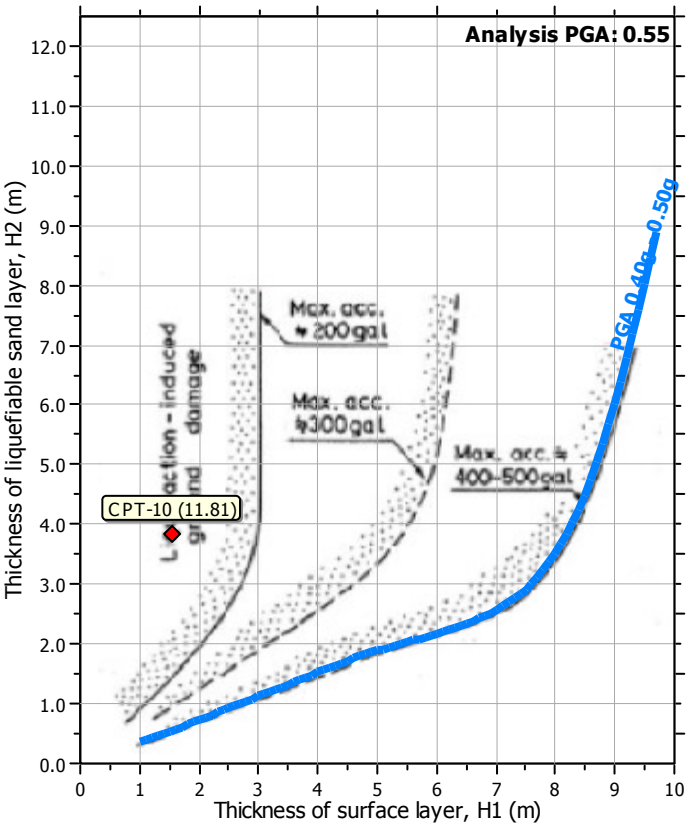
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



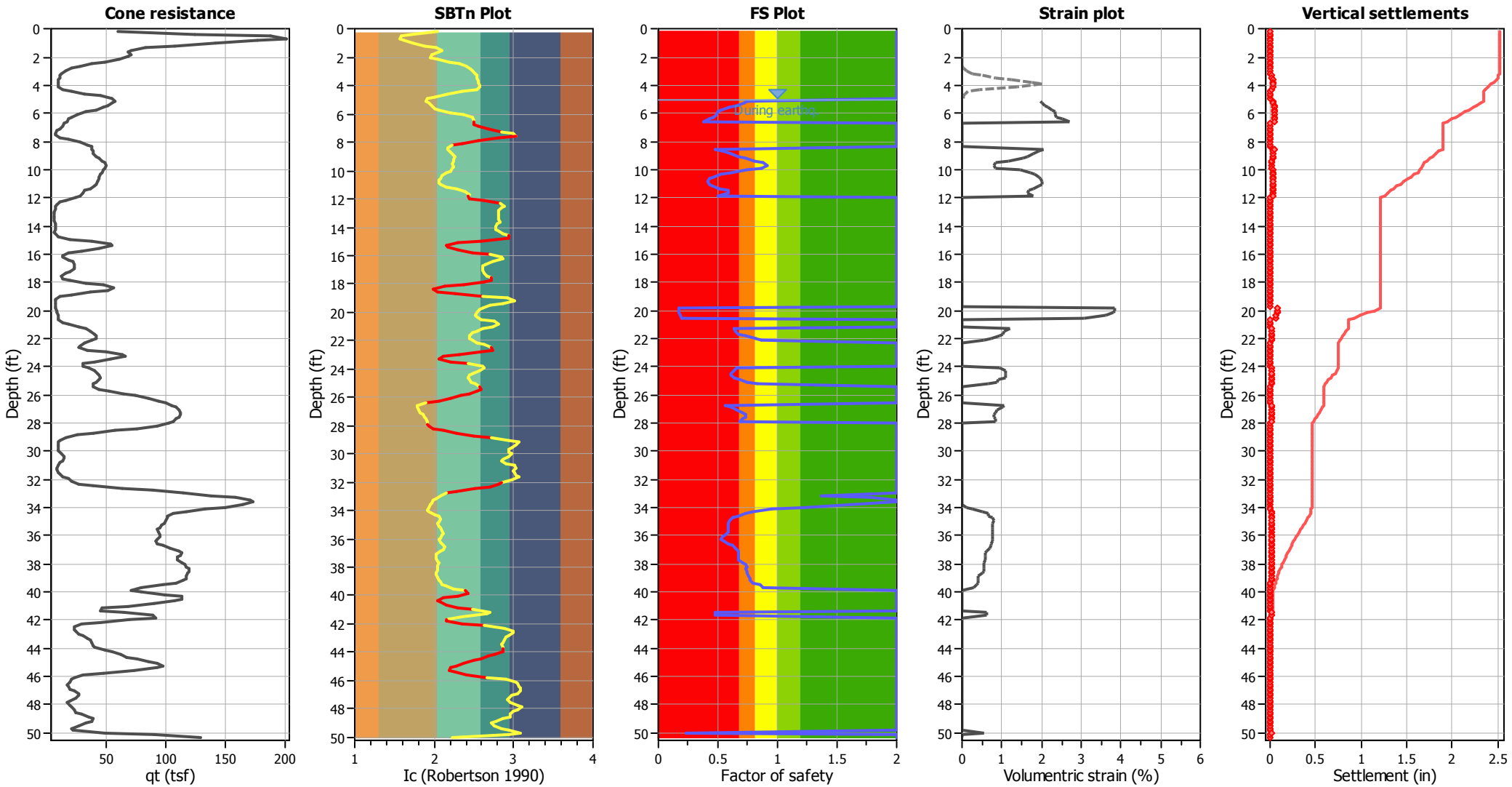




Input parameters and analysis data

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_σ 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

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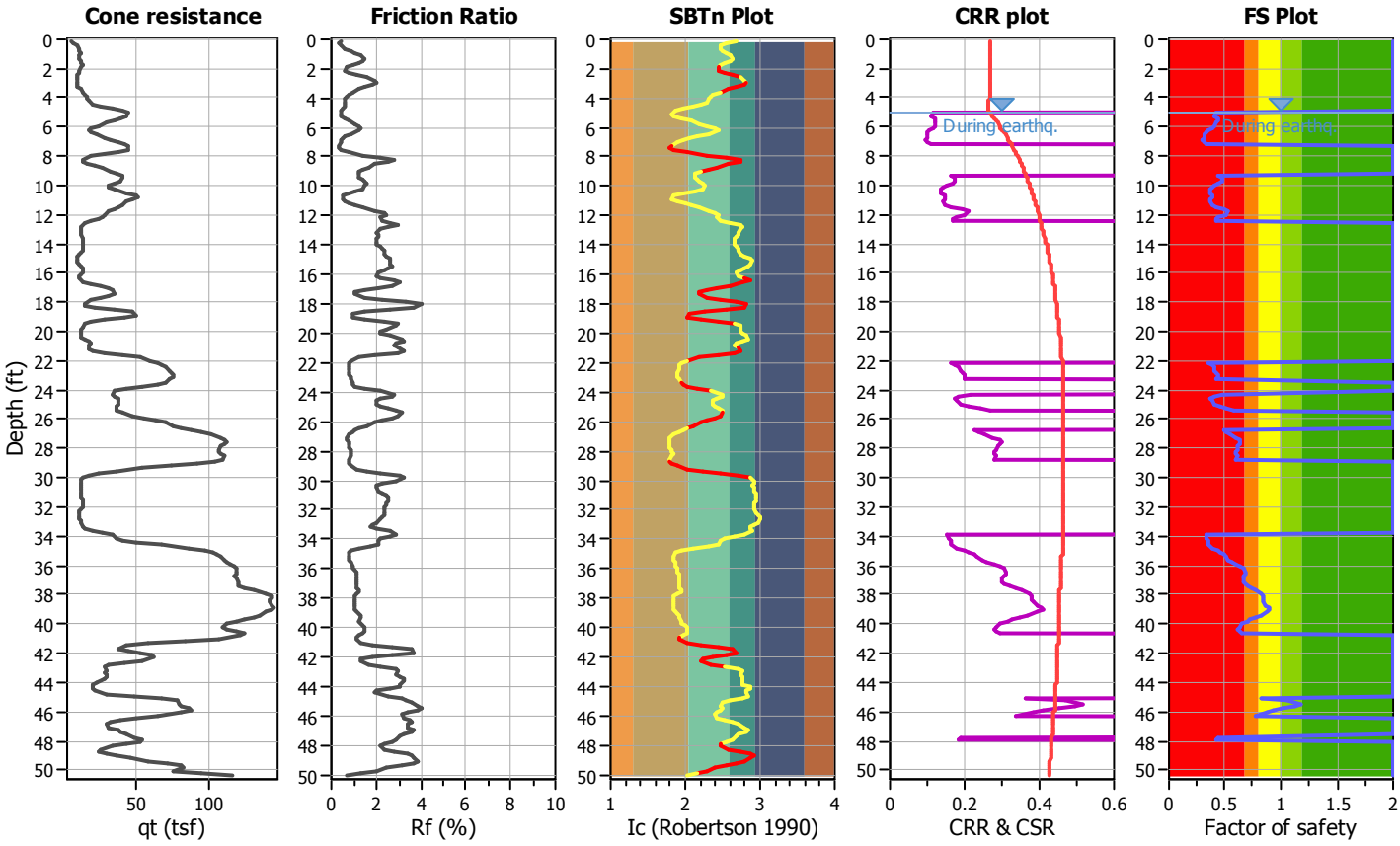
LIQUEFACTION ANALYSIS REPORT

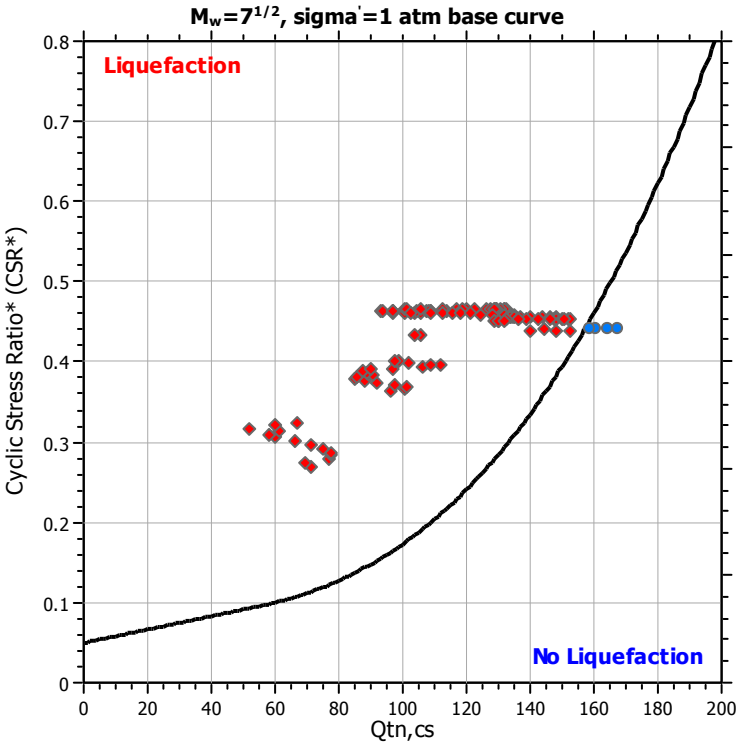
Project title : Shea Properties/Cypress **Location : Cypress, California**

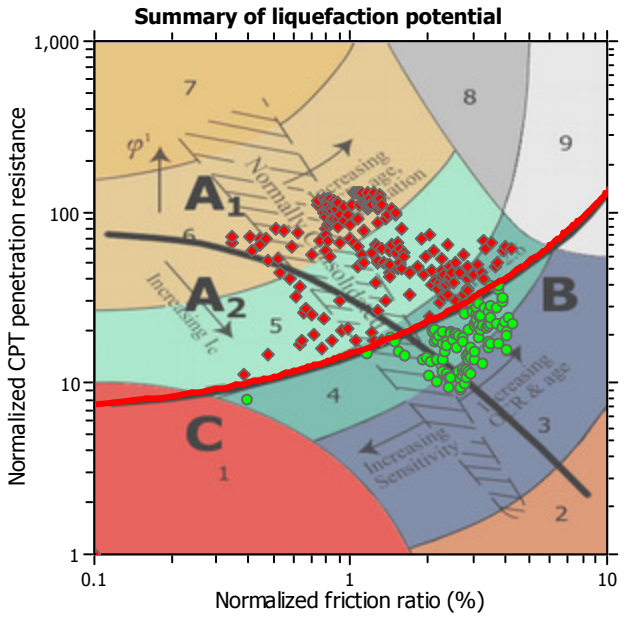
CPT file : CPT-11

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

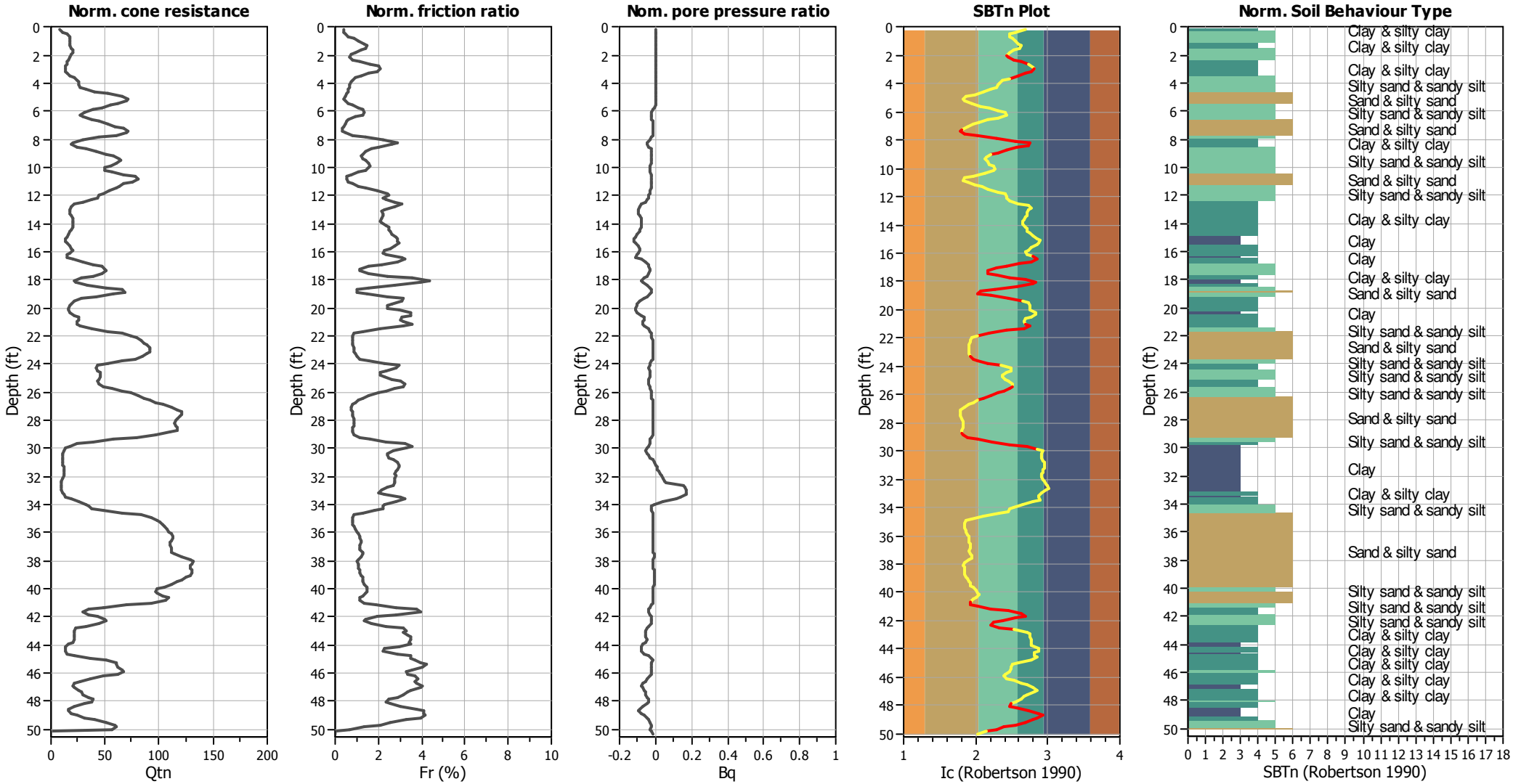






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



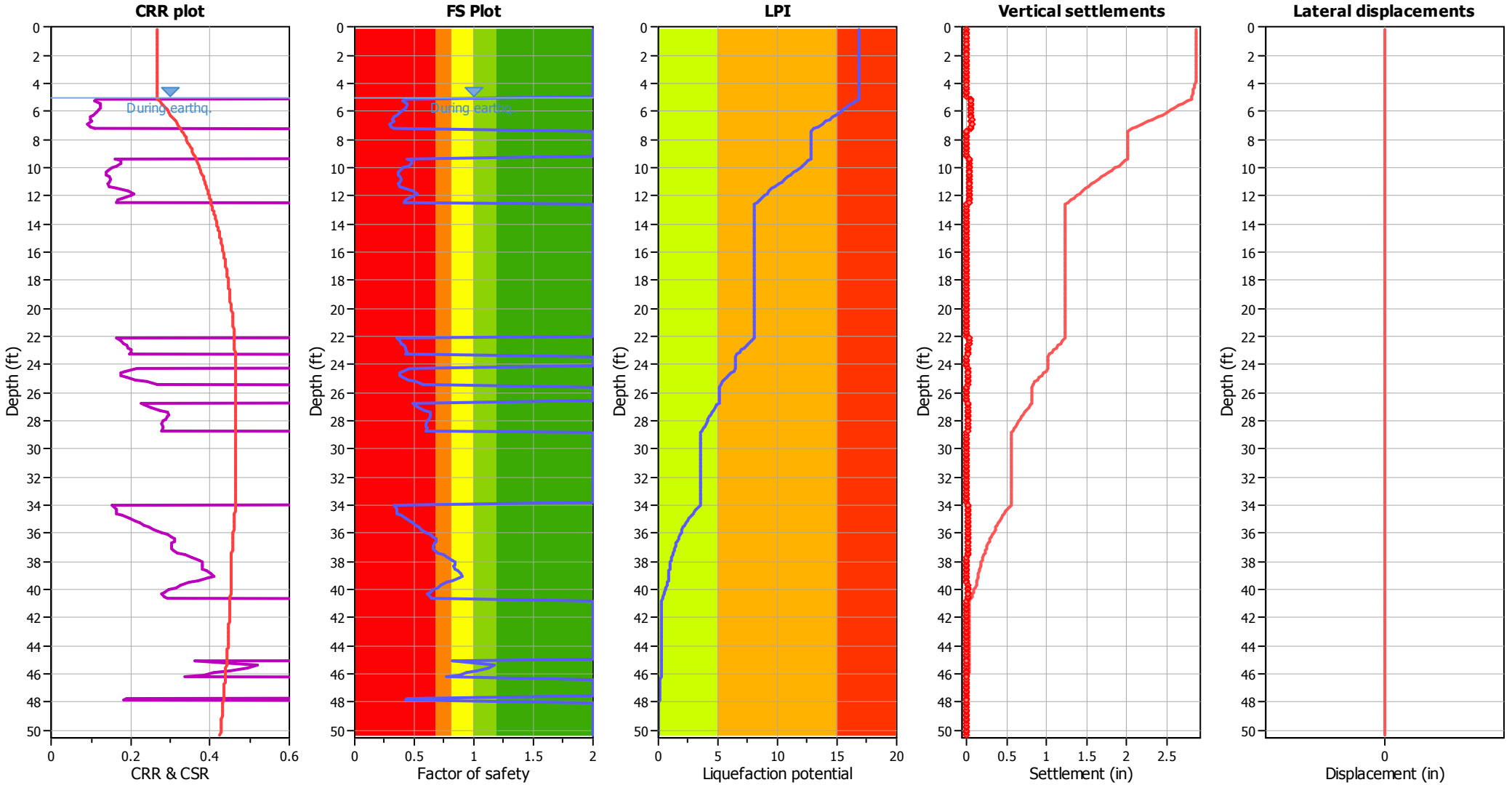
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

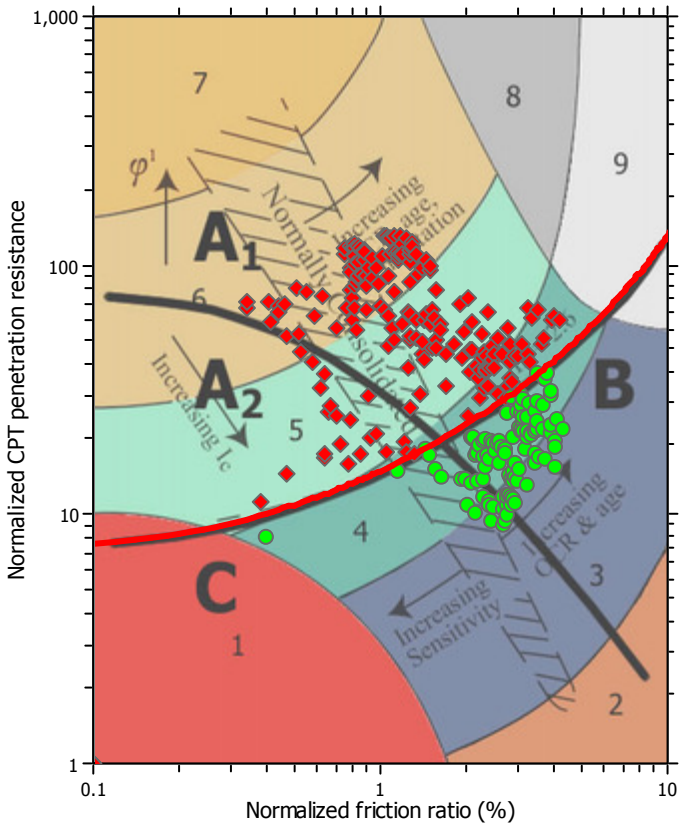
F.S. color scheme

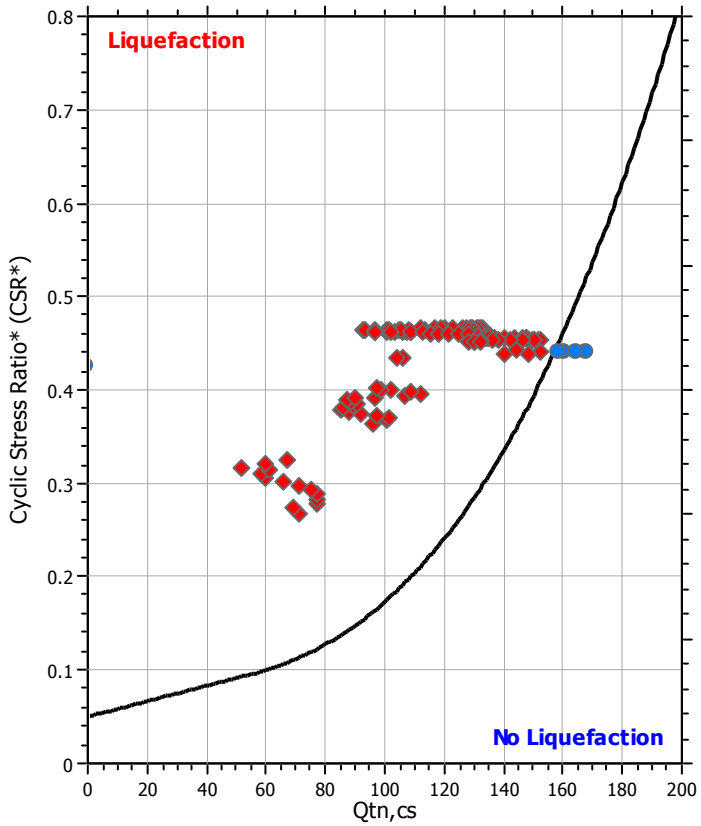
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

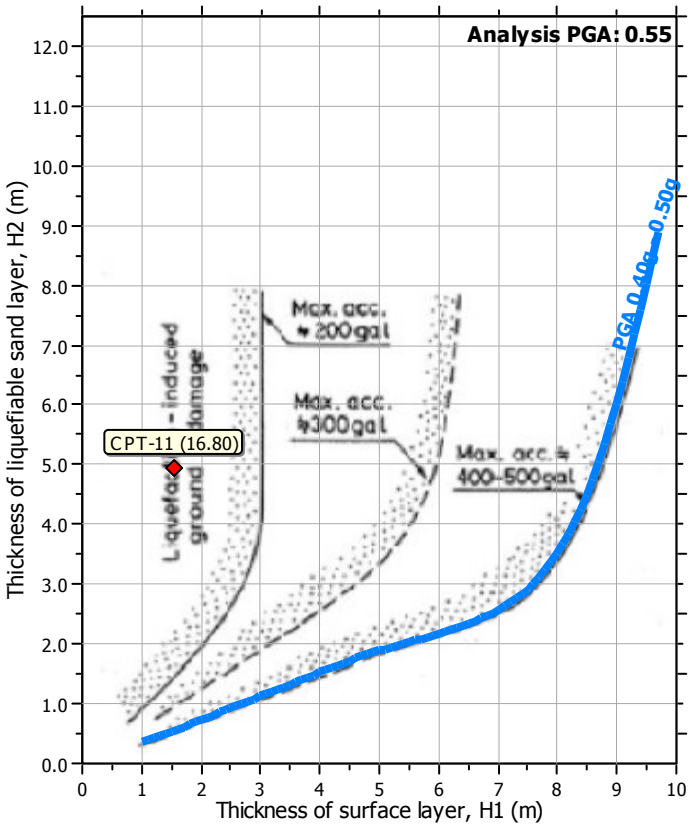
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



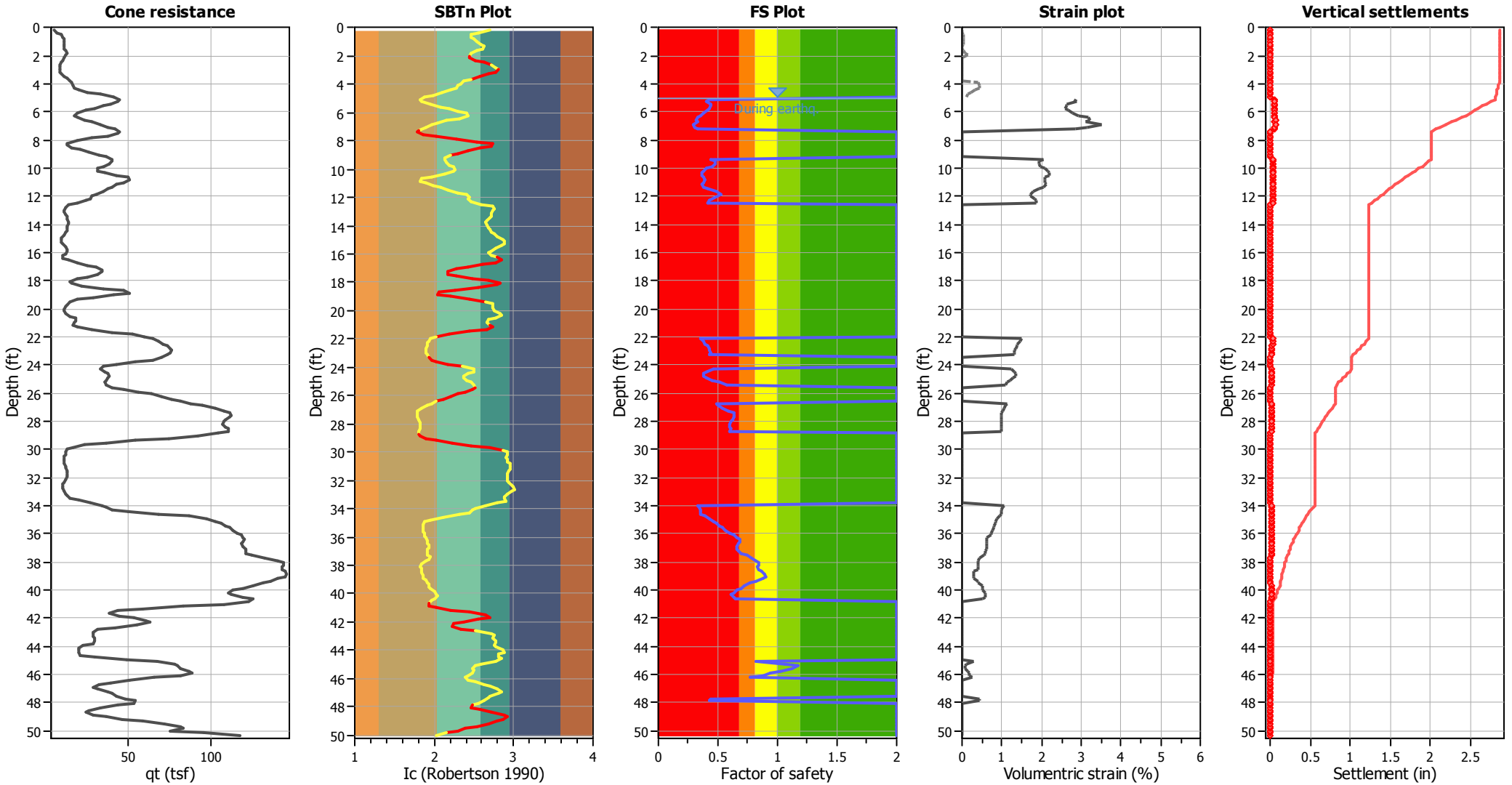




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

NMG Geotechnical, Inc.
17991 Fitch
Irvine, CA 92614

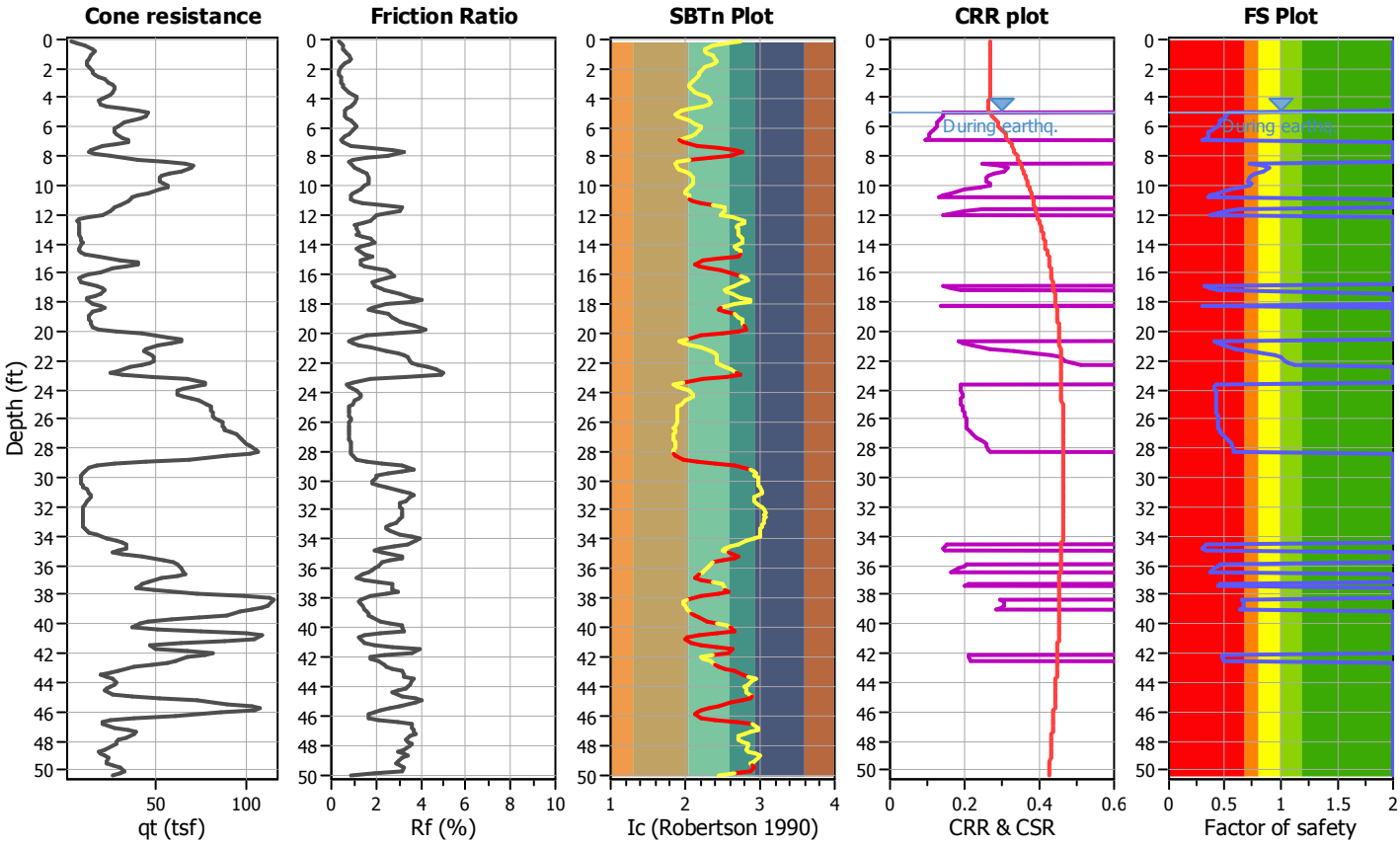
LIQUEFACTION ANALYSIS REPORT

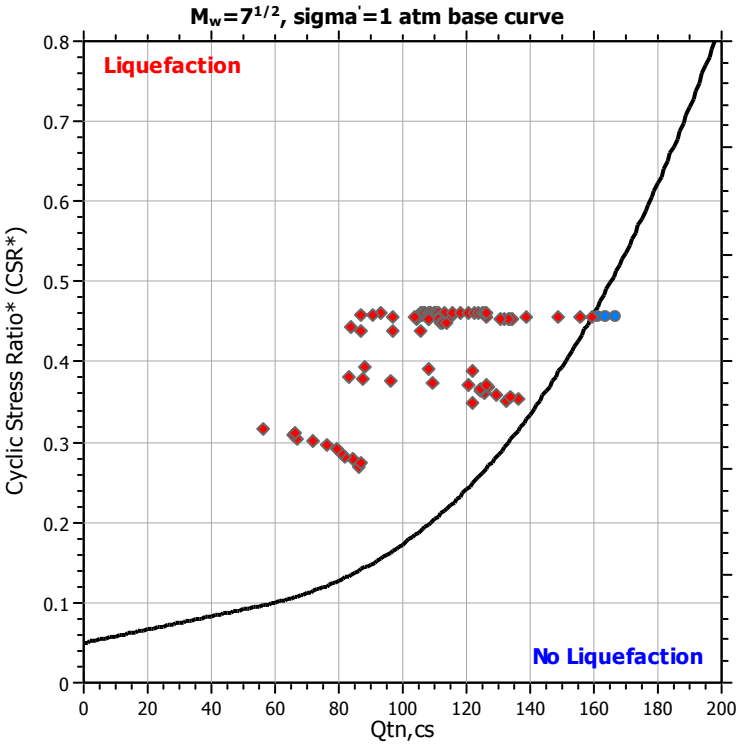
Project title : Shea Properties/Cypress **Location : Cypress, California**

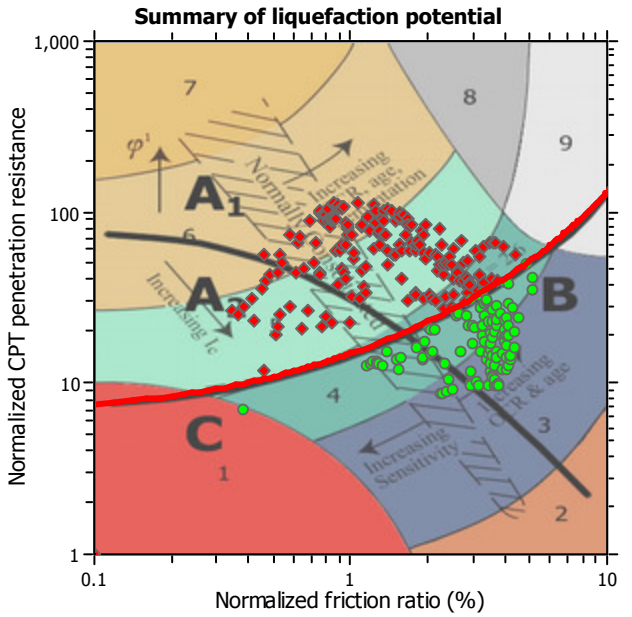
CPT file : CPT-12

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

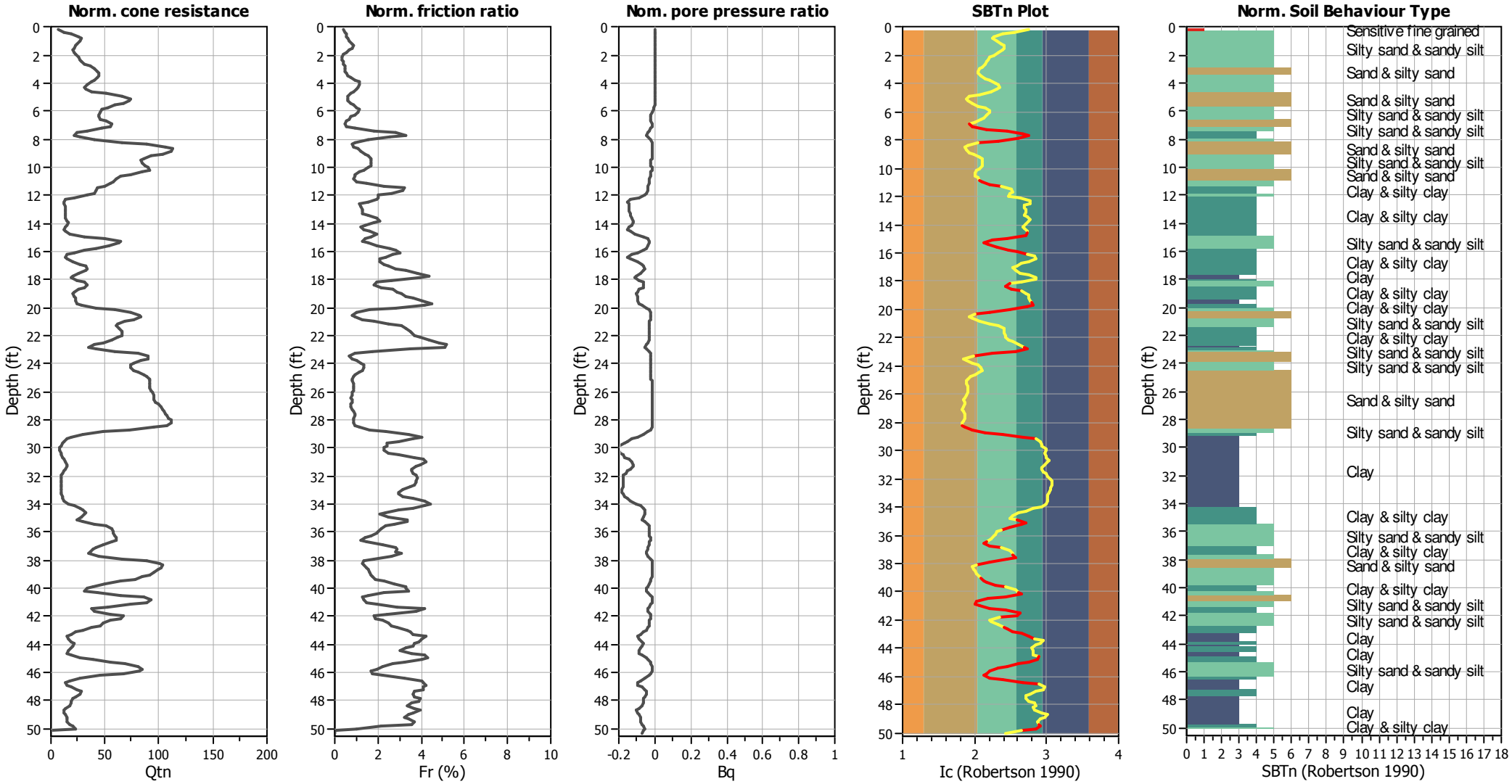






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
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CPT basic interpretation plots (normalized)



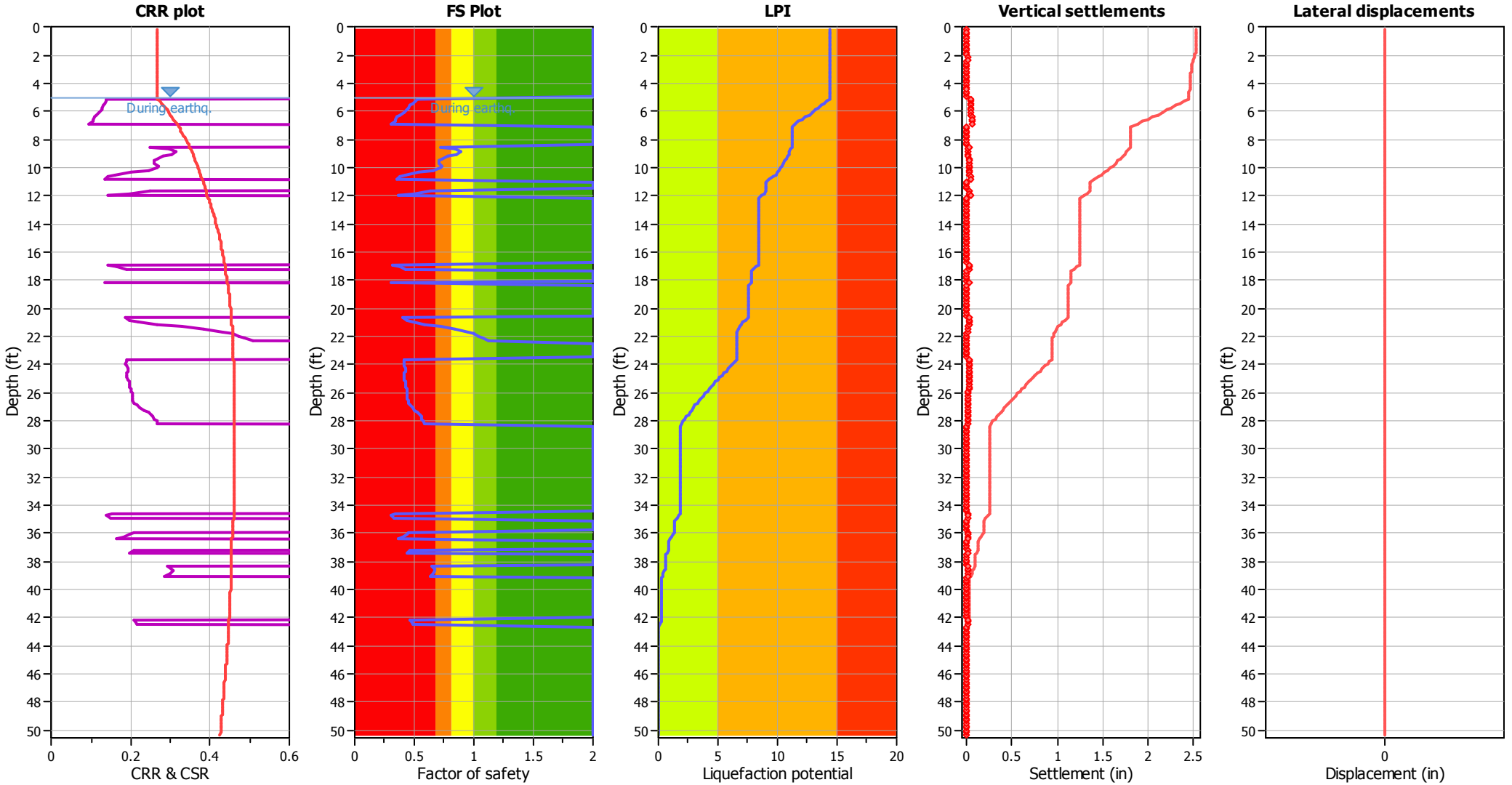
Input parameters and analysis data

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_σ 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

SBTn legend

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Liquefaction analysis overall plots



Input parameters and analysis data

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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_σ 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

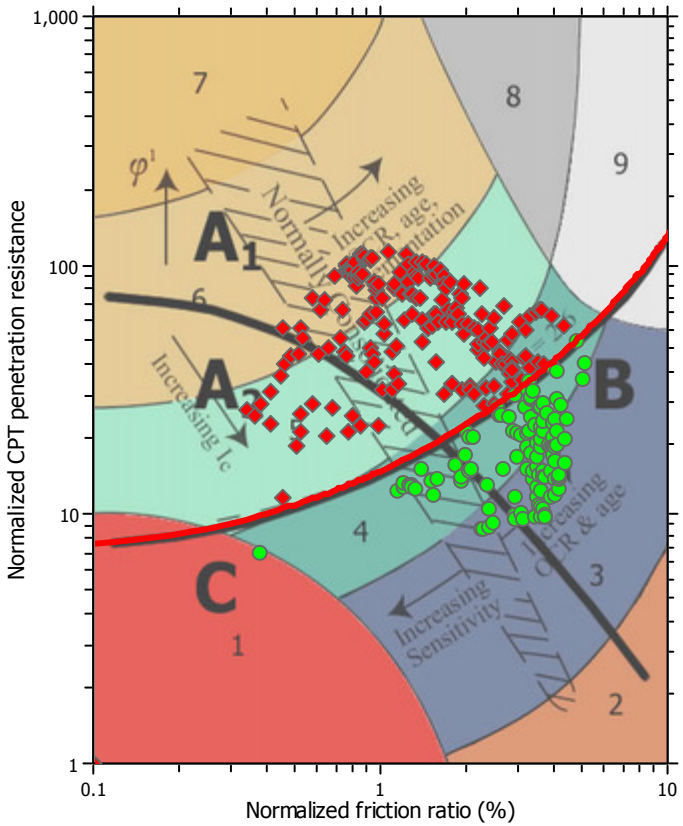
F.S. color scheme

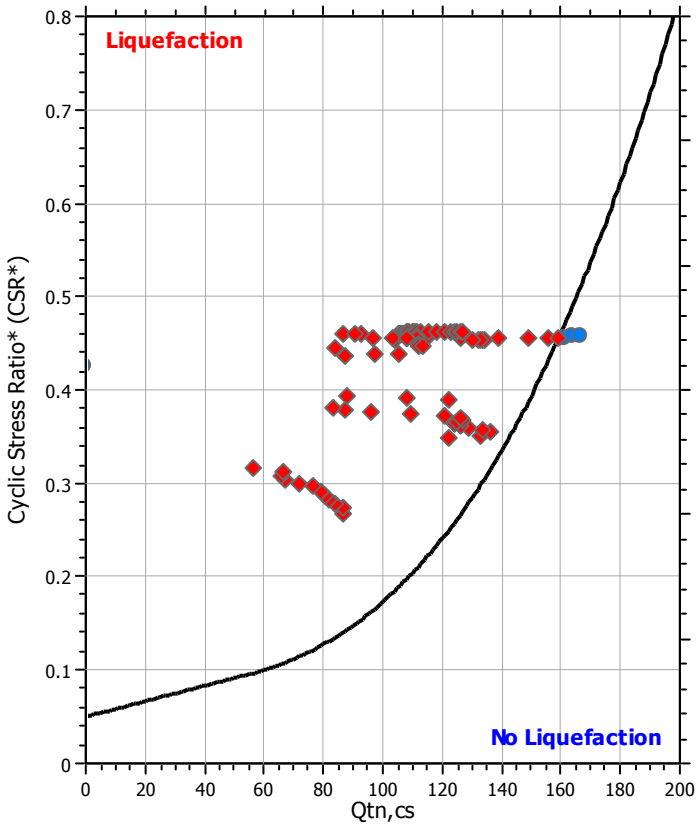
- Almost certain it will liquefy
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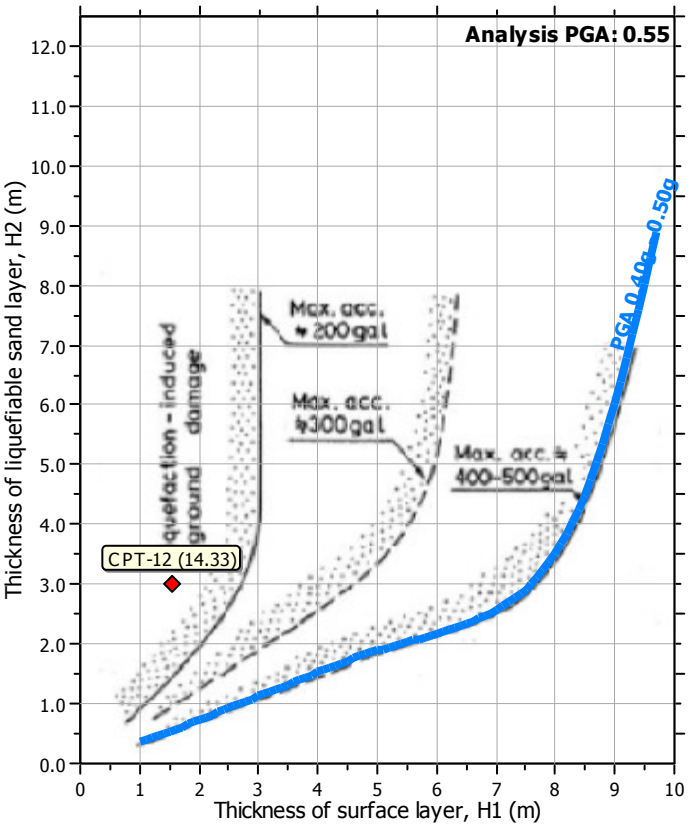
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



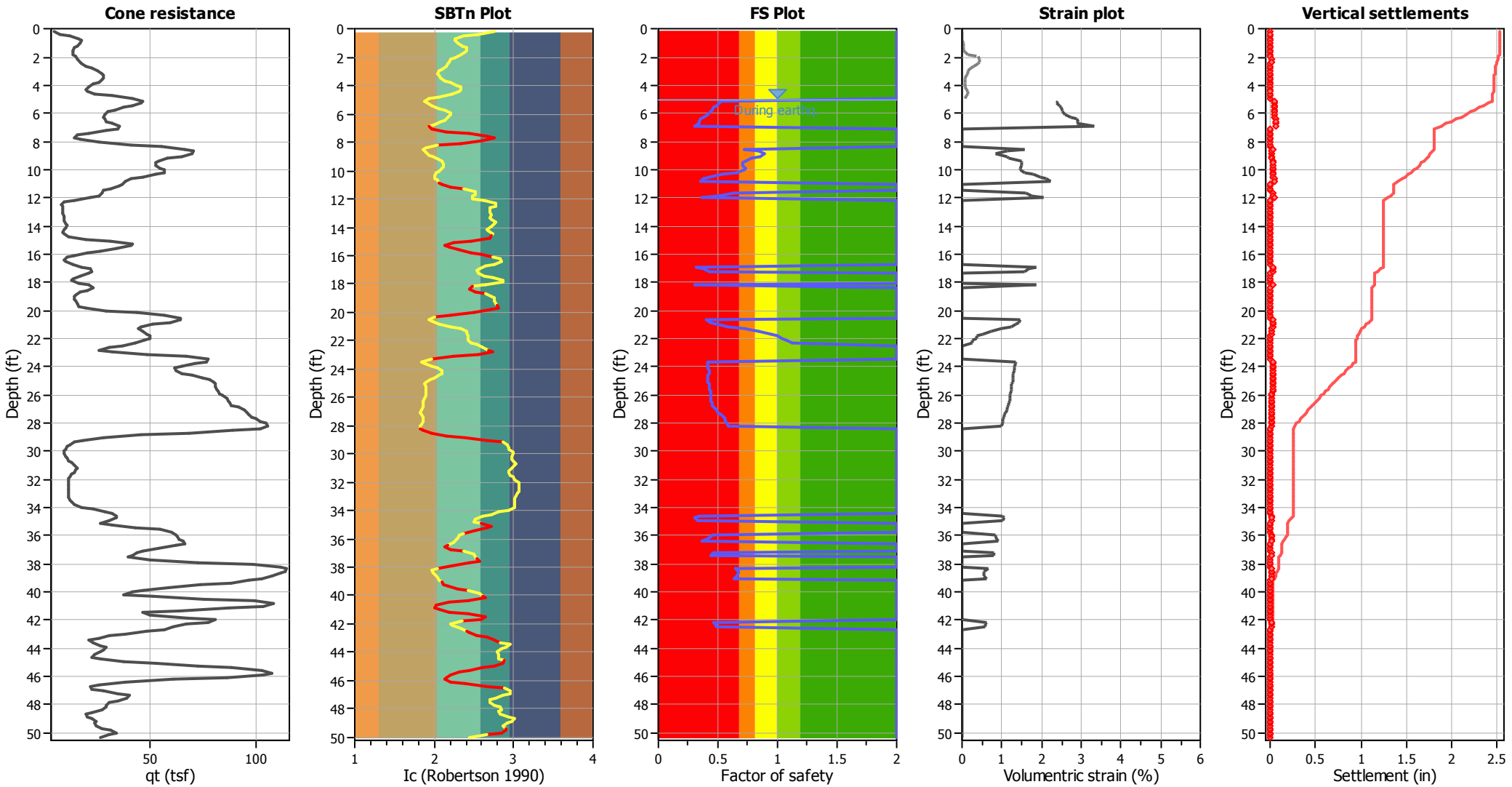




Input parameters and analysis data

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_σ 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

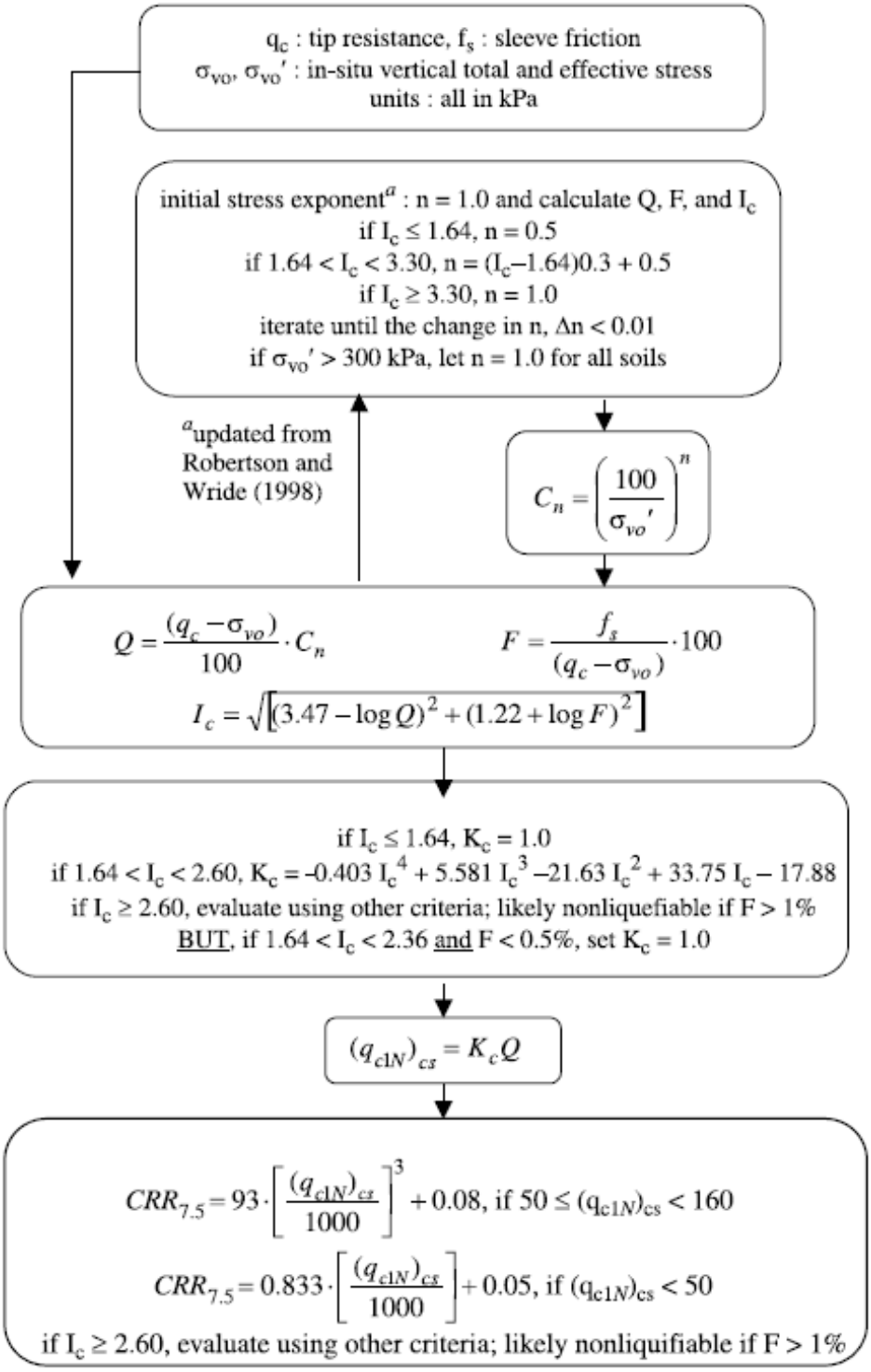


Abbreviations

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
Volumentric strain:	Post-liquefaction volumentric strain

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

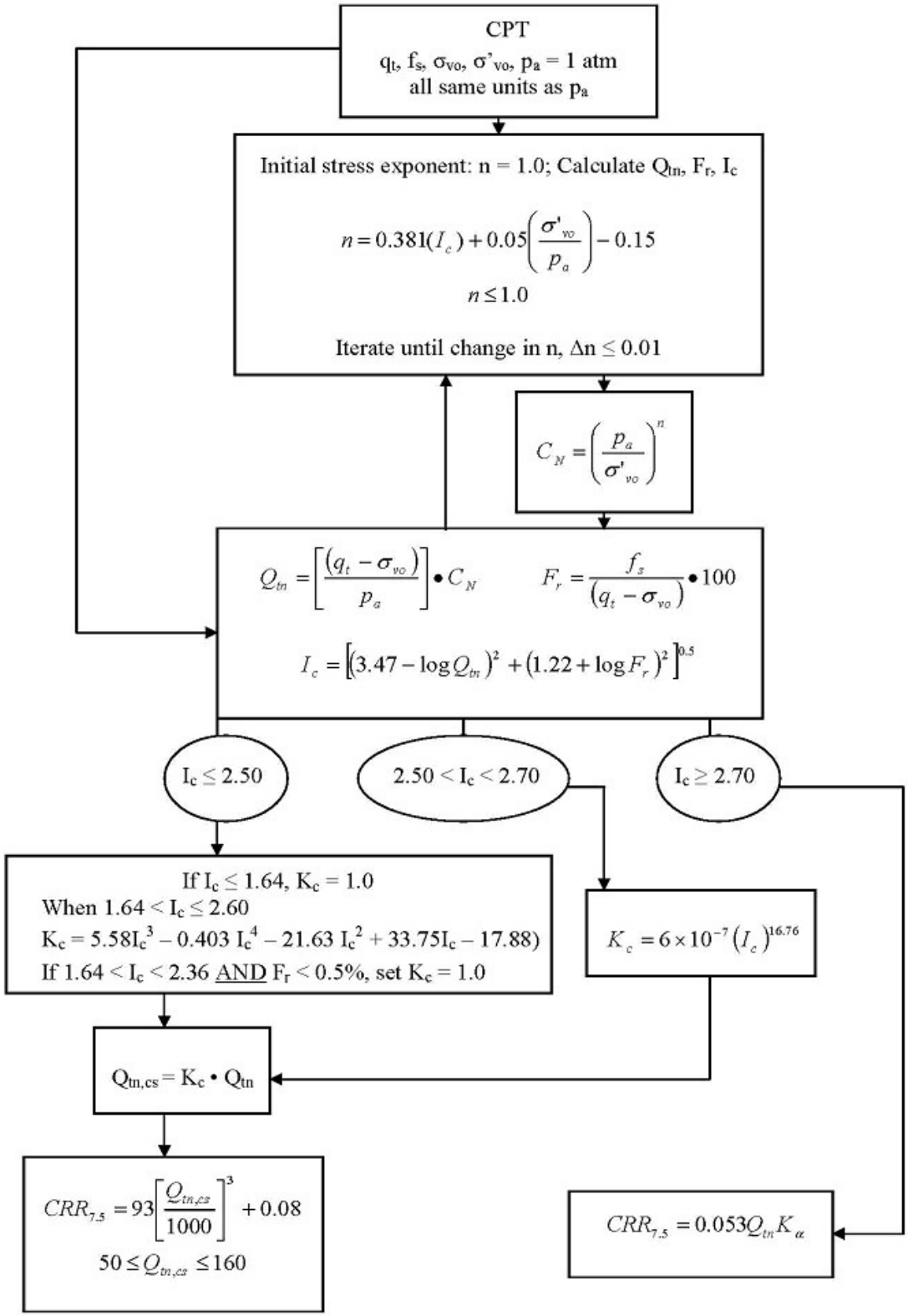
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

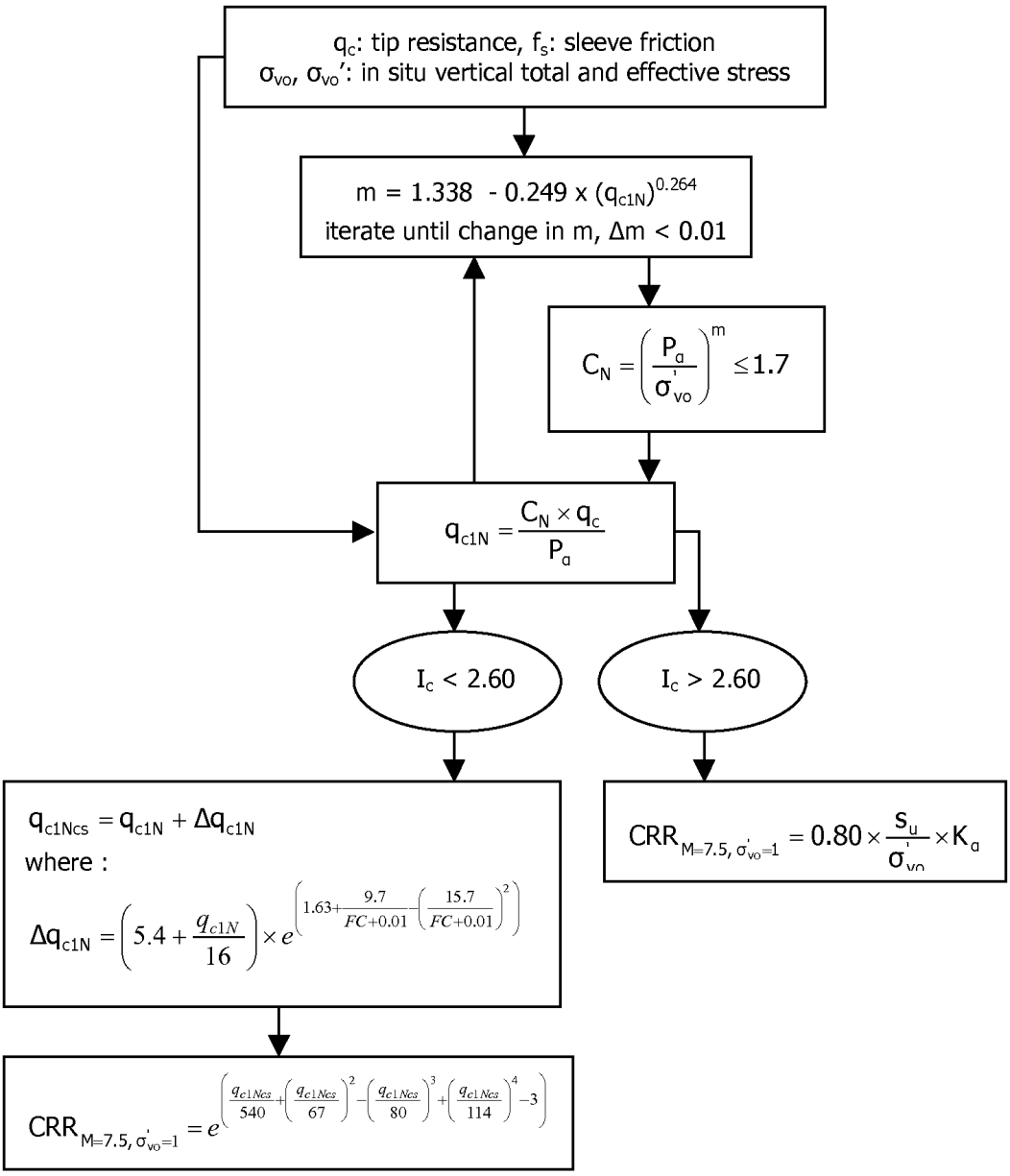
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

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[1]:

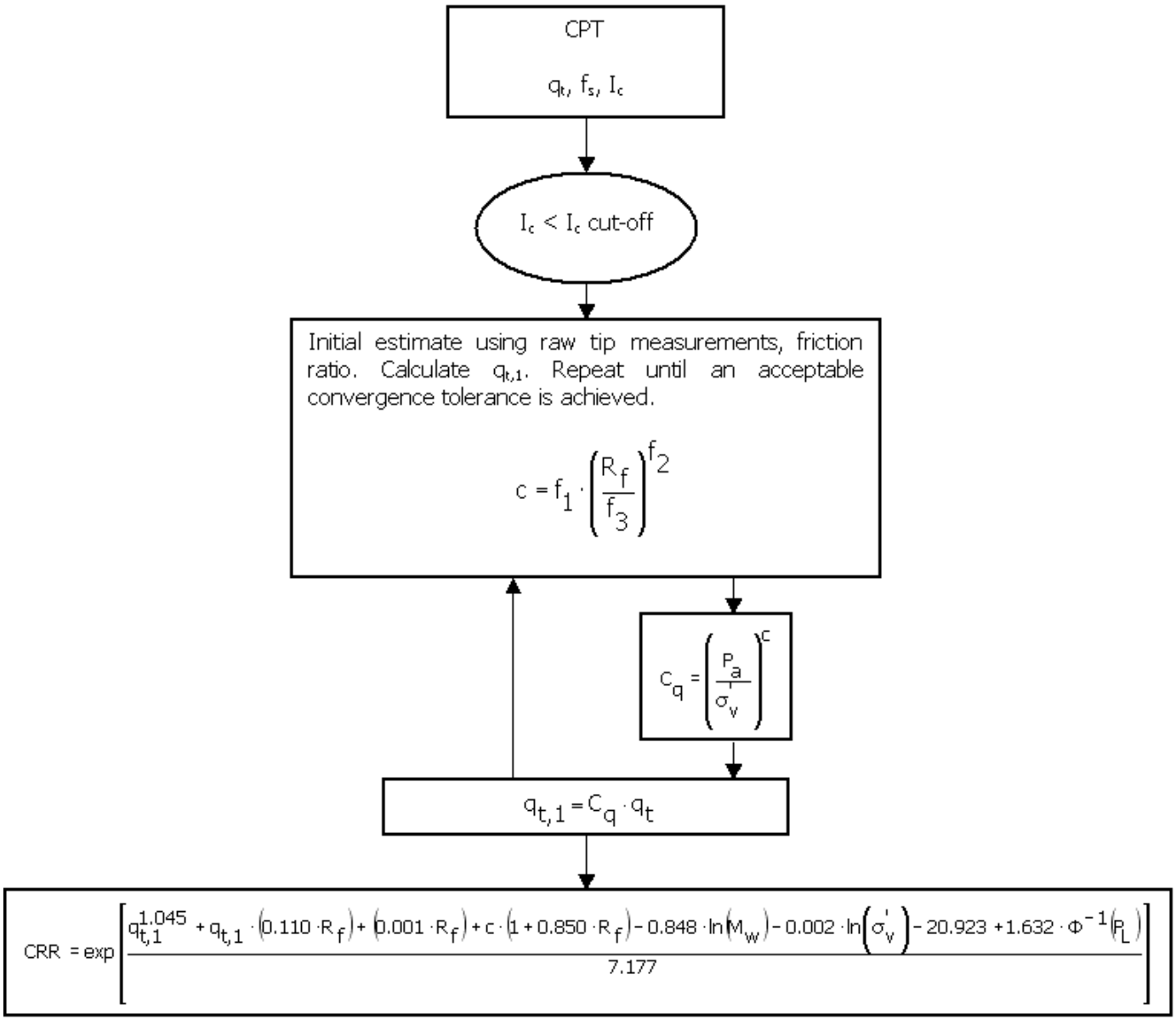


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

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)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{c1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

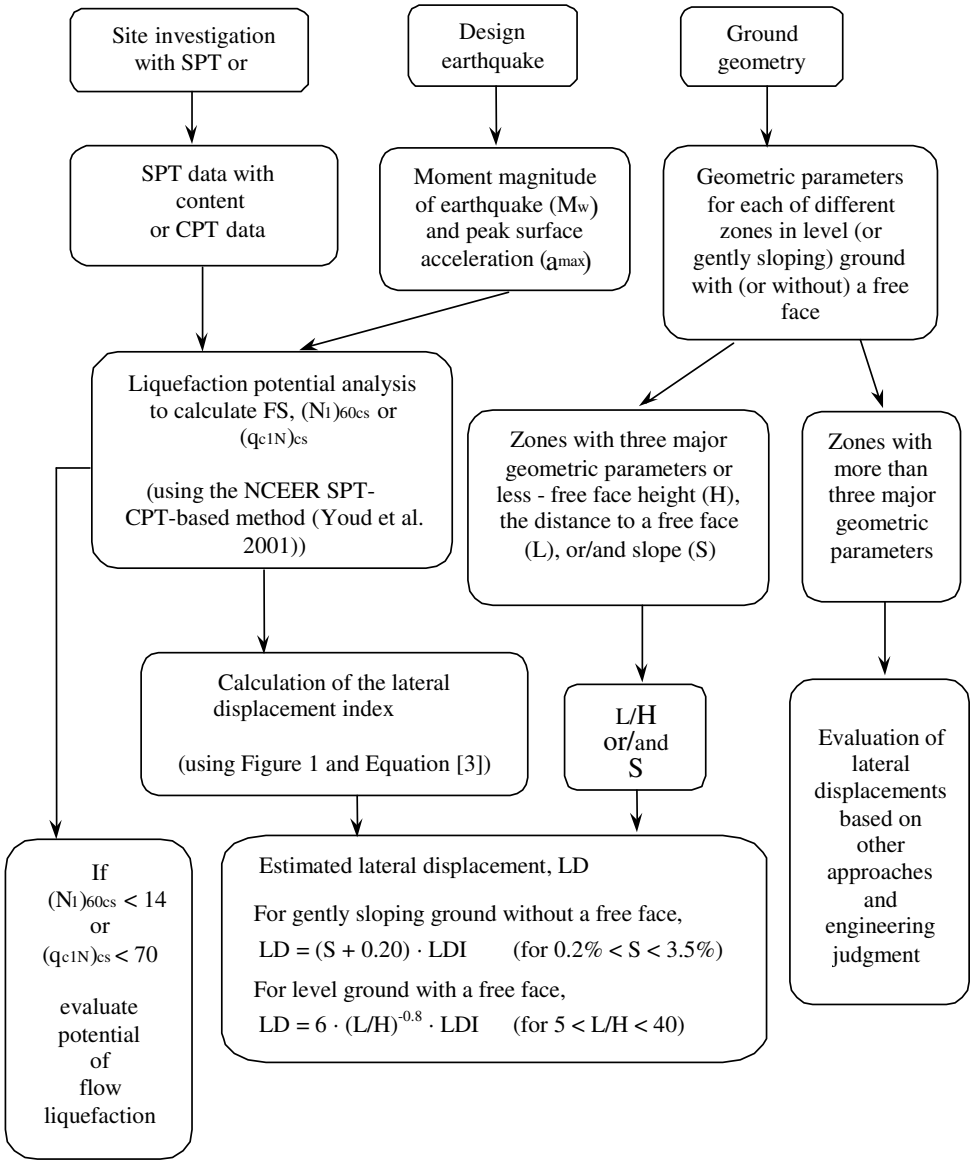
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

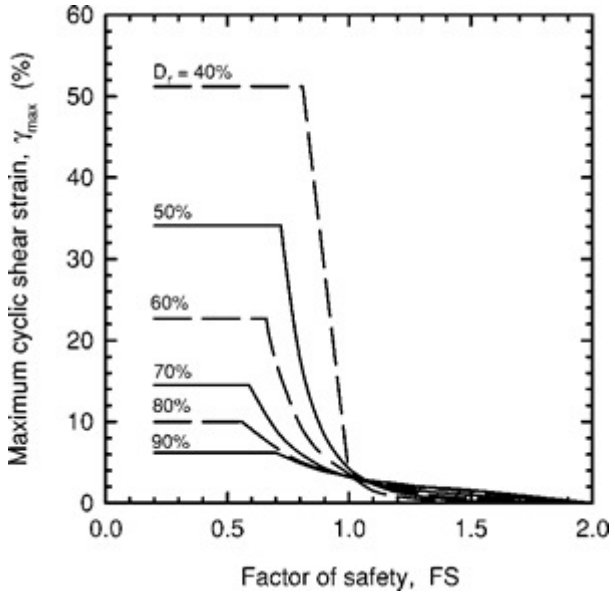
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



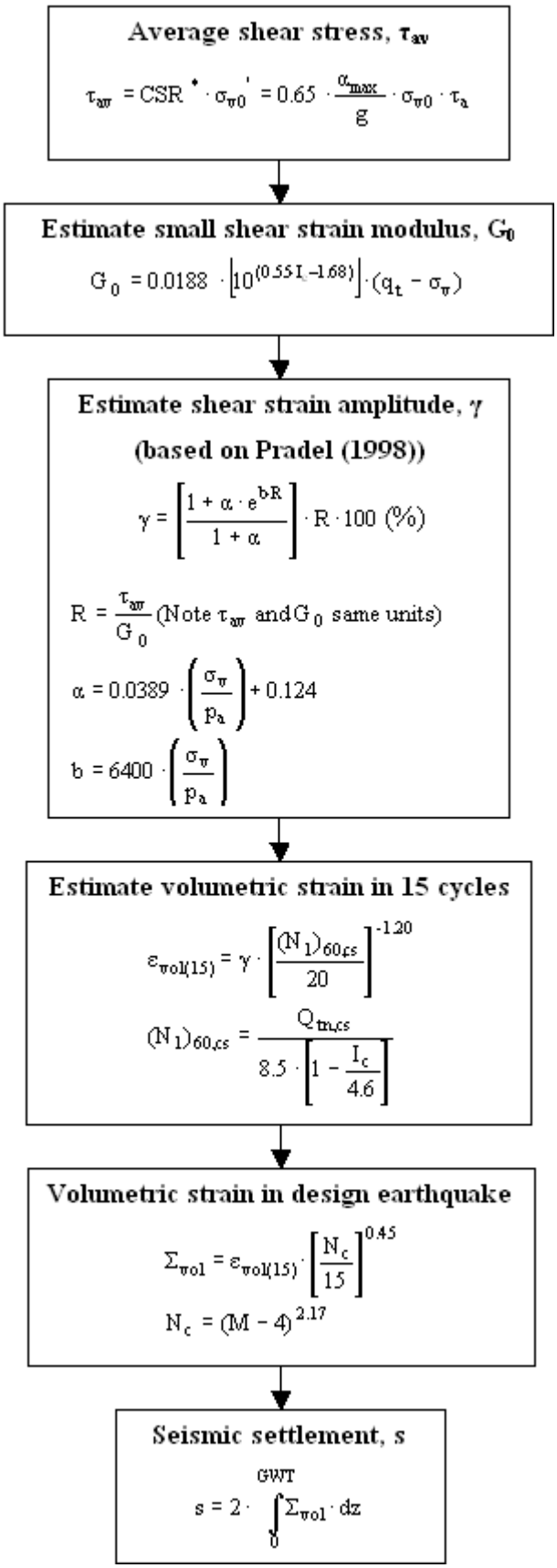
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "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 methology developed by Iwasaki (1982) and is adopted by AFPS.

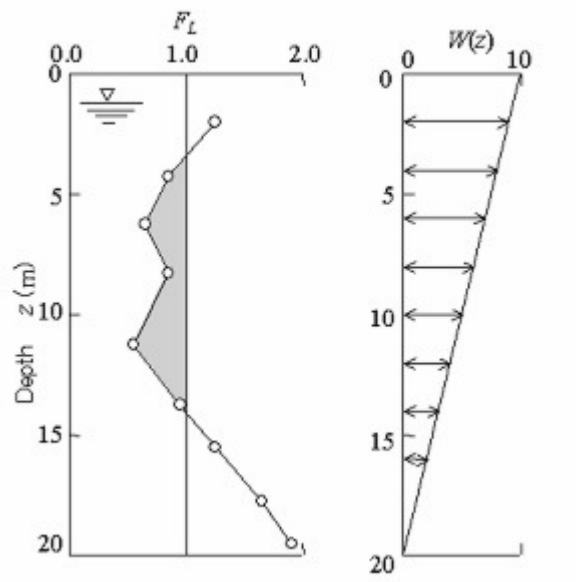
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5_z) \times F_L \times d_z$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment 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 <= 5 : Liquefaction risk is low
- 5 < LPI <= 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):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

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_shear) 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).

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Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: 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 7th 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 7th 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,

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

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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

2217.0014L.100/R

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

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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 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 practically 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 Inquires 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*[1].

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.

---

[1] 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	The 1923 and 1925 topographic maps do not show details of the Site vicinity. 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.	- 1923 and 1925 USGS Artesia Topographic Maps - 1928 EDR Aerial Photograph

Summary of Historical Sources		
Date Range	**Site Description**	**Historical Sources**
1930-1939	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. 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.	- 1935 USGS Los Alamitos Topographic Map - 1938 EDR Aerial Photograph
1940-1949	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. 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. 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.	- 1942 and 1943 USGS Downey Topographic Maps -1945 USGS Artesia Topographic Map -1947 USGS Downey Topographic Map - 1947 EDR Aerial Photograph - 1949 USGS Los Alamitos Topographic Map
1950-1959	The 1950 topographic map is largely consistent with the 1949 topographic map. 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.	- 1950 USGS Los Alamitos Topographic Map - 1952 EDR Aerial Photograph

Summary of Historical Sources		
Date Range	**Site Description**	**Historical Sources**
1960-1969	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 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. 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.	- 1963 EDR Aerial Photograph - 1964 USGS Los Alamitos Topographic Map

Summary of Historical Sources		
Date Range	**Site Description**	**Historical Sources**
1970-1979	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. 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. 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.	- 1970 EDR Aerial Photograph - 1972 USGS Los Alamitos Topographic Map - 1977 EDR Aerial Photograph
1980-1989	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. 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. 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.	- 1981 USGS Los Alamitos Topographic Map - 1981 EDR Aerial Photograph - 1989 EDR Aerial Photograph - Telephone interviews with Mr. Douglas Hawkins and Mr. Frank Sherren, May 14, 2019

Summary of Historical Sources		
Date Range	**Site Description**	**Historical Sources**
1990-1999	The 1990 aerial photograph is largely consistent with the 1989 aerial photograph. A portion of the Site appears to be occupied by parked automobiles. 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.	- 1990 EDR Aerial Photograph - 1994 EDR Aerial Photograph
2000-2009	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. 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. 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.	- 2005 EDR Aerial Photograph - 2009 EDR Aerial Photograph - Telephone interview with Mr. Frank Sherren, May 14, 2019
2010-Present	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. 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.	- 2012 USGS Los Alamitos Topographic Map - 2012 EDR Aerial Photograph - 2016 EDR Aerial Photograph

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 NTBE 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 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-feet bgs, and eight "deeper" samples from 2-feet 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

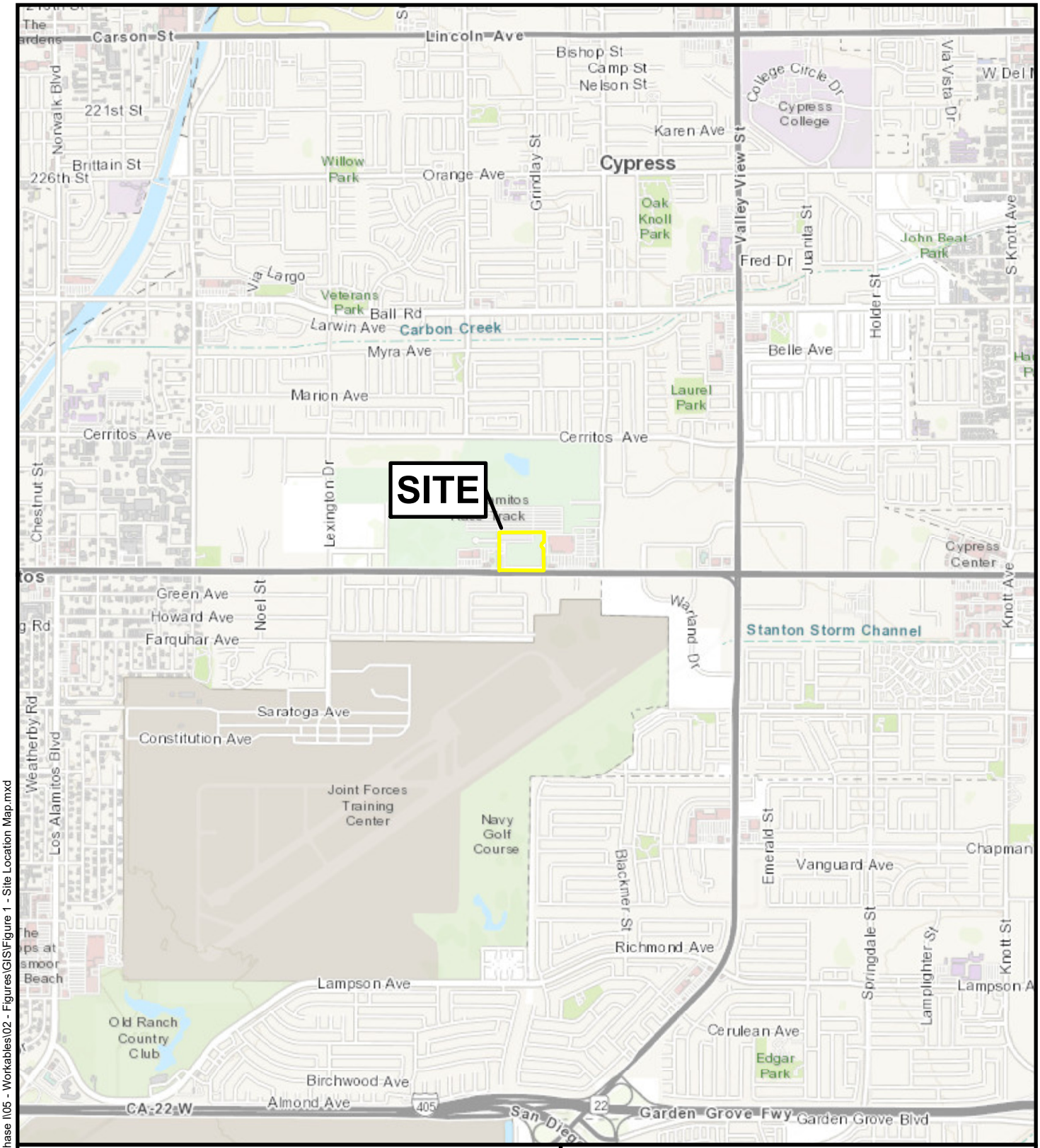




Mauricio H. Escobar, PG
Principal Geologist

FIGURES

1. Site Location Map
2. Site Plan
3. Soil Boring Locations





LOCATION OF DETAIL

N

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 1
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 II\05 - Workables\02 - Figures\GIS\Figure 1 - Site Location Map.mxd



LEGEND

PROPERTY BOUNDARY

N

400’ 0 400’

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
Prepared by: A.T.	Scale: AS SHOWN	2
Project Mgr: M.E.	Project: 2217.0014L000	
File: 2217.0014L000_SITE VICINITY.DWG		

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PARKING LOT FOR LOS ALAMITOS RACE COURSE

SEVENTH–DAY ADVENTIST CHURCH

SITE

SS–1

SS–2

SS–3

SS–4

SS–5

SS–6

SS–7

SS–8

COSTCO WHOLESALE

WINNERS CIRCLE

RETAIL

RETAIL

KATELLA AVENUE

LEGEND

PROPERTY BOUNDARY

APPROXIMATE SOIL BORING LOCATION

N

400’ 0 400’

Title:

SITE MAP WITH SOIL BORING LOCATIONS

NW CORNER KATELLA AVENUE AND WINNERS CIRCLE
CYPRESS, CA 90720

Prepared for:

SHEA PROPERTIES

ROUX

Compiled by: M.E.	Date: 17JUN2019	FIGURE
Prepared by: A.T.	Scale: AS SHOWN	3
Project Mgr: M.E.	Project: 2217.0014L000	
File: 2217.0014L000_SITE VICINITY.DWG		

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TABLES

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)
Analytical Method		USEPA Method 6010B												USEPA Method 8015M
Units		mg/kg												
Typical Range for California Soil[1]		0.15-1.95 mean = 0.60	12[a]	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	--
USEPA RSL - Residential Soil		31	0.68	15,000	71	NS	23	3,100	400	390	NS	390	23,000	NS
DTSC HERO Note 3 SL - Residential Soil		NS	0.11	NS	71	NS	NS	NS	80	NS	820	NS	NS	NS
SF-RWQCB ESL - Residential Soil		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	**3.83**	**3.56**	**77.6**	**0.76**	**20.5**	**10.8**	**14.4**	**11.0**	**6.11**	**13.6**	**45.0**	**57.2**	NA
SS-2-0.5	6/7/2019	<3	**4.34**	**68.0**	**0.73**	**18.7**	**9.84**	**12.6**	**11.8**	**2.16**	**13.2**	**39.6**	**55.2**	**73**
SS-3-0.5	6/7/2019	<3	**7.06**	**64.8**	**0.50**	**11.0**	**5.77**	**12.7**	**13.4**	<1	**13.3**	**30.2**	**53.6**	NA
SS-4-0.5	6/7/2019	<3	**7.55**	**77.8**	**0.68**	**19.5**	**9.45**	**14.4**	**17.2**	<1	**13.7**	**39.7**	**56.0**	NA
SS-5-0.5	6/7/2019	<3	**11.7**	**75.3**	**0.65**	**17.4**	**9.2**	**15.1**	**15.2**	<1	**13.2**	**39.6**	**64.5**	NA
SS-6-0.5	6/7/2019	<3	**7.30**	**88.5**	**0.82**	**20.8**	**10.8**	**16.6**	**16.3**	<1	**14.4**	**42.1**	**72.8**	NA
SS-7-0.5	6/7/2019	<3	**7.26**	**105**	**0.83**	**22.3**	**11.8**	**17.9**	**16.3**	<1	**15.3**	**48.0**	**67.7**	NA
SS-8-0.5	6/7/2019	**3.43**	**2.99**	**87.1**	**0.73**	**21.4**	**11.4**	**14.8**	**9.6**	<1	**13.4**	**46.9**	**58.5**	NA

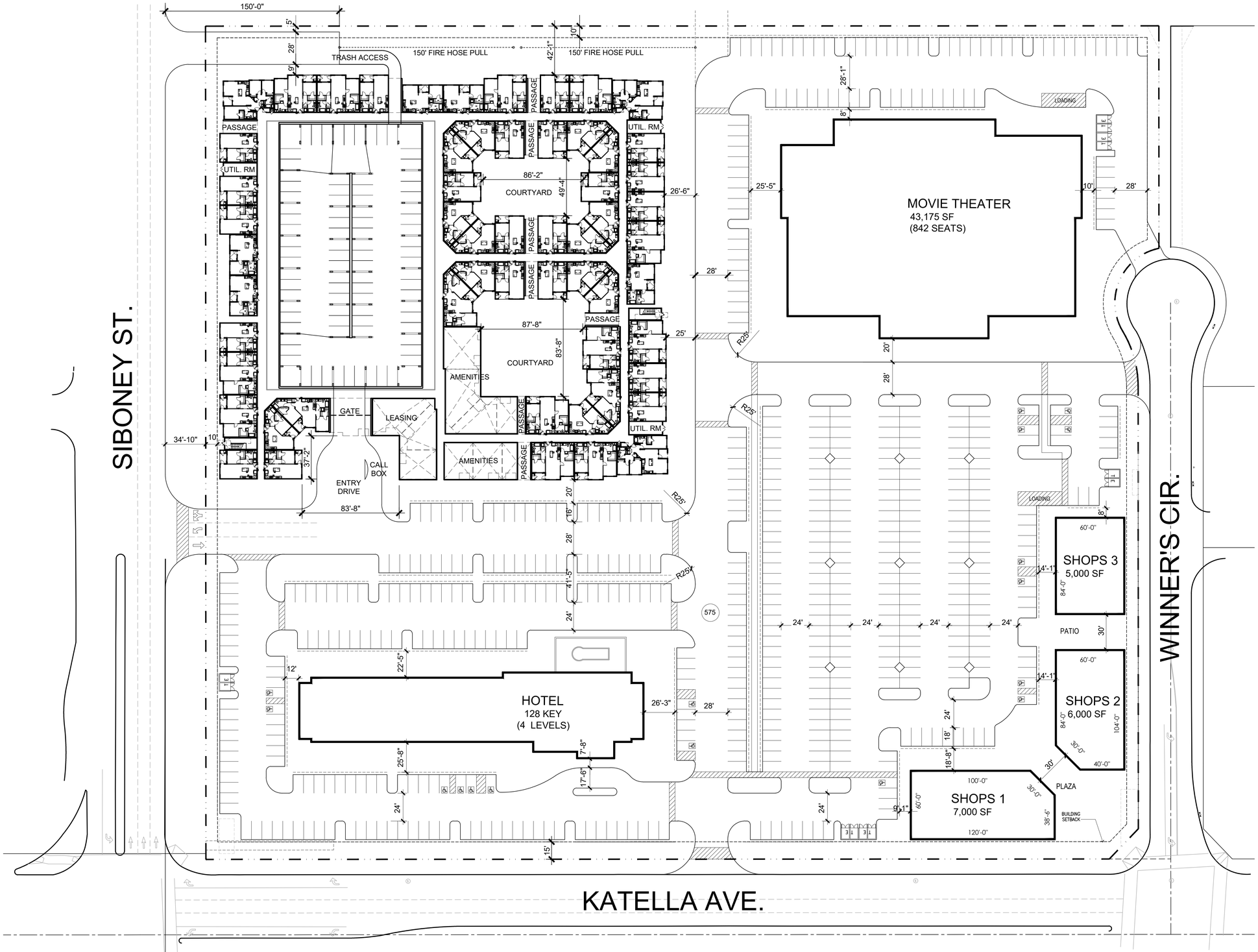
Notes:
USEPA = United States Environmental Protection Agency
mg/kg = milligrams per kilogram
[1]Bradford, G.R., Chang, A.C., Page, A.L., Bakhtar, D., Frampton, J.A., and Wright, H., 1996, Background Concentrations of Trace and Major Elements in California Soils, Kearney Foundation of Soil Sciences Special Report, Division of Agriculture and Natural Resources, University of California.
[a]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
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D. EDR Radius Map Report with Geocheck®
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APPENDIX A

User-Provided Information



PROJECT SUMMARY

RESIDENTIAL PARCEL	4.00 AC
COMMERCIAL PARCEL	9.29 AC
TOTAL	**13.29 AC**
FAR (COMMERCIAL)	0.32
HOTEL (128 ROOMS, 4 LEVELS)	70,000 SF
THEATER (842 SEATS)	43,175 SF
SHOPS 1 (2K RETAIL, 5K REST.)	7,000 SF
SHOPS 2 (2K RETAIL, 4K REST.)	6,000 SF
SHOPS 3 (RESTAURANT)	5,000 SF
TOTAL RETAIL	**131,175 SF**

PARKING REQUIRED

HOTEL	138 STALLS
THEATER	281 STALLS
RESTAURANT (SIT-DOWN)	140 STALLS
RETAIL	16 STALLS
TOTAL	**574 STALLS**
PARKING PROVIDED	**575 STALLS**
PARKING RATIO	4.4 /1000

Parking required per City Code:
Theater @ 1 per 3 fixed seats
Restaurants, sit-down @ 1 per 100 sf of gross floor area but no less than 10 stalls
Retail stores, general merchandise @ 1 per 250
Hotels @ 1 per room, plus 3/4 for each employee on largest shift, plus additional stalls as required for accessory uses

5/3/2019

SHEA - CYPRESS RESIDENTIAL BUILDING
4 Story Residential (Type V)

LEVEL	1 BR			2BR		3BR	TOTAL
	A1	A2	A3	B1	B2	C1	
1	21	13	5	12	3	3	57
2	12	12	5	22	4	3	58
3	17	14	5	23	6	3	68
4	17	14	5	23	6	3	68
	67	53	20	80	19	12	251
Totals	140			99		12	
	27%	21%	8%	32%	8%	5%	100%
	56%			39%		5%	

DWELLING UNIT INFORMATION

Unit	Unit SF	Qty.	%	SF TOT.*
A1	746	67	27%	49,982
A2	728	53	21%	38,584
A3	774	20	8%	15,480
B1	1,087	80	32%	86,960
B2	1,040	19	8%	19,760
C1	1,271	12	5%	15,252
Avg.	900	**251**	100%	**226,018**

* RESIDENTIAL UNIT NET AREA

AMENITIES

LEASING	2,435
FITNESS	2,069
CLUB	3,957
MAIL	600
TOTAL	**9,061**

5/3/2019

Residential Parking Summary:

Unit Type	Number of Units	City Standards St/Unit	City Standards St Req'd	Provided St/Unit	Provided St Req'd
1 BR	140	1.5	210	1.4	196
2 BR	99	1.75	174	1.6	159
3 BR	12	2.00	24	1.7	21
Total Residential Required	251	1.63	408	1.50	376
Guest Provided		0.20	51	0.25	63
Total Required		1.83	**459**	1.75	439
Total Provided				**1.75**	**439**

Accessible Stalls:

			Required Accessible	Provided*
Dwelling Stalls	376	2%	7.52 **=8 Req'd**	8
Unassigned Stalls	63	5%	3.14 **=3 Req'd**	3
Accessible Van Parking	1 per 6 HC stalls		**= 11 H/C total stalls (2 H/C van)**	11

* 2 of the 10 required stalls are van accessible

Parking Provided:

Parking Provided	Units Per Level	Total Stalls	Std. Stalls*	HC Stalls
1st Level	57	75	72	3
2nd Level	58	85	82	3
3rd Level	68	85	82	3
4th Level	68	85	83	2
5th Level		85	85	0
6th Level		24	24	0
			428	**11**
Total Provided	**251**	**439**	**439**	

NORTH
1"=40'-0" 0 20' 40' 80' 120'

OVERALL SITE PLAN
OPTION 1
DATE: 05-06-19
JOB NO.: 2018-344

A1.0

CYPRESS MIXED-USE DEVELOPMENT

CYPRESS, CA

SHEA PROPERTIES
130 Vantis, Ste. 200, Aliso Viejo, CA 92656
(949) 389-7200

ARCHITECTS ORANGE
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

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 [X] 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 [X] 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[X] 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[X] 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[X]

b. Do you know of specific chemicals that are present or once were present at the *property*?

Yes[ ] No[X]

c. Do you know of spills or other chemical releases that have taken place at the *property*?

Yes[ ] No[X]

d. Do you know of any environmental cleanups that have taken place at the *property*?

Yes[ ] No[X]

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 [X] 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

APPENDIX B

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 Untied 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 Cat (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*[1]*.)*

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 processing 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

APPENDIX C

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

EDR Historical Topo Map Report

05/08/19

Site Name:	Client Name:
Not Reported	Roux Associates
Not Reported	402 Heron Drive
Los Alamitos, CA 90720	Logan Township, NJ 08085-0000
EDR Inquiry # 5646263.4	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. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 2217.0014L000

Project: Cypress

Coordinates:

Latitude:	33.804178 33° 48' 15" North
Longitude:	-118.042085 -118° 2' 32" West
UTM Zone:	Zone 11 North
UTM X Meters:	403543.40
UTM Y Meters:	3740932.02
Elevation:	32.00' above sea level

Maps Provided:

2012	1943
1981	1942
1972	1935
1964	1925
1950	1923
1949	1902
1947	1899
1945	1896

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Topo Sheet Key

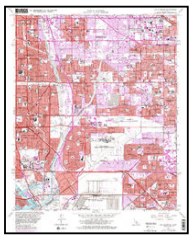
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



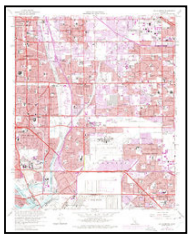
Los Alamitos
2012
7.5-minute, 24000

1981 Source Sheets



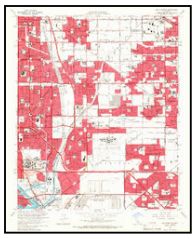
Los Alamitos
1981
7.5-minute, 24000
Aerial Photo Revised 1978

1972 Source Sheets



Los Alamitos
1972
7.5-minute, 24000
Aerial Photo Revised 1972

1964 Source Sheets



Los Alamitos
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



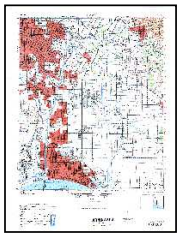
Los Alamitos
1950
7.5-minute, 24000
Aerial Photo Revised 1947

1949 Source Sheets



Los Alamitos
1949
7.5-minute, 24000
Aerial Photo Revised 1947

1947 Source Sheets



DOWNEY
1947
15-minute, 50000

1945 Source Sheets

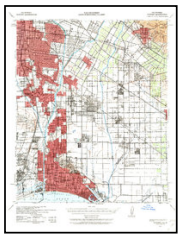


Artesia
1945
7.5-minute, 24000

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

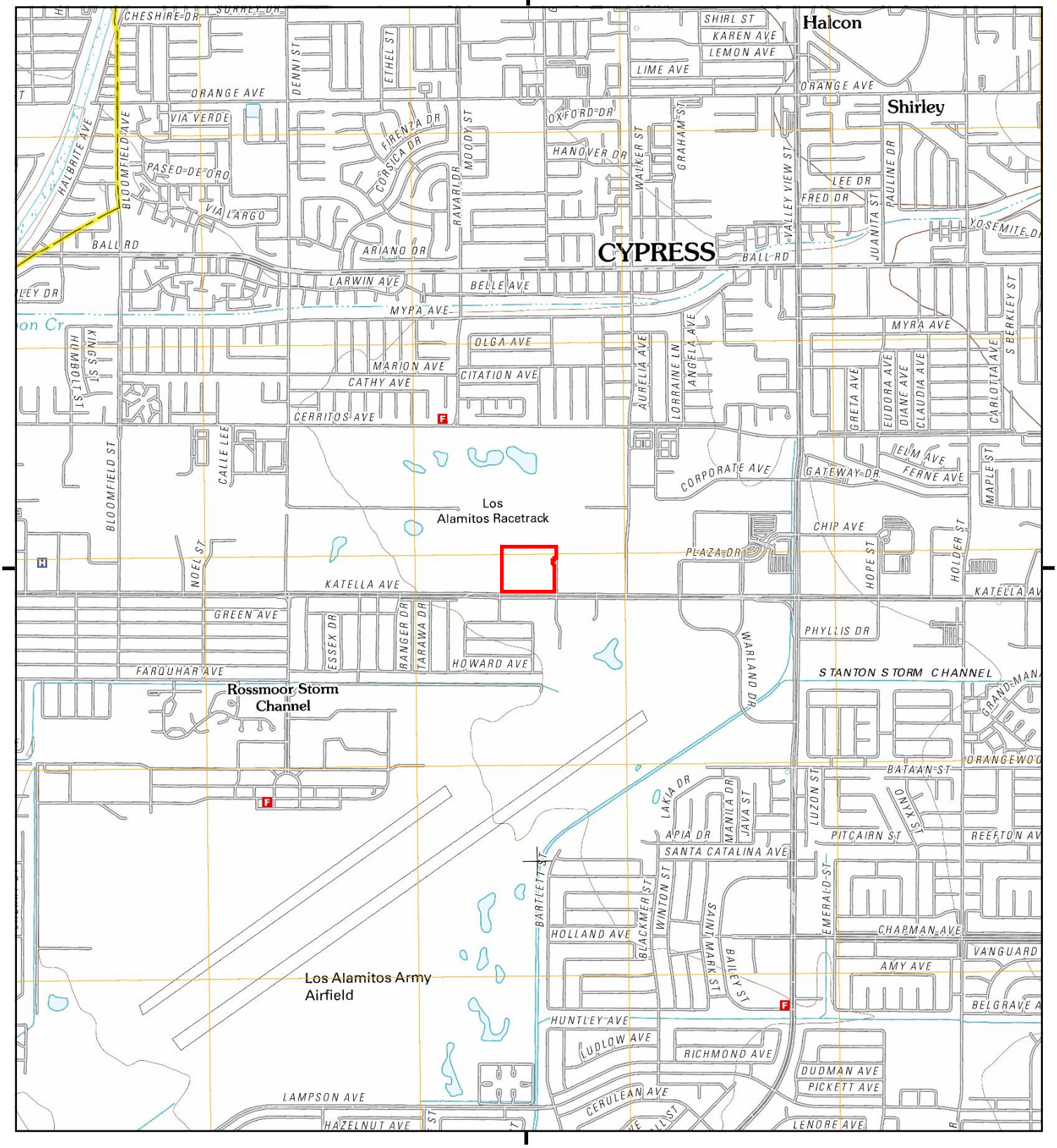
1896 Source Sheets



Downey
1896
15-minute, 62500

Historical Topo Map

2012



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W E
SW S SE

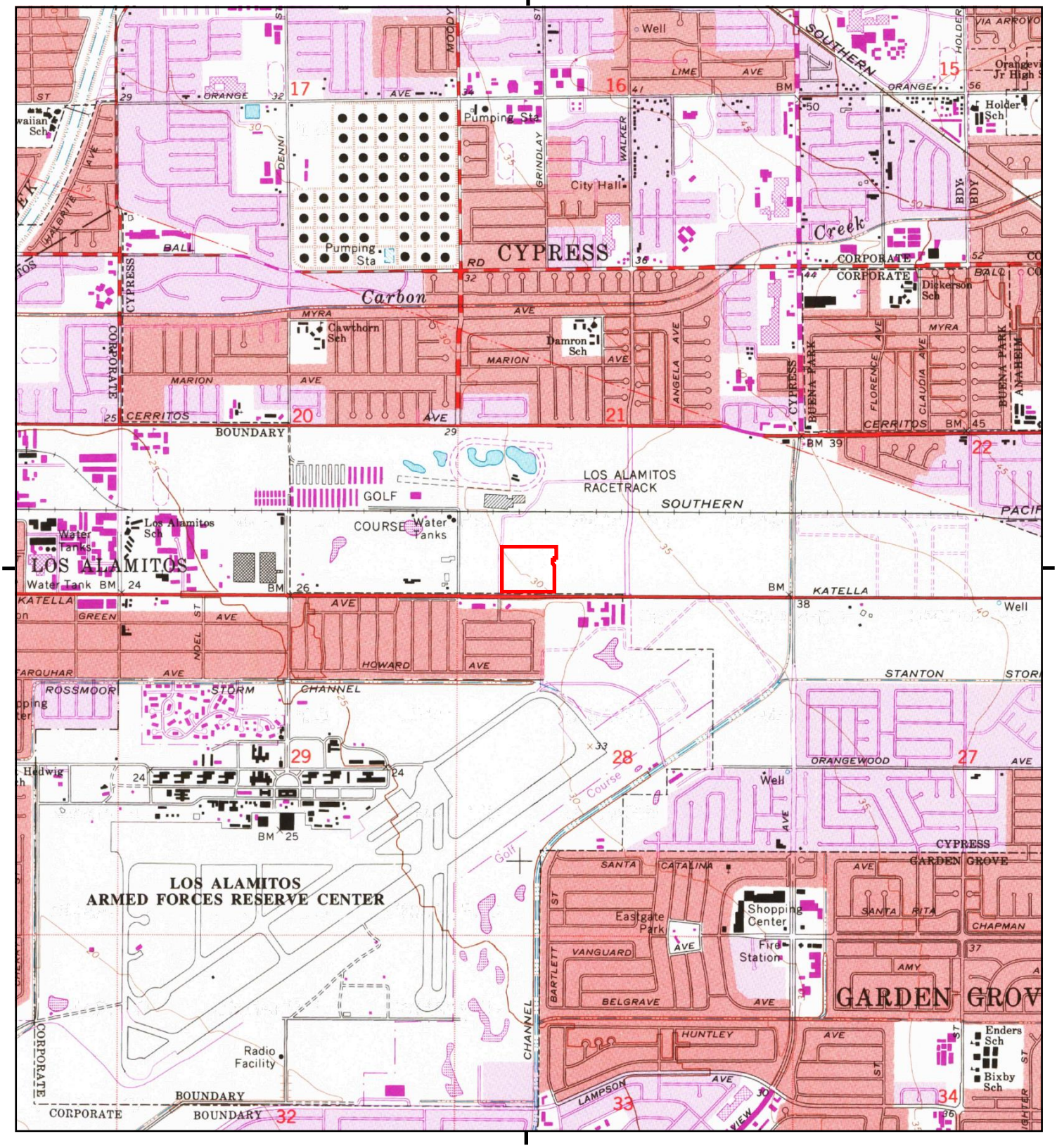
TP, Los Alamitos, 2012, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1981



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W E
SW S SE

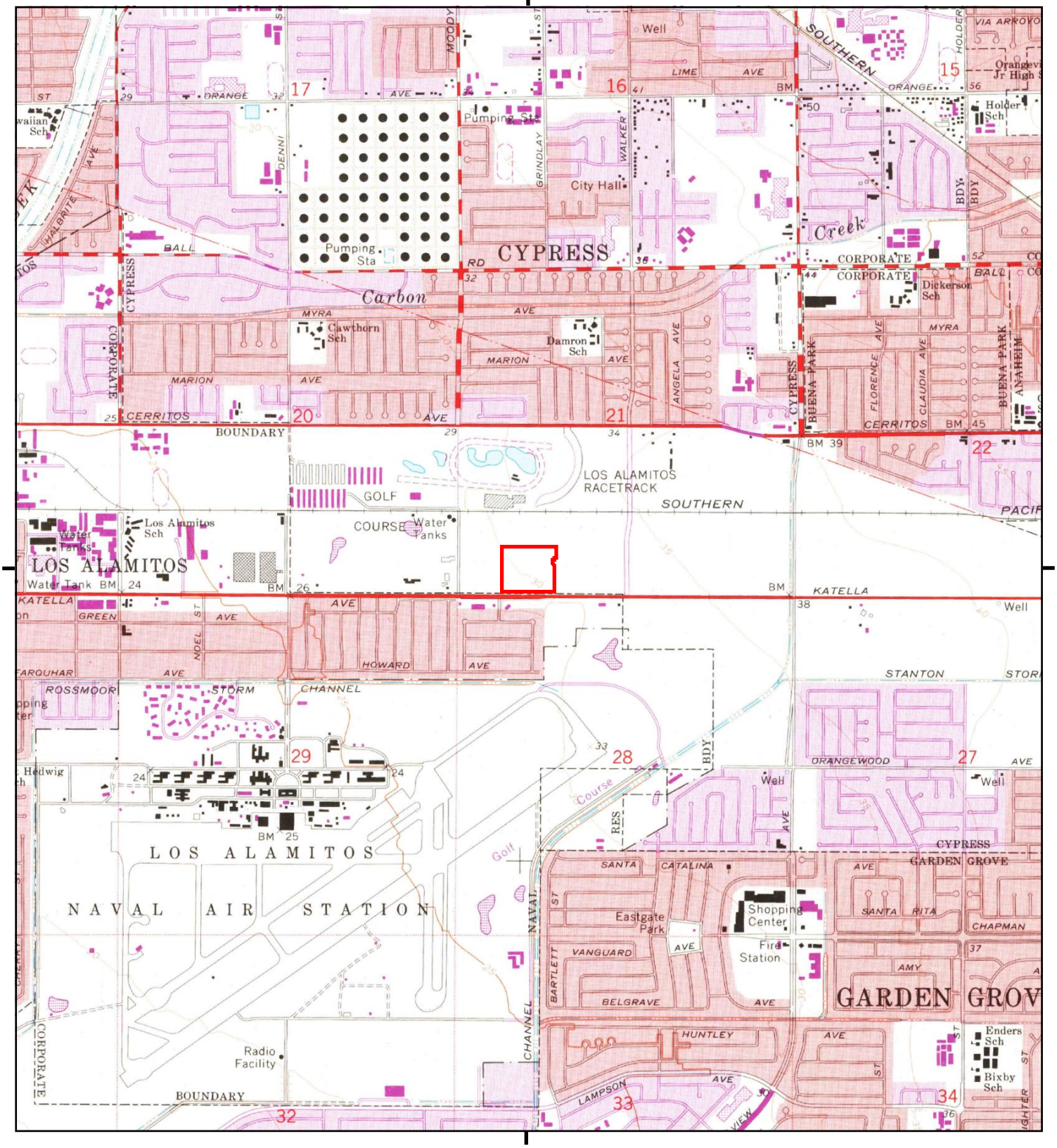
TP, Los Alamitos, 1981, 7.5-minute

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ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

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Historical Topo Map

1972



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W E
SW S SE

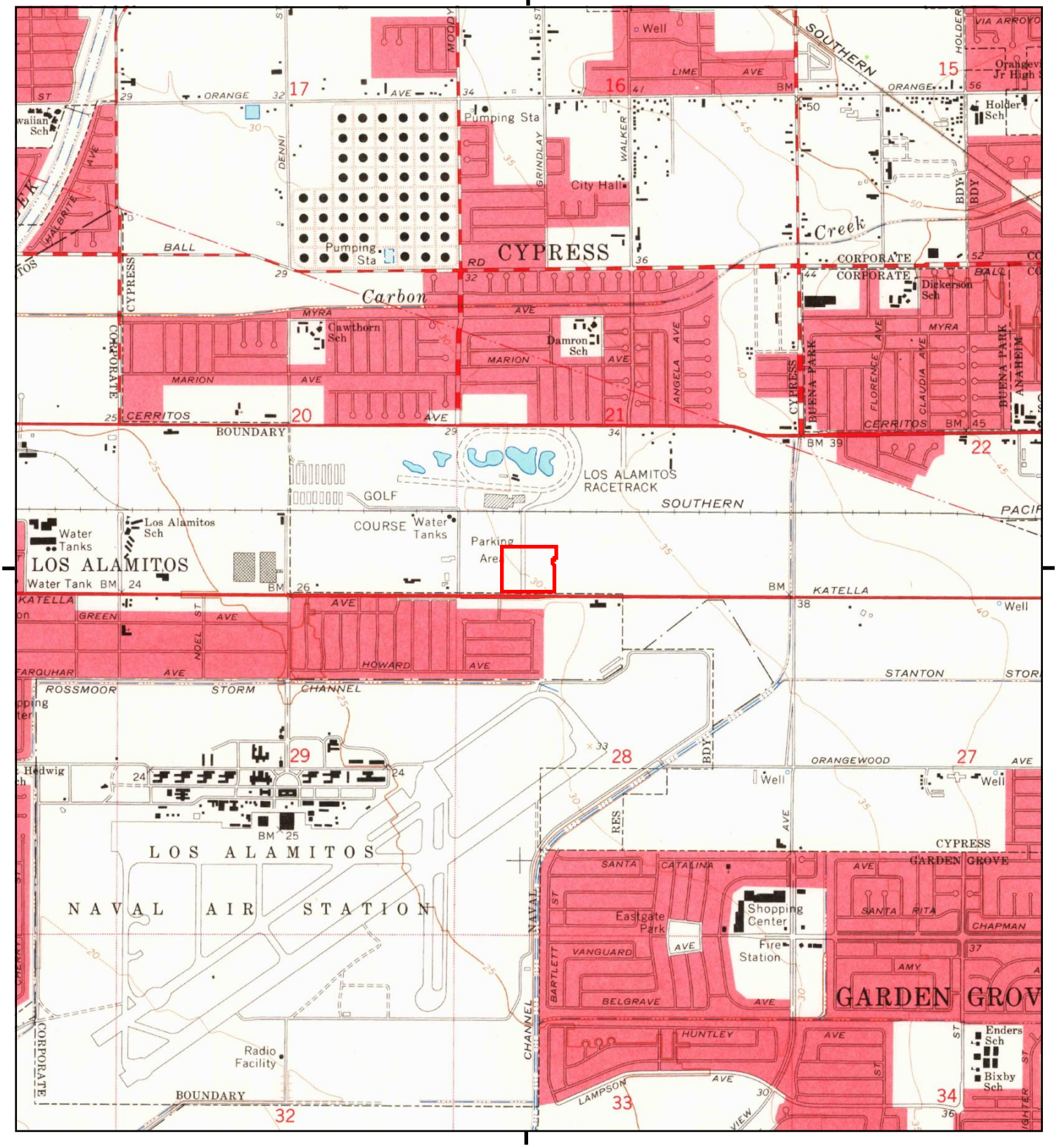
TP, Los Alamitos, 1972, 7.5-minute

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ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1964



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W E
SW S SE

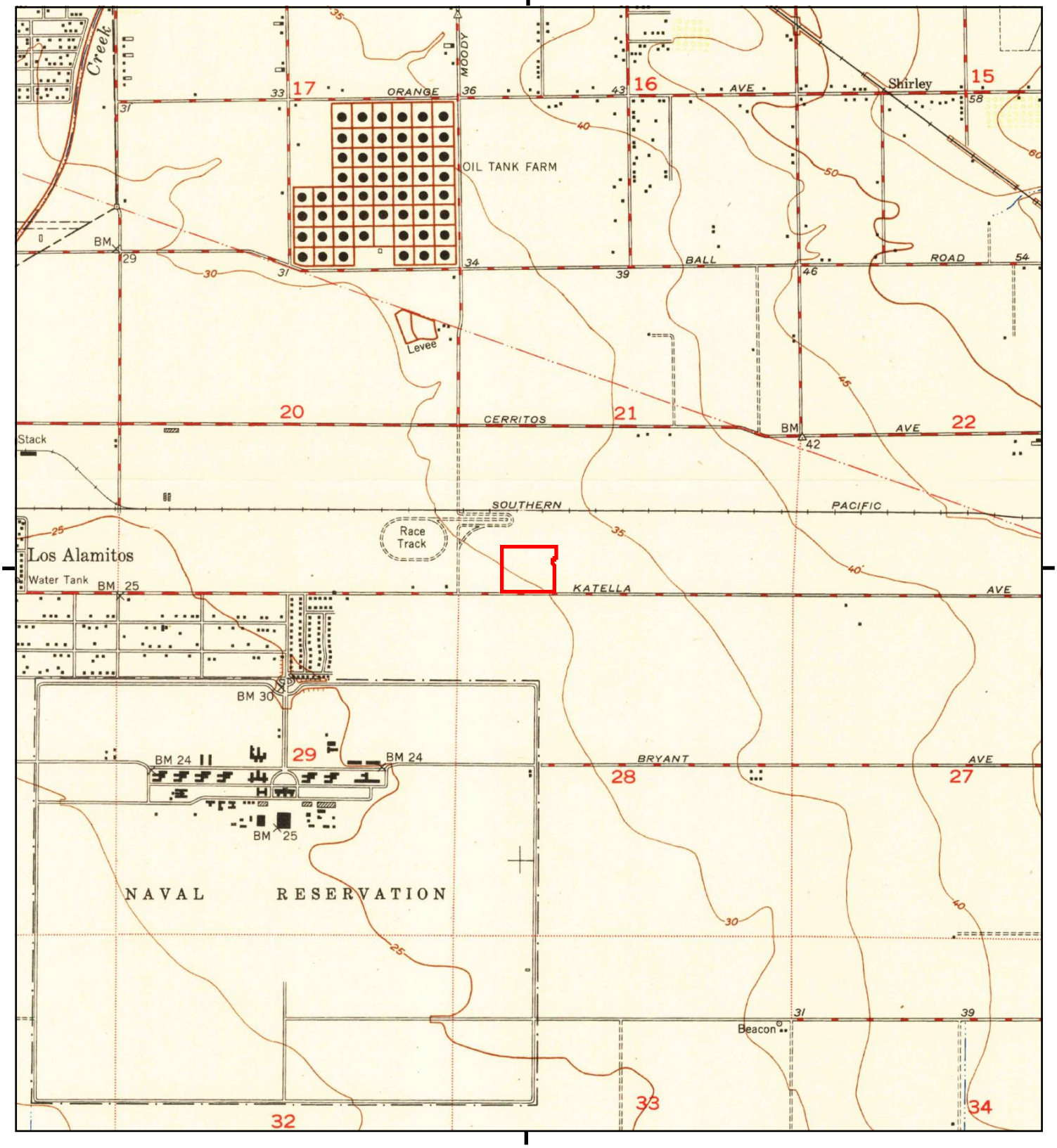
TP, Los Alamitos, 1964, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1950



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W E
SW S SE

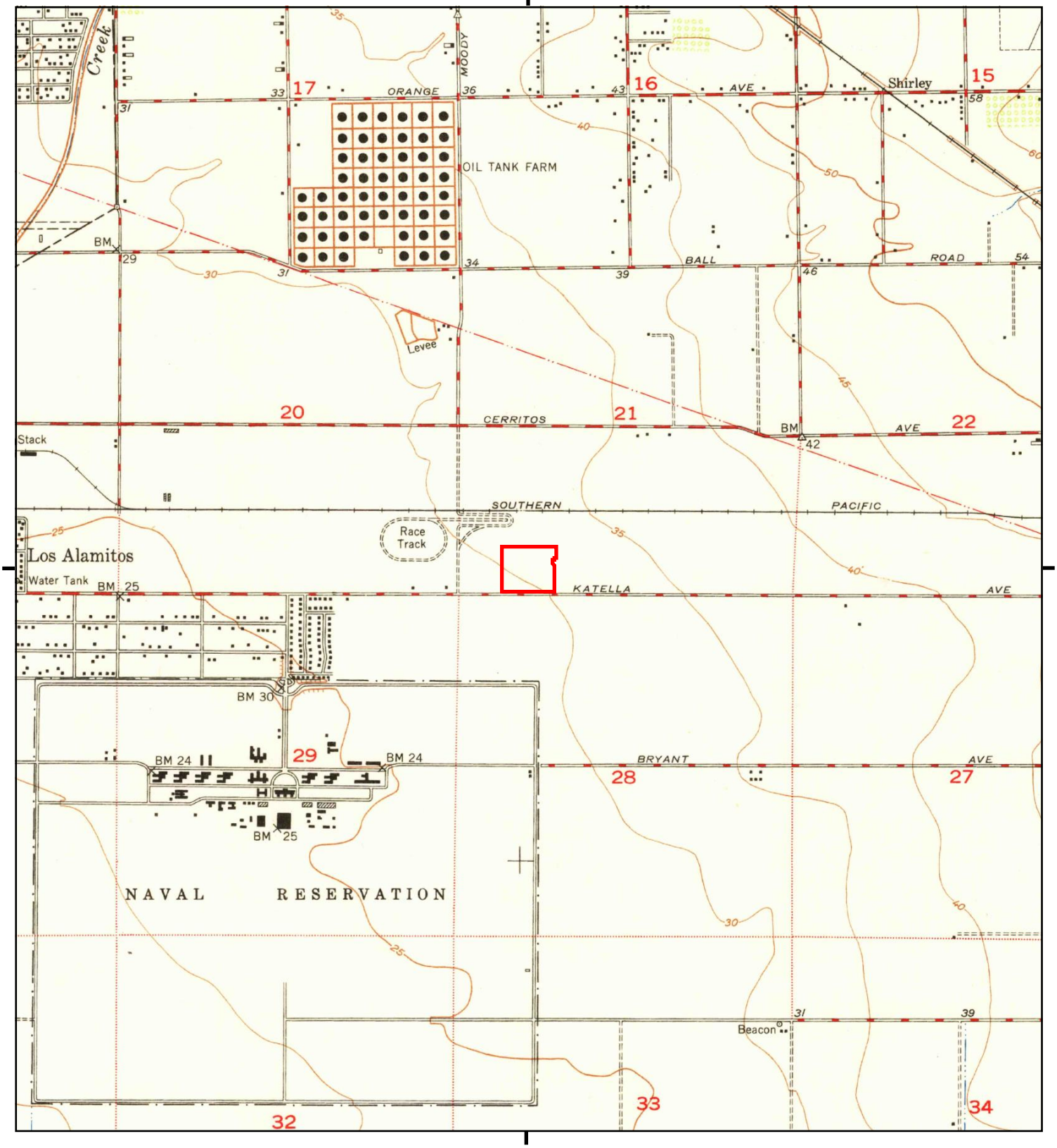
TP, Los Alamitos, 1950, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1949



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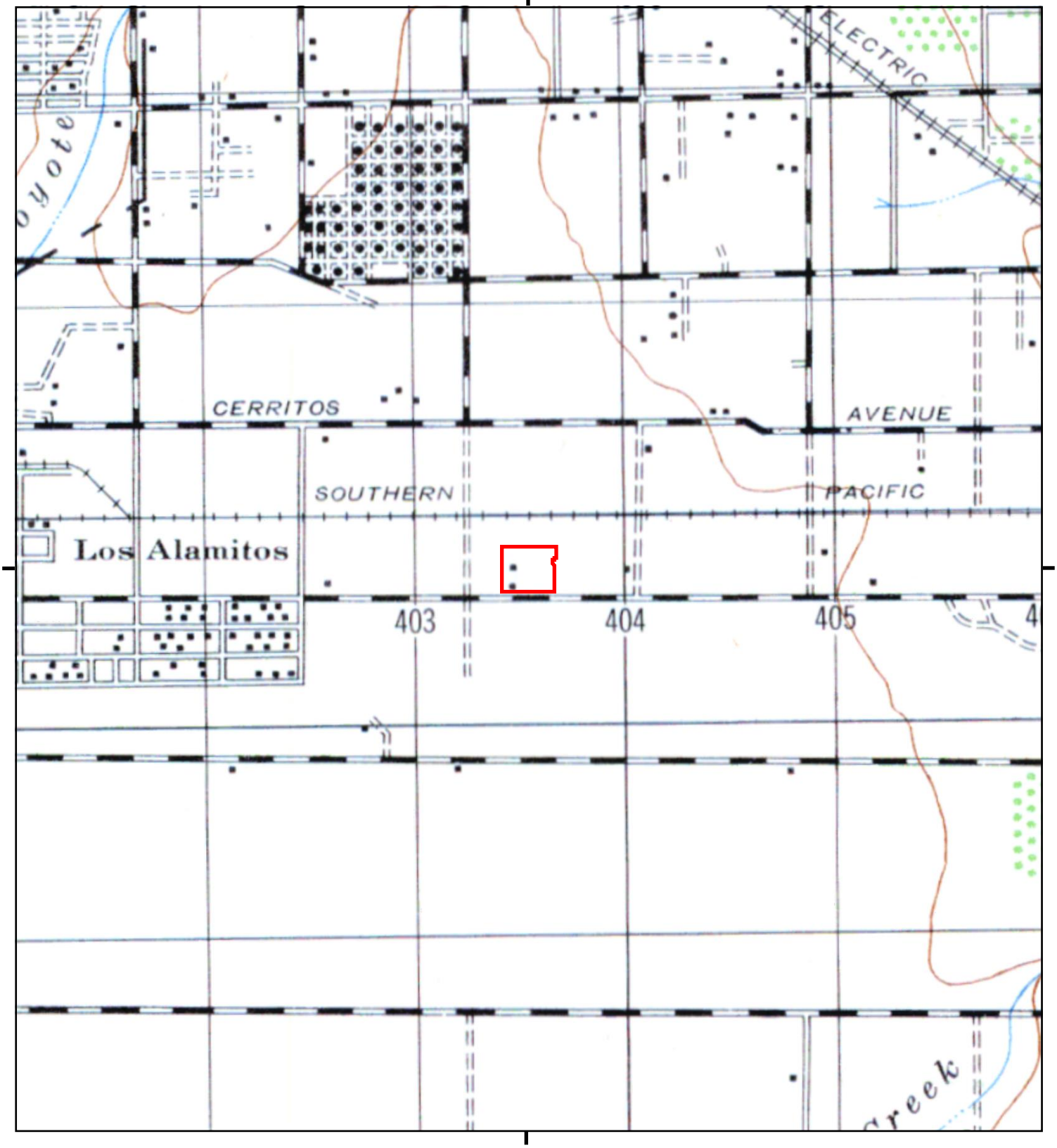
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Los Alamitos, 1949, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



This report includes information from the following map sheet(s).

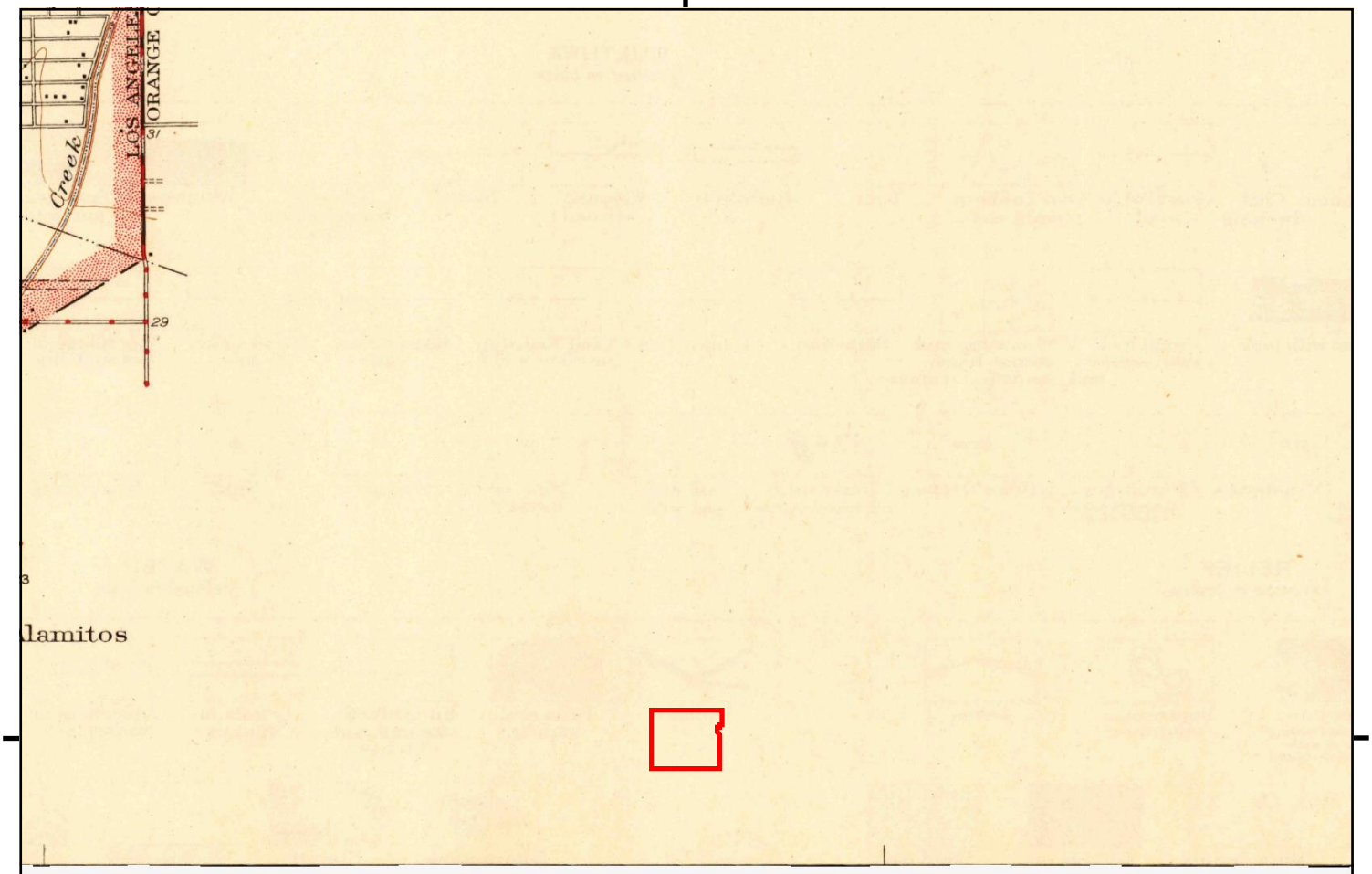
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NW N NE
W E
SW S SE

TP, DOWNEY, 1947, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



UNMAPPED

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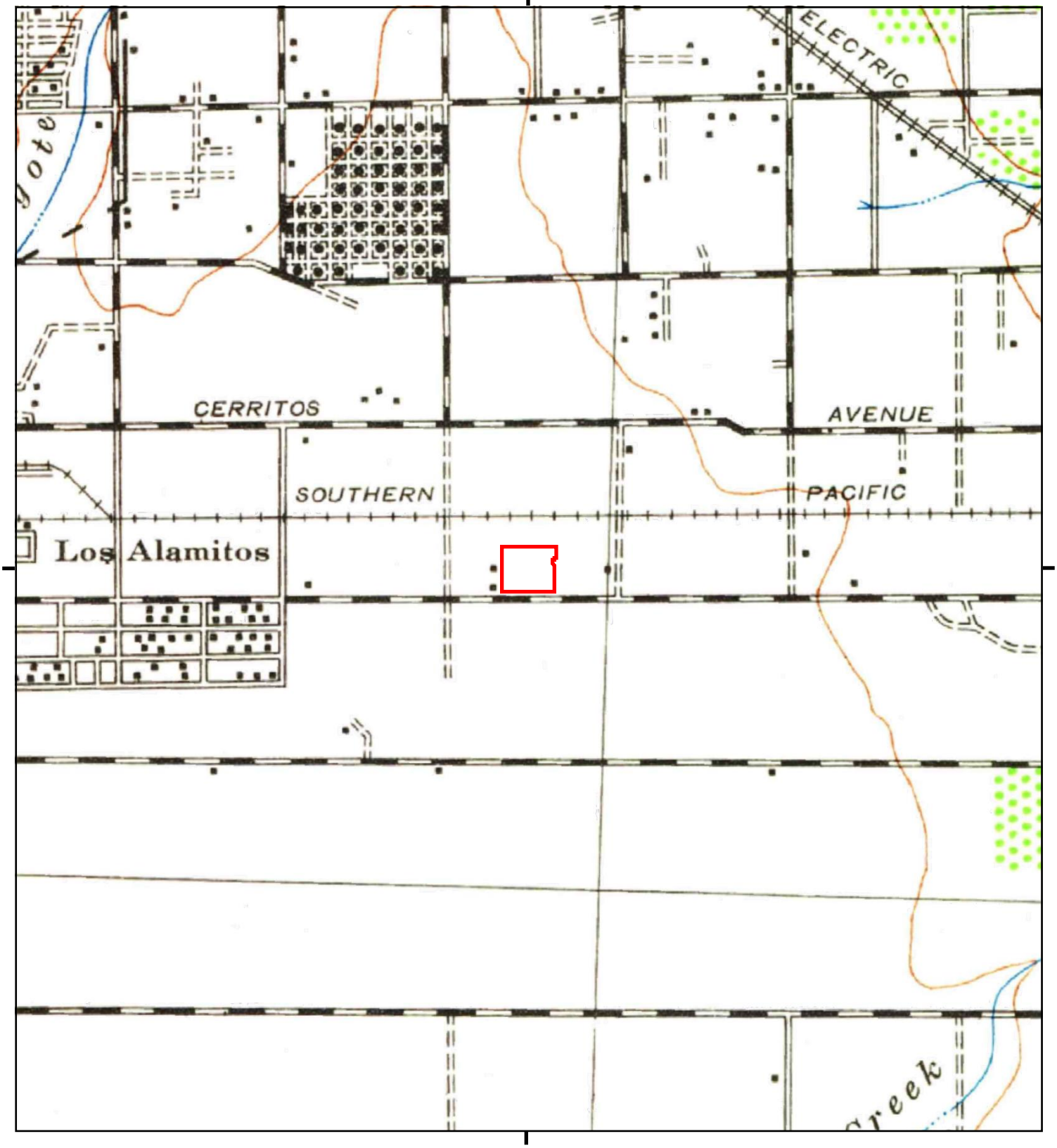
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NW N NE
W E
SW S SE

TP, Artesia, 1945, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

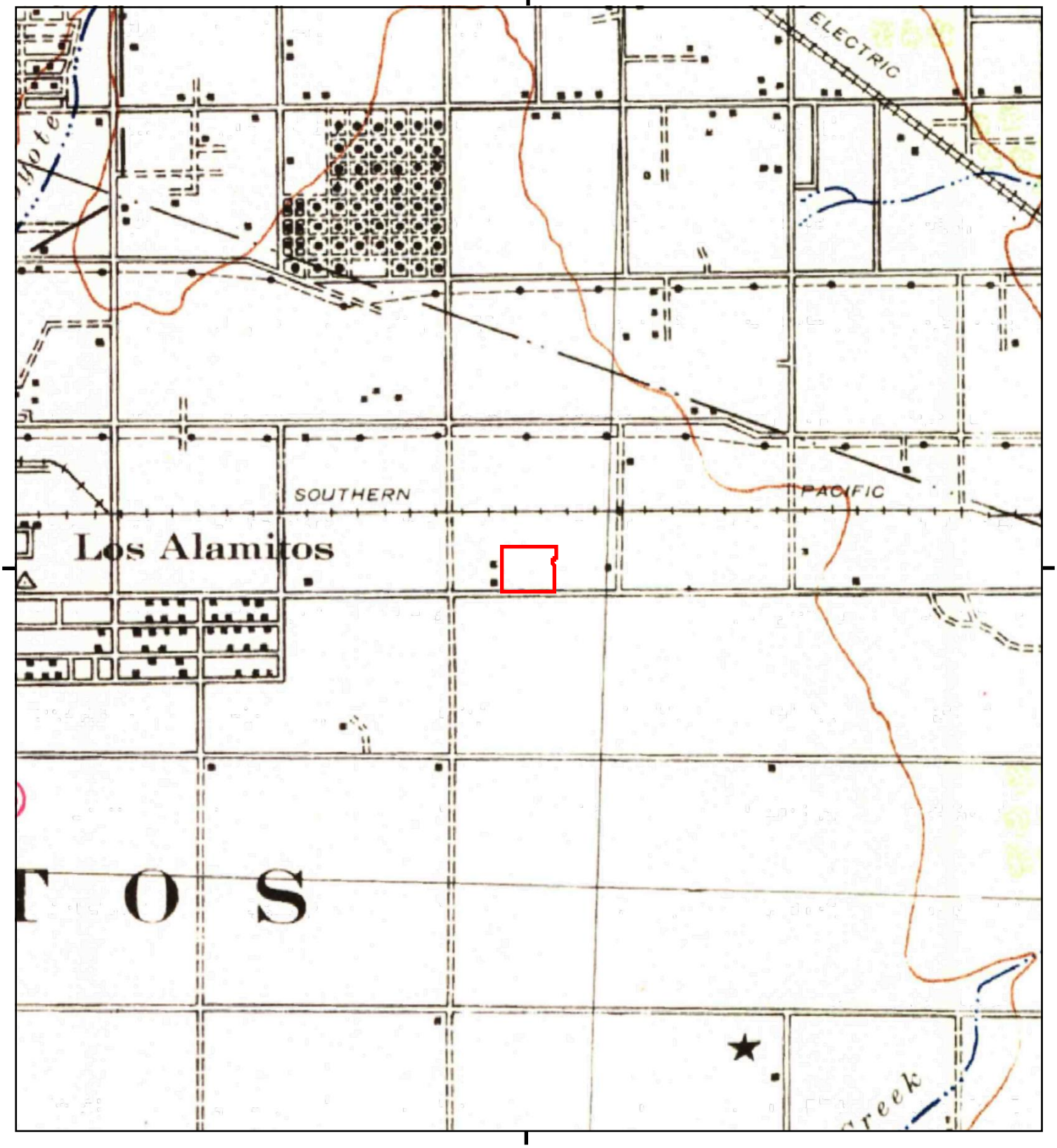
TP, Downey, 1943, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1942



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NW N NE
W E
SW S SE

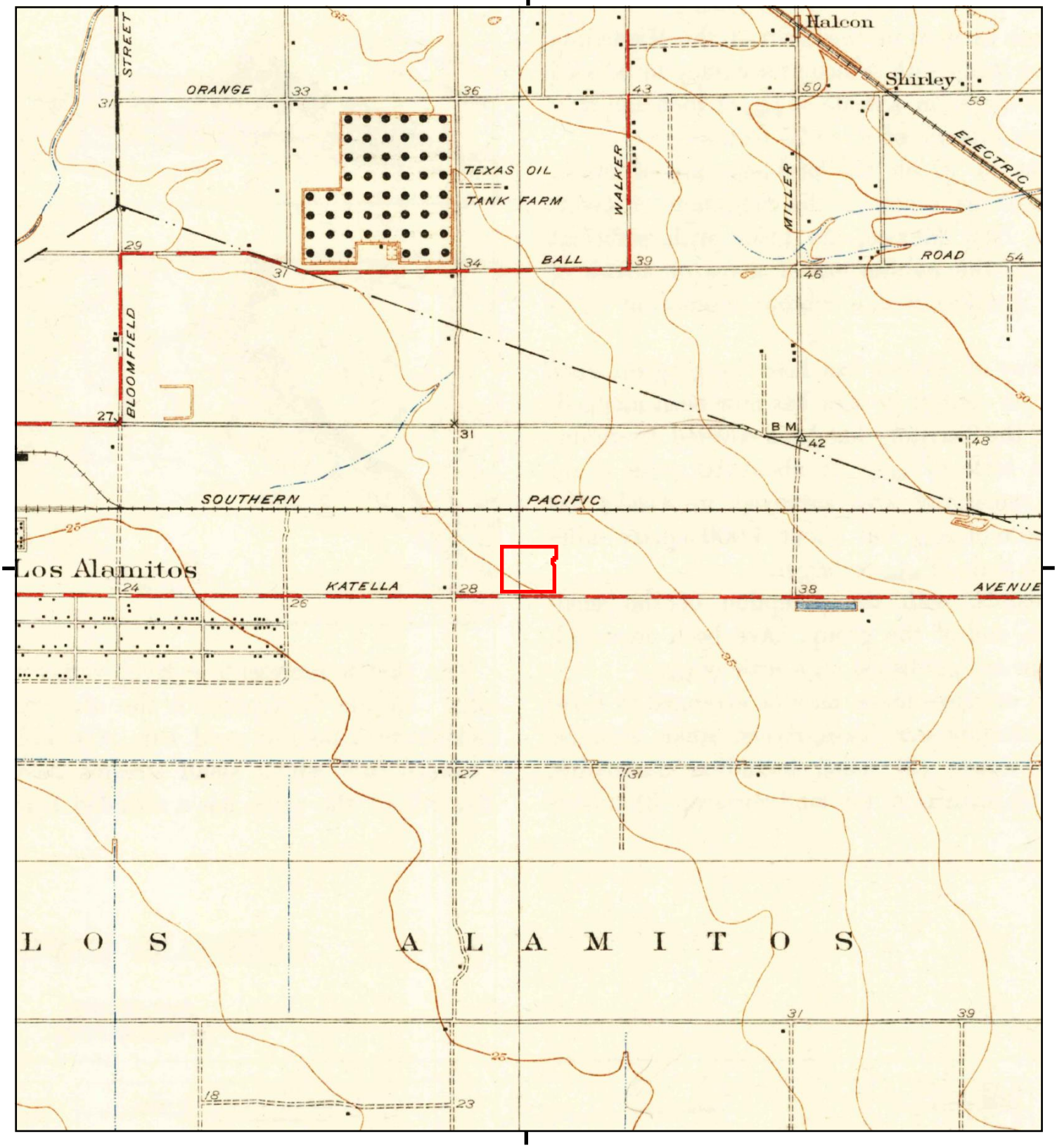
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Los Alamitos, CA 90720
CLIENT: Roux Associates

N

Historical Topo Map

1935



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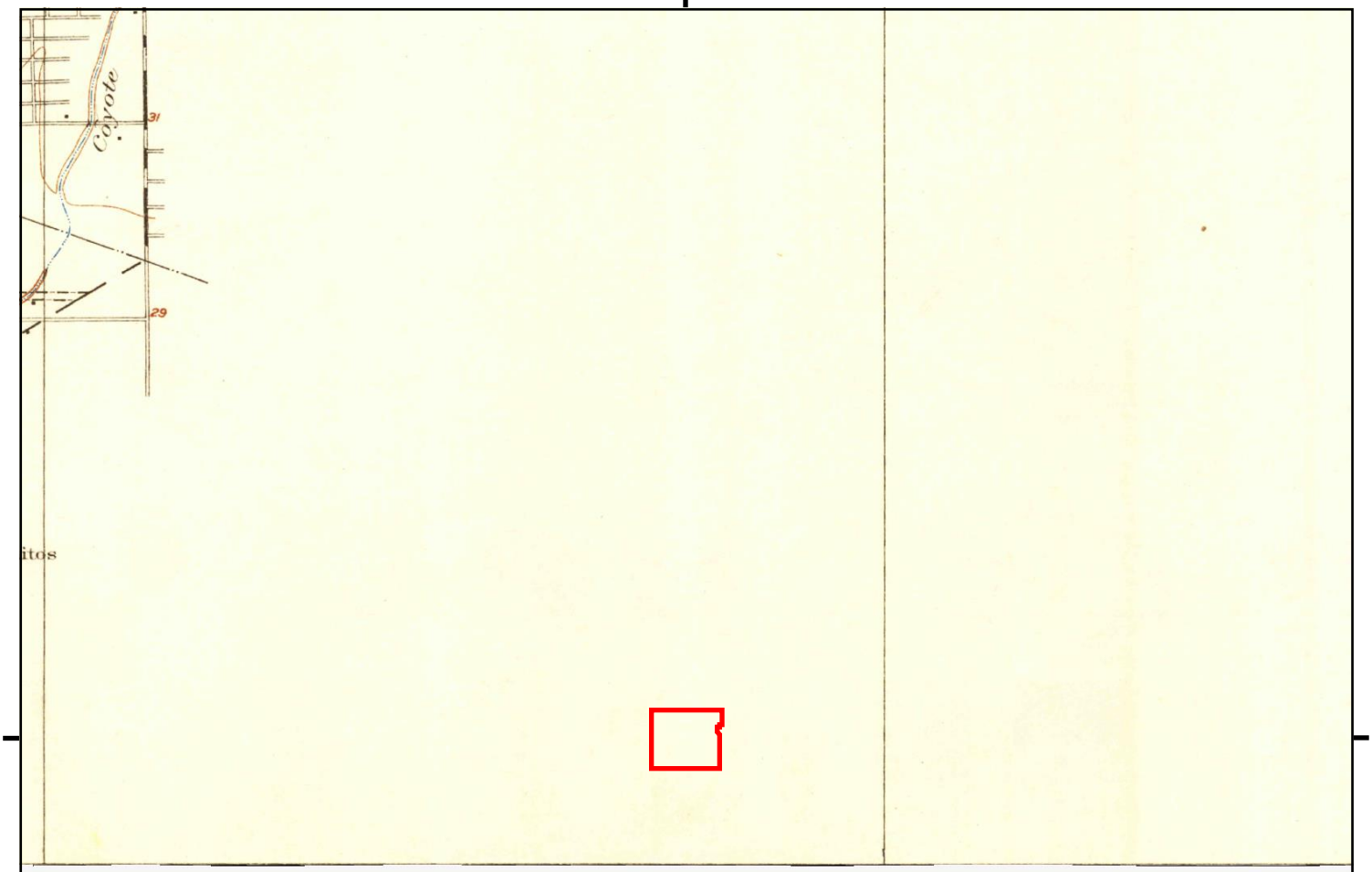
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Los Alamitos, 1935, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED
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This report includes information from the following map sheet(s).

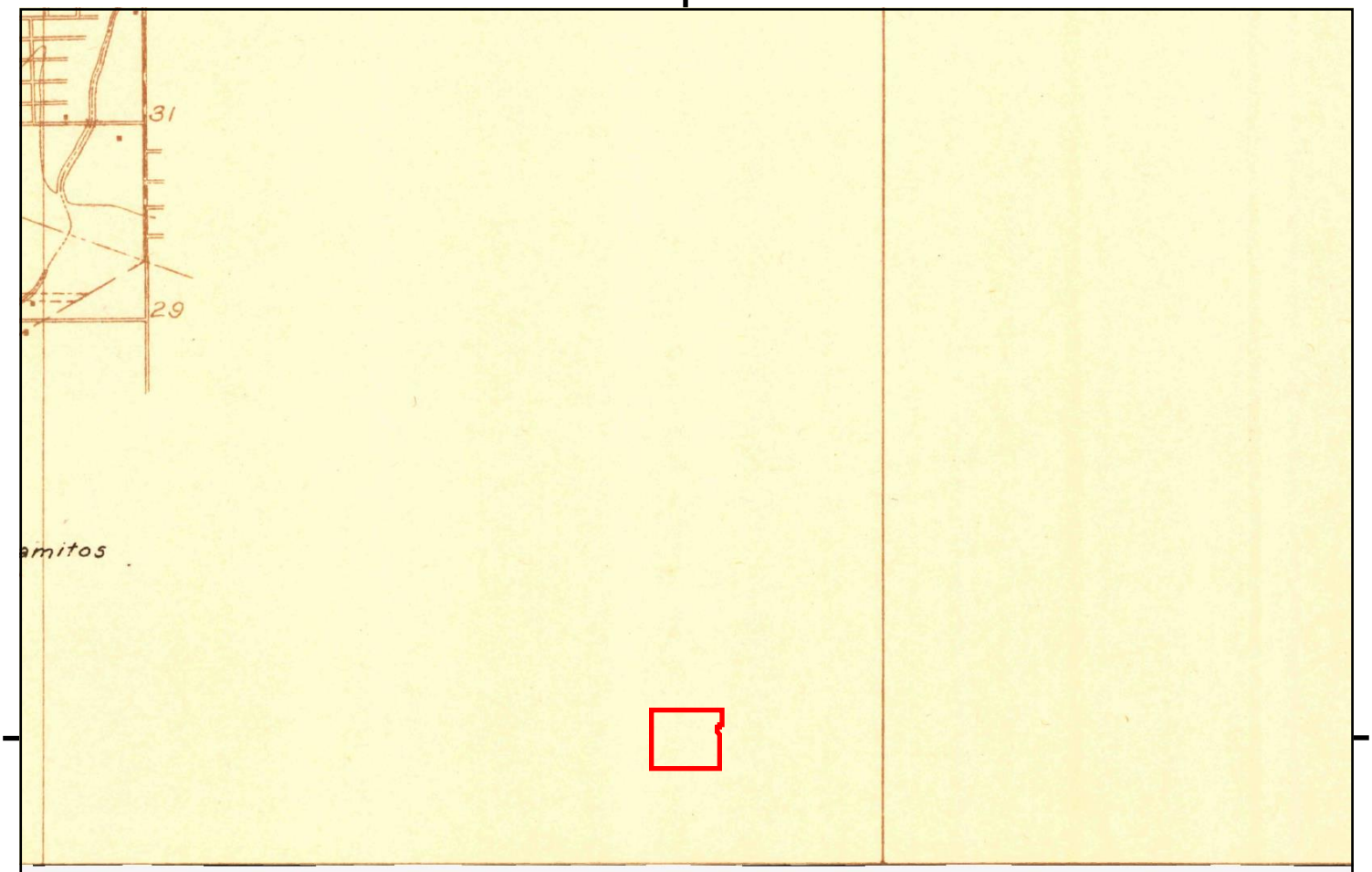
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Artesia, 1925, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

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This report includes information from the following map sheet(s).

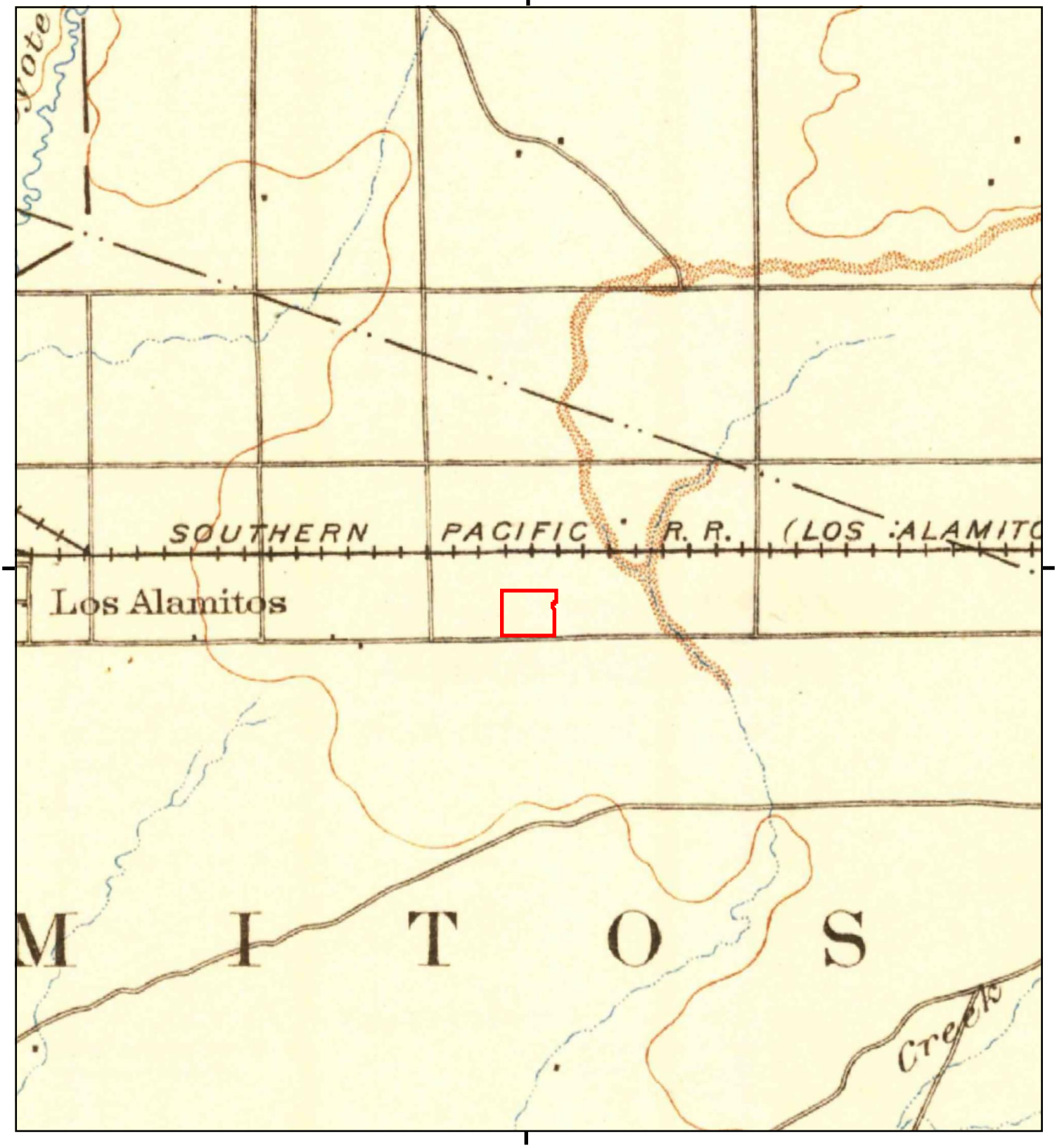
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NW N NE
W E
SW S SE

TP, Artesia, 1923, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



This report includes information from the following map sheet(s).

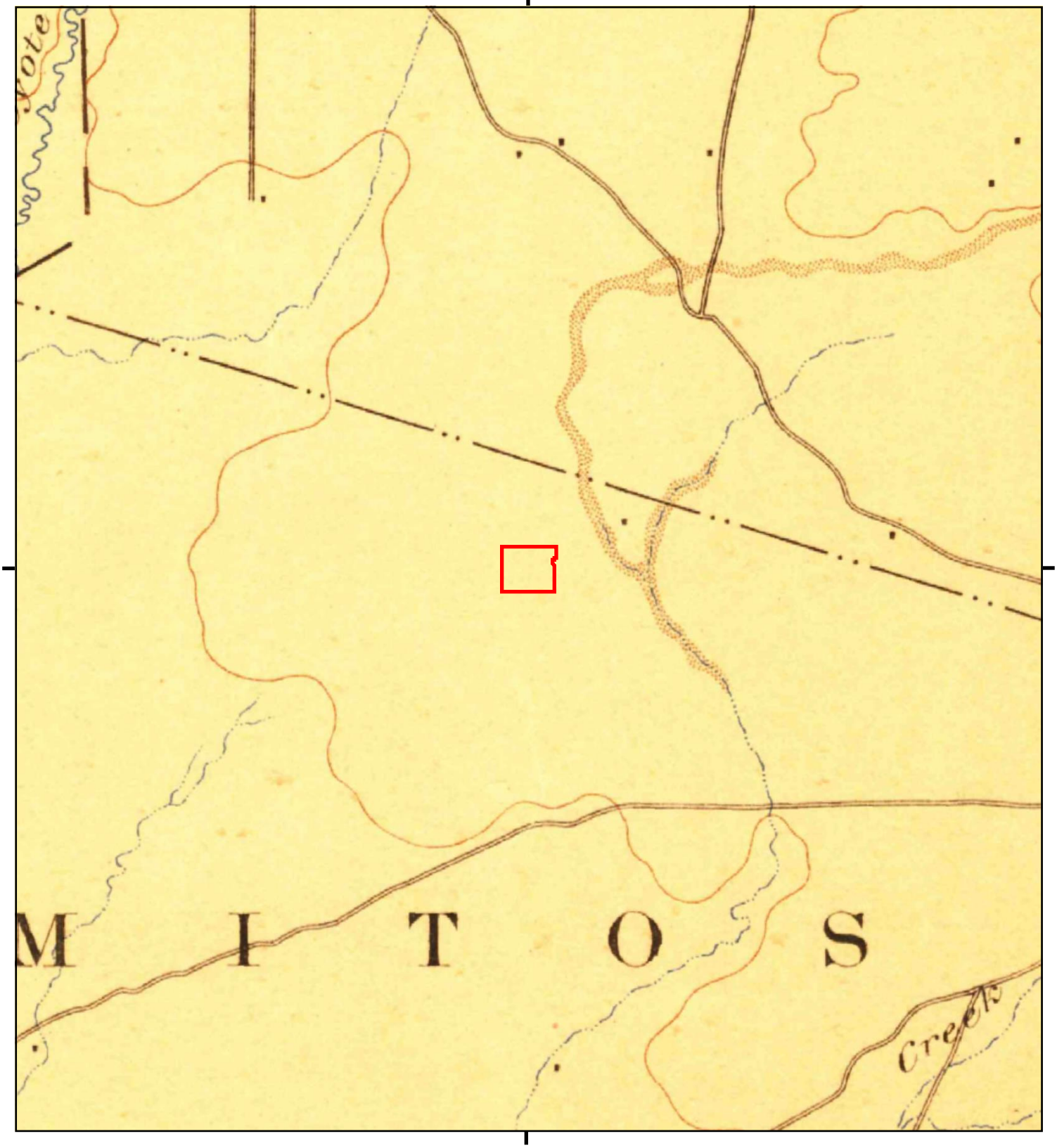
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Downey, 1902, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



This report includes information from the following map sheet(s).

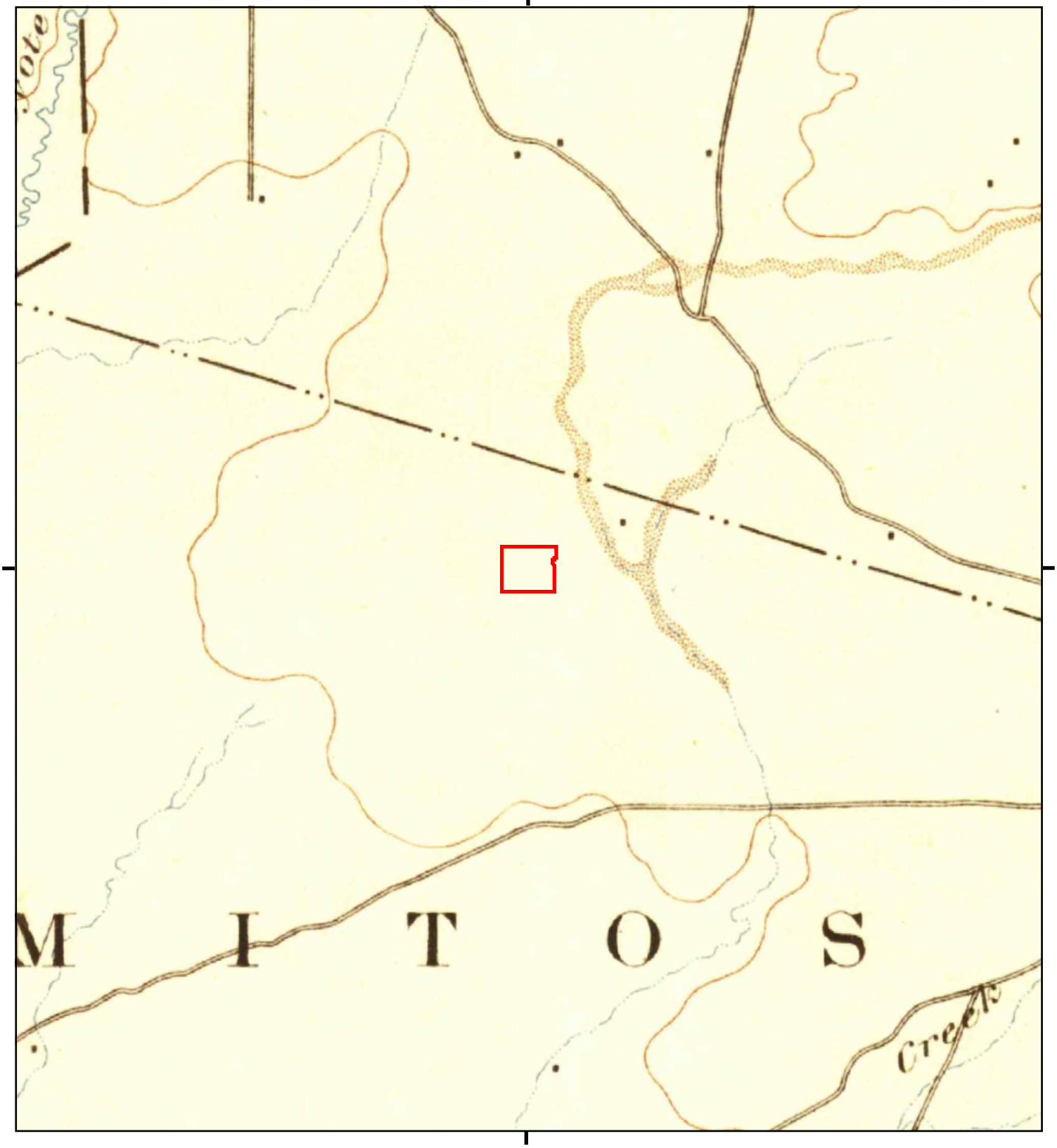
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Downey, 1899, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Downey, 1896, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Los Alamitos, CA 90720
CLIENT: Roux Associates

N

APPENDIX D

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

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Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	116
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-6
Physical Setting Source Map	A-11
Physical Setting Source Map Findings	A-13
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), 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 Tranverse 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
Reg	LOS ALAMITOS ARMED F		DOD	Same	1220, 0.231, South
A1	NELSON PAIDDS & SUSA	5122 KATELLA	RCRA NonGen / NLR	Higher	159, 0.030, SW
A2	BARKER ROBERT H	5122 KATELLA AVE	EDR Hist Auto	Higher	159, 0.030, SW
A3	KINCHER GARY	5100 KATELLA	EDR Hist Auto	Higher	226, 0.043, SW
A4	UNION OIL SERVICE ST	5100 KATELLA	LUST, HIST UST	Higher	226, 0.043, SW
A5	INNABI UNION 76 #1	5100 KATELLA AVE	SWEEPS UST, CA FID UST, HAZNET, HIST CORTESE	Higher	226, 0.043, SW
A6	TOSCO #5680	5100 KATELLA AVE	UST	Higher	226, 0.043, SW
A7	SERVICE STATION 5511	5100 KATELLA	HIST UST	Higher	226, 0.043, SW
A8		5100 KATELLA	RCRA-LQG	Higher	226, 0.043, SW
9	TILOS EUROPEAN AUTOH	5300 KATELLA AVE	RCRA NonGen / NLR, FINDS, ECHO, HAZNET	Higher	266, 0.050, SE
B10	RACER CLEANERS	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
B11	ALAMITOS CLEANERS AN	5074 KATELLA AV	EDR Hist Cleaner	Lower	407, 0.077, WSW
B12	ALAMITOS CLEANERS	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
B13	ALAMITOS LAUNDRY & D	5074 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
B14	ALAMITOS CLEANERS	5074-78 KATELLA AVE	DRYCLEANERS	Lower	407, 0.077, WSW
A15	DUTCH BOY DRY CLEANE	5131 ANTIETAM AVE	EDR Hist Cleaner	Higher	409, 0.077, SSW
C16	K & A IMPORT SERVICE	11061 WINNERS CIRCLE	RCRA-SQG, FINDS, ECHO	Lower	496, 0.094, SSE
C17	K&A IMPORTS	11061 WINNER CIRCLE	RCRA-SQG, HAZNET	Lower	496, 0.094, SSE
B18	LOS ALAMITOS RACE TR	4961 E KATELLA	RCRA-SQG, LUST, SWEEPS UST, CA FID UST, Orange Co....	Lower	549, 0.104, WSW
B19		4961 KATELLA AVE	AST	Lower	549, 0.104, WSW
B20	LOS ALAMITOS RACE CO	4961 KATELLA	LUST, ENF, HIST CORTESE, NPDES, CIWQS	Lower	549, 0.104, WSW
B21	ISLAND CLEANERS	4959 KATELLA AVE	EDR Hist Cleaner	Lower	552, 0.105, WSW
B22	OFFICE DEPOT 2281	4955 KATELLA AVE	RCRA NonGen / NLR	Lower	555, 0.105, WSW
23	CYPRESS GOLF CLUB	4921 KATELLA	LUST, NPDES	Lower	566, 0.107, WNW
D24	REPLANET LLC	5401 KATELLA AVE	SWRCY, CHMIRS	Higher	586, 0.111, ESE
D25	COSTCO WHOLESALE #74	5401 KATELLA AVE	UST	Higher	586, 0.111, ESE
C26	ENVIROCON INC	11082 WINNERS CIRCLE	RCRA NonGen / NLR, FINDS, ECHO	Lower	647, 0.123, SSE
27	GEORGE TOWNSHEND SFR	11132 MINDORA STREET	RCRA NonGen / NLR	Lower	766, 0.145, South
E28	COSTCO WHOLESALE #74	10901 WALKER ST	UST	Higher	896, 0.170, ENE
E29	COSTCO WHOLESALE NO	5401 KATELLA AVE	RCRA-LQG, HAZNET	Higher	896, 0.170, ENE
F30	COOLANT MANAGEMENT S	11052 VIA EL MERCADO	RCRA NonGen / NLR	Higher	913, 0.173, SE
F31	COOLANT MANAGEMENT S	11052 VIA EL MERCADO	AST	Higher	913, 0.173, SE
F32		11052 VIA EL MERCADO	AST	Higher	913, 0.173, SE
33	LTP MODERN MACHINE I	10900 WALKER ST	RCRA NonGen / NLR	Higher	1183, 0.224, ENE
G34	ROBERT KAHN PROPERTY	5001 CERRITOS	LUST	Higher	2073, 0.393, NNW
G35	UNOCAL #5330	5001 BALL RD	SWEEPS UST, CA FID UST, HIST CORTESE	Higher	2073, 0.393, NNW
36	ORANGE COUNTY FIRE S	4991 CERRITOS	LUST, SWEEPS UST, CA FID UST, HIST CORTESE	Higher	2182, 0.413, NNW
37	R & D BLDG PARCEL 7	5730 KATELLA AVE	ENVIROSTOR, HAZNET, CIWQS	Higher	2241, 0.424, ESE
H38	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
H39	ARROWHEAD PRODUCTS	4411 KATELLA AVENUE	ENVIROSTOR	Lower	3609, 0.684, West
40	JOINT FORCES TRAININ	4250 CONSTITUTION AV	RESPONSE, ENVIROSTOR, LUST	Lower	3628, 0.687, WSW
41	THE BOEING COMPANY	10800 VALLEY VIEW ST	ENVIROSTOR, Orange Co. Industrial Site, EMI,...	Higher	4017, 0.761, East
I42	LOS ALAMITOS RAD BOM		ENVIROSTOR	Lower	5050, 0.956, SW
I43	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 Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---------- Waste Management Unit Database
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

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
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
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

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported EPA ID:: CAL000169176	5100 KATELLA	SW 0 - 1/8 (0.043 mi.)	A8	20
COSTCO WHOLESALE NO EPA ID:: CAR000160200	***5401 KATELLA AVE***	***ENE 1/8 - 1/4 (0.170 mi.)***	***E29***	***66***

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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
K & A IMPORT SERVICE EPA ID:: CAD981445026	***11061 WINNERS CIRCLE***	***SSE 0 - 1/8 (0.094 mi.)***	***C16***	***27***
K&A IMPORTS EPA ID:: CAD981443161	***11061 WINNER CIRCLE***	***SSE 0 - 1/8 (0.094 mi.)***	***C17***	***28***
LOS ALAMITOS RACE TR EPA ID:: CAD981684483	***4961 E KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B18***	***30***

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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
JOINT FORCES TRAININ Database: RESPONSE, Date of Government Version: 01/28/2019	***4250 CONSTITUTION AV***	***WSW 1/2 - 1 (0.687 mi.)***	***40***	***105***

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 identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/28/2019 has revealed that there are 7 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
R & D BLDG PARCEL 7 Facility Id: 60002729 Status: Active	***5730 KATELLA AVE***	***ESE 1/4 - 1/2 (0.424 mi.)***	***37***	***90***
THE BOEING COMPANY Facility Id: 30990005 Status: Refer: 1248 Local Agency	***10800 VALLEY VIEW ST***	***E 1/2 - 1 (0.761 mi.)***	***41***	***110***

Lower Elevation	Address	Direction / Distance	Map ID	Page
VESPER CORP Facility Id: 30370008 Status: Refer: Local Agency	***4411 KATELLA AV***	***W 1/2 - 1 (0.684 mi.)***	***H38***	***93***
ARROWHEAD PRODUCTS Facility Id: 60002104 Status: Active	4411 KATELLA AVENUE	W 1/2 - 1 (0.684 mi.)	H39	104
JOINT FORCES TRAININ Facility Id: 30490037 Status: No Further Action	***4250 CONSTITUTION AV***	***WSW 1/2 - 1 (0.687 mi.)***	***40***	***105***
LOS ALAMITOS RAD BOM Facility Id: 80000425 Status: Inactive - Needs Evaluation		SW 1/2 - 1 (0.956 mi.)	I42	113
NAS LOS ALAMITOS Facility Id: 80000646 Status: Inactive - Needs Evaluation		SW 1/2 - 1 (0.956 mi.)	I43	115

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 6 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNION OIL SERVICE ST	***5100 KATELLA***	***SW 0 - 1/8 (0.043 mi.)***	***A4***	***10***
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				
ROBERT KAHN PROPERTY	5001 CERRITOS	NNW 1/4 - 1/2 (0.393 mi.)	G34	81
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				
ORANGE COUNTY FIRE S	***4991 CERRITOS***	***NNW 1/4 - 1/2 (0.413 mi.)***	***36***	***86***
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				

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOS ALAMITOS RACE TR	***4961 E KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B18***	***30***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0605900836 Global ID: T0605902069				
LOS ALAMITOS RACE CO	***4961 KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B20***	***39***
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				
CYPRESS GOLF CLUB	***4921 KATELLA***	***WNW 0 - 1/8 (0.107 mi.)***	***23***	***50***
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: 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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
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

Lower Elevation	Address	Direction / Distance	Map ID	Page
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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
REPLANET LLC Cert Id: RC218172.001	***5401 KATELLA AVE***	***ESE 0 - 1/8 (0.111 mi.)***	***D24***	***60***

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INNABI UNION 76 #1 Status: A Tank Status: A Comp Number: 136	***5100 KATELLA AVE***	***SW 0 - 1/8 (0.043 mi.)***	***A5***	***16***

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOS ALAMITOS RACE TR Status: A Tank Status: A Comp Number: 5314	***4961 E KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B18***	***30***

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNION OIL SERVICE ST Facility Id: 00000056204	***5100 KATELLA***	***SW 0 - 1/8 (0.043 mi.)***	***A4***	***10***
SERVICE STATION 5511 Facility Id: 00000008023	5100 KATELLA	SW 0 - 1/8 (0.043 mi.)	A7	19

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INNABI UNION 76 #1 Facility Id: 30000665 Status: A	***5100 KATELLA AVE***	***SW 0 - 1/8 (0.043 mi.)***	***A5***	***16***

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOS ALAMITOS RACE TR Facility Id: 30000858 Status: A	***4961 E KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B18***	***30***

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NELSON PAIDDS & SUSA EPA ID:: CAL000259066	5122 KATELLA	SW 0 - 1/8 (0.030 mi.)	A1	8
TILOS EUROPEAN AUTOH EPA ID:: CAR000078394	***5300 KATELLA AVE***	***SE 0 - 1/8 (0.050 mi.)***	***9***	***21***
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

Lower Elevation	Address	Direction / Distance	Map ID	Page
OFFICE DEPOT 2281 EPA ID:: CAL000420839	4955 KATELLA AVE	WSW 0 - 1/8 (0.105 mi.)	B22	49
ENVIROCON INC EPA ID:: CAD983586744	***11082 WINNERS CIRCLE***	***SSE 0 - 1/8 (0.123 mi.)***	***C26***	***62***
GEORGE TOWNSHEND SFR EPA ID:: CAC002982790	11132 MINDORA STREET	S 1/8 - 1/4 (0.145 mi.)	27	65

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RACER CLEANERS	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B10	23
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				
ALAMITOS CLEANERS	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B12	25
Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019				
ALAMITOS LAUNDRY & D	5074 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B13	26
Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019				
ALAMITOS CLEANERS	5074-78 KATELLA AVE	WSW 0 - 1/8 (0.077 mi.)	B14	26
Database: DRYCLEAN SOUTH COAST, Date of Government Version: 03/19/2019				

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INNABI UNION 76 #1 Reg Id: 083000585T	***5100 KATELLA AVE***	***SW 0 - 1/8 (0.043 mi.)***	***A5***	***16***
UNOCAL #5330 Reg Id: 083002183T Reg Id: 083001897T	***5001 BALL RD***	***NNW 1/4 - 1/2 (0.393 mi.)***	***G35***	***83***
ORANGE COUNTY FIRE S Reg Id: 083003072T	***4991 CERRITOS***	***NNW 1/4 - 1/2 (0.413 mi.)***	***36***	***86***

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOS ALAMITOS RACE TR	***4961 E KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B18***	***30***

Reg Id: 083003034T				
LOS ALAMITOS RACE CO	***4961 KATELLA***	***WSW 0 - 1/8 (0.104 mi.)***	***B20***	***39***
Reg Id: 083001061T				

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DUTCH BOY DRY CLEANE	5131 ANTIETAM AVE	SSW 0 - 1/8 (0.077 mi.)	A15	27

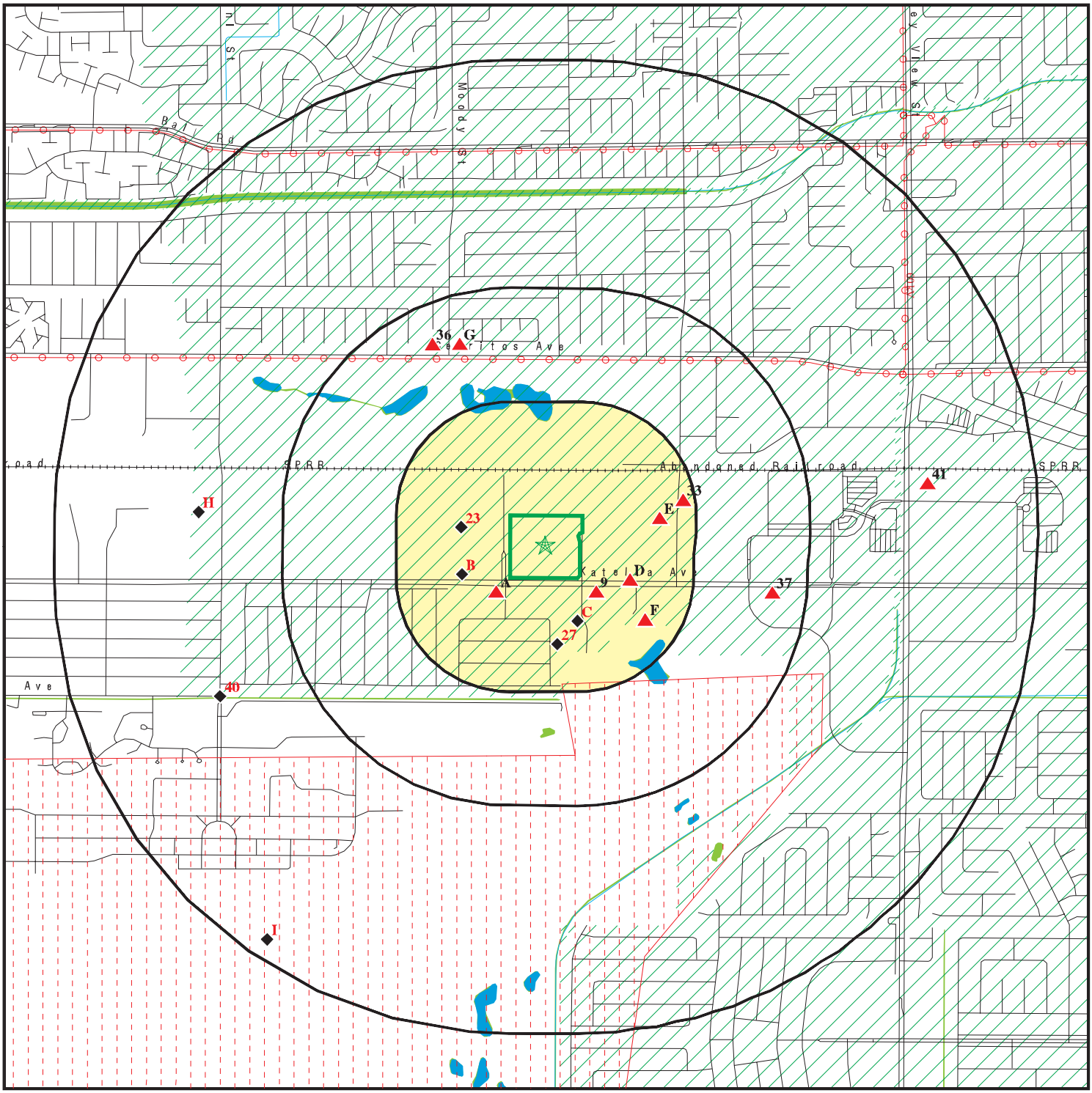
Lower Elevation	Address	Direction / Distance	Map ID	Page
ALAMITOS CLEANERS AN	5074 KATELLA AV	WSW 0 - 1/8 (0.077 mi.)	B11	25
ISLAND CLEANERS	4959 KATELLA AVE	WSW 0 - 1/8 (0.105 mi.)	B21	48

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
BENJAMIN B & MARIA L BARAJAS DBA	DRYCLEANERS

OVERVIEW MAP - 5646263.2S



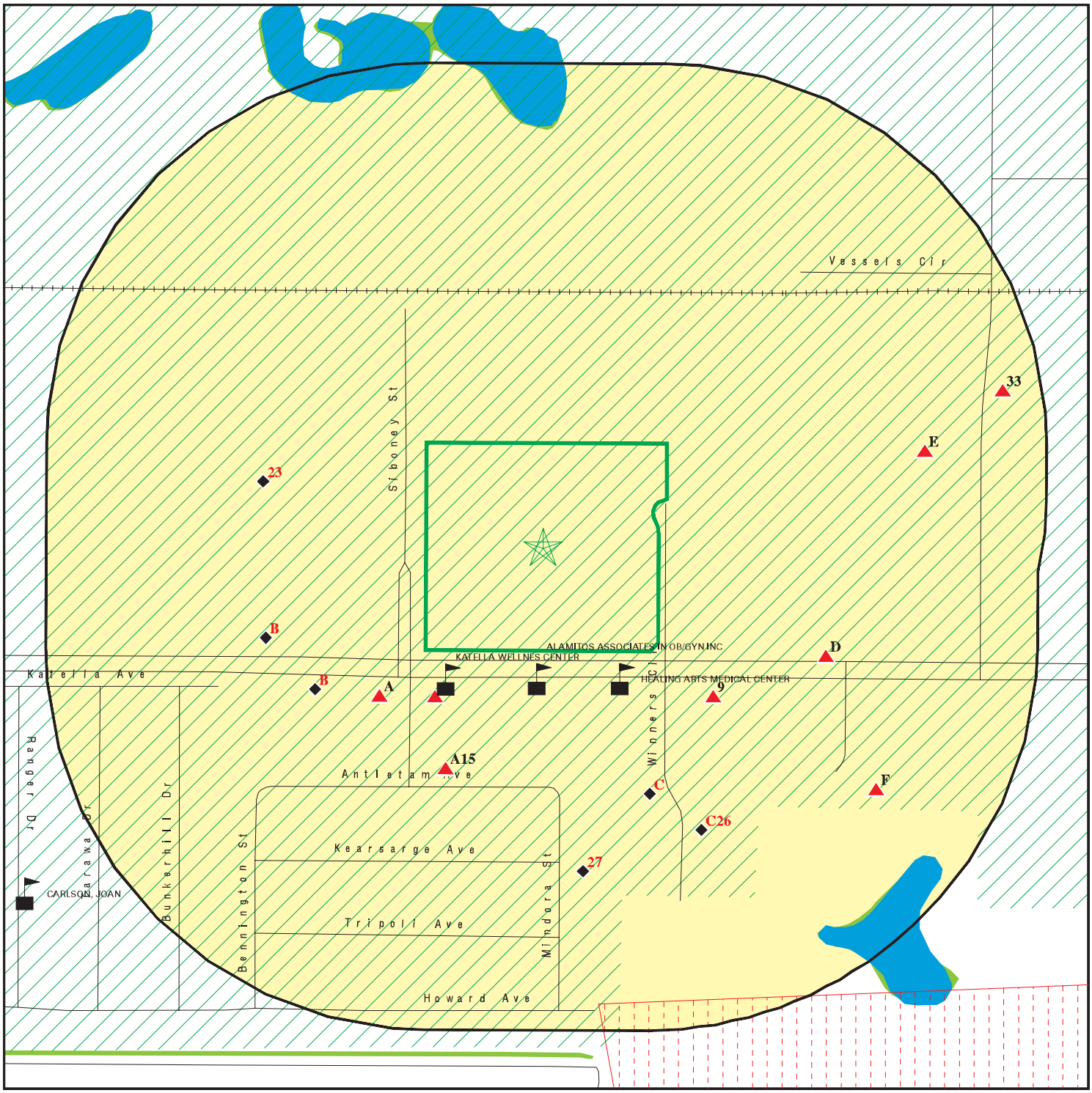
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

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

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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

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

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		1	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
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	1	NR	1
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	6	NR	7
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		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
State and tribal registered storage tank lists								
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
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		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
Local Lists of Hazardous waste / Contaminated Sites								
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
Local Lists of Registered Storage Tanks								
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
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
Orange Co. Industrial Site	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		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

DOD **LOS ALAMITOS ARMED FORCES RESERVE CENTER** **DOD** **CUSA143754**
Region **N/A**
South
LOS ALAMITOS ARMED FORCES (County), CA
1/8-1/4
1220 ft.

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 **NELSON PAIDDS & SUSAN ISHIOKA DDS MS INC** **RCRA NonGen / NLR** **1024804597**
SW **5122 KATELLA** **CAL000259066**
< 1/8 **LOS ALAMITOS, CA 90720**
0.030 mi.
159 ft. **Site 1 of 9 in cluster A**

Relative:
Higher

Actual:
32 ft.

RCRA NonGen / NLR:
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

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 **BARKER ROBERT H** **EDR Hist Auto** **1021609418**
SW **5122 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.030 mi.
159 ft. **Site 2 of 9 in cluster A**

Relative: EDR Hist Auto
Higher

Actual:
32 ft.

Year:	Name:	Type:
1969	BARKER ROBERT H	Gasoline Service Stations
1970	BARKER ROBERT H	Gasoline Service Stations
1971	BARKER ROBERT H	Gasoline Service Stations
1972	BARKER ROBERT H	Gasoline Service Stations
1973	BARKER ROBERT H	Gasoline Service Stations
1974	BARKER ROBERT H	Gasoline Service Stations
1975	BARKER ROBERT H	Gasoline Service Stations
1976	BARKER ROBERT H	Gasoline Service Stations
1977	BARKER ROBERT H	Gasoline Service Stations
1978	BARKER ROBERT H	Gasoline Service Stations
1979	BARKER ROBERT H	Gasoline Service Stations
1980	BARKER ROBERT H	Gasoline Service Stations
1982	BARKER ROBERT H	Gasoline Service Stations
1983	BARKER ROBERT H	Gasoline Service Stations

A3 **KINCHER GARY** **EDR Hist Auto** **1020594478**
SW **5100 KATELLA** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.043 mi.
226 ft. **Site 3 of 9 in cluster A**

Relative: EDR Hist Auto
Higher

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 **UNION OIL SERVICE STATION 5511** **LUST** **1000166553**
SW **5100 KATELLA** **HIST UST** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.043 mi.
226 ft. **Site 4 of 9 in cluster A**

Relative: LUST:
Higher

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=T0605900471
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

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

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

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

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

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:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D6E3.pdf
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

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 **INNABI UNION 76 #1** **SWEEPS UST** **S101588973**
SW **5100 KATELLA AVE** **CA FID UST** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720** **HAZNET**
0.043 mi. **HIST CORTESE**
226 ft. **Site 5 of 9 in cluster A**

Relative: Higher
Actual: 32 ft.

SWEEPS UST:

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

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

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

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 **TOSCO #5680** **UST** **U003942130**
SW **5100 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.043 mi.
226 ft. **Site 6 of 9 in cluster A**

Relative:
Higher

Actual:
32 ft.

UST:
Facility ID: Not reported
Permitting Agency: Orange County Environmental Health
Latitude: 33.80264
Longitude: -118.04396

Facility ID: 18767
Permitting Agency: ORANGE COUNTY
Latitude: 33.8039889
Longitude: -118.042611

ORANGE CO. UST:
Facility ID: FA0051673

A7 **SERVICE STATION 5511** **HIST UST** **U001565447**
SW **5100 KATELLA** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.043 mi.
226 ft. **Site 7 of 9 in cluster A**

Relative:
Higher

Actual:
32 ft.

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

SERVICE STATION 5511 (Continued) **U001565447**

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:	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 **RCRA-LQG** **1007200349**
SW **5100 KATELLA** **CAL000169176**
< 1/8 **LOS ALAMITOS, CA 90720**
0.043 mi.
226 ft. **Site 8 of 9 in cluster A**

Relative:
Higher

Actual:
32 ft.

RCRA-LQG:

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

(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
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

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9 **TILOS EUROPEAN AUTOHAUS** **RCRA NonGen / NLR** **1004675889**
SE **5300 KATELLA AVE** **FINDS** **CAR000078394**
< 1/8 **LOS ALAMITOS, CA 90720** **ECHO**
0.050 mi. **HAZNET**
266 ft.

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

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
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D002
. Waste name: CORROSIVE WASTE

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

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 **RACER CLEANERS** **DRYCLEANERS** **S106077058**
WSW **5074 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.077 mi.
407 ft. **Site 1 of 10 in cluster B**

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

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

RACER CLEANERS (Continued) **S106077058**

UTM East: 0
UTM North: 0

B11 **ALAMITOS CLEANERS AND LAUNDRY** **EDR Hist Cleaner** **1018665851**
WSW **5074 KATELLA AV** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.077 mi.
407 ft. **Site 2 of 10 in cluster B**

Relative: EDR Hist Cleaner
Lower

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 **ALAMITOS CLEANERS** **DRYCLEANERS** **S121698047**
WSW **5074 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA**
0.077 mi.
407 ft. **Site 3 of 10 in cluster B**

Relative: DRYCLEAN SOUTH COAST:
Lower

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

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 **ALAMITOS LAUNDRY & DRY CLEANERS** **DRYCLEANERS** **S121694087**
WSW **5074 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.077 mi.
407 ft. **Site 4 of 10 in cluster B**

Relative:
Lower

Actual:
30 ft.

DRYCLEAN SOUTH COAST:

Facility ID:	115287
Application Number:	338739
Permit Number:	Not reported
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 **ALAMITOS CLEANERS** **DRYCLEANERS** **S121698556**
WSW **5074-78 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.077 mi.
407 ft. **Site 5 of 10 in cluster B**

Relative:
Lower

Actual:
30 ft.

DRYCLEAN SOUTH COAST:

Facility ID:	56429
Application Number:	154924
Permit Number:	Not reported
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

A15
SSW
< 1/8
0.077 mi.
409 ft.

DUTCH BOY DRY CLEANERS
5131 ANTIETAM AVE
LOS ALAMITOS, CA 90720

EDR Hist Cleaner **1018886365**
N/A

Site 9 of 9 in cluster A

Relative:
Higher

Actual:
32 ft.

EDR Hist Cleaner

Year:	Name:	Type:
2014	DUTCH BOY DRY CLEANERS	Garment Pressing And Cleaners' Agents

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C16
SSE
< 1/8
0.094 mi.
496 ft.

K & A IMPORT SERVICES
11061 WINNERS CIRCLE
LOS ALAMITOS, CA 90720

RCRA-SQG **1000101121**
FINDS **CAD981445026**
ECHO

Site 1 of 3 in cluster C

Relative:
Lower

Actual:
31 ft.

RCRA-SQG:

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

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 **K&A IMPORTS** **RCRA-SQG** **1000118632**
SSE **11061 WINNER CIRCLE** **HAZNET** **CAD981443161**
< 1/8 **LOS ALAMITOS, CA 90720**
0.094 mi.
496 ft. **Site 2 of 3 in cluster C**

Relative: **Lower**

Actual: **31 ft.**

RCRA-SQG:
Date form received by agency: 09/10/1986
Facility name: K&A IMPORTS
Facility address: 11061 WINNER CIRCLE

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

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 **LOS ALAMITOS RACE TRACK** **RCRA-SQG** **1000101555**
WSW **4961 E KATELLA** **LUST** **CAD981684483**
< 1/8 **LOS ALAMITOS, CA 90720** **SWEEPS UST**
0.104 mi. **CA FID UST**
549 ft. **Site 6 of 10 in cluster B** **Orange Co. Industrial Site**
FINDS
Relative: Lower **ECHO**
HAZNET
Actual: 31 ft. **HIST CORTESE**
CIWQS

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

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

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

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

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

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

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

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

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 **AST** **A100340703**
WSW **4961 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA**
0.104 mi.
549 ft. **Site 7 of 10 in cluster B**

Relative: AST:
Lower
Certified Unified Program Agencies: Orange
Actual: Owner: LOS ALAMITOS RACE COURSE
31 ft. 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

(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 **LOS ALAMITOS RACE COURSE** **LUST** **S100723265**
WSW **4961 KATELLA** **ENF** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720** **HIST CORTESE**
0.104 mi. **NPDES**
549 ft. **Site 8 of 10 in cluster B** **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
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

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
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

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

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

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

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

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 alamitos 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

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 Commertial 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

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 alamitos Race Course
Discharge Address:	4961
Discharge City:	Los Alamitos
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 Commertial 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

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 alamitos 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 **ISLAND CLEANERS** **EDR Hist Cleaner** **1020010145**
WSW **4959 KATELLA AVE** **N/A**
< 1/8 **LOS ALAMITOS, CA 90720**
0.105 mi.
552 ft. **Site 9 of 10 in cluster B**

Relative: EDR Hist Cleaner
Lower

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

B22 **OFFICE DEPOT 2281** **RCRA NonGen / NLR** **1024856648**
WSW **4955 KATELLA AVE** **CAL000420839**
< 1/8 **LOS ALAMITOS, CA 90720**
0.105 mi.
555 ft. **Site 10 of 10 in cluster B**

Relative:
Lower

Actual:
31 ft.

RCRA NonGen / NLR:

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

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** **LUST S106387355**
4921 KATELLA **NPDES N/A**
CYPRESS, CA 90630

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
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
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
Phone Number:	7144336251

LUST:

Global Id:	T0605997341
Action Type:	Other
Date:	03/22/2004

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

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

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

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 Commertial Ind:	Y

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

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 Commertial 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

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

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 Commertial 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

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 Commertial 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

D24 **REPLANET LLC** **SWRCY** **S109039828**
ESE **5401 KATELLA AVE** **CHMIRS** **N/A**
< 1/8 **CYPRESS, CA 90720**
0.111 mi.
586 ft. **Site 1 of 2 in cluster D**

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

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 Managment 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 **COSTCO WHOLESALE #748** **UST** **U004263286**
ESE **5401 KATELLA AVE** **N/A**
< 1/8 **CYPRESS, CA 90720**
0.111 mi.
586 ft. **Site 2 of 2 in cluster D**

Relative: UST:
Higher

Facility ID:	FA0064582
Permitting Agency:	Orange County Environmental Health
Latitude:	33.80311
Longitude:	-118.03848

Actual:
33 ft.

C26 **ENVIROCON INC** **RCRA NonGen / NLR** **1000594790**
SSE **11082 WINNERS CIRCLE** **FINDS** **CAD983586744**
< 1/8 **LOS ALAMITOS, CA 90720** **ECHO**
0.123 mi.
647 ft. **Site 3 of 3 in cluster C**

Relative:
Lower

Actual:
31 ft.

RCRA NonGen / NLR:

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

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

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

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 **RCRA NonGen / NLR** **1024762928**
11132 MINDORA STREET **CAC002982790**
LOS ALAMITOS, CA 90720

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

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 **COSTCO WHOLESALE #748 (GAS STATION)** **UST** **U004004601**
ENE **10901 WALKER ST** **N/A**
1/8-1/4 **CYPRESS, CA 90630**
0.170 mi.
896 ft. **Site 1 of 2 in cluster E**

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 **COSTCO WHOLESALE NO 748** **RCRA-LQG** **1007989088**
ENE **5401 KATELLA AVE** **HAZNET** **CAR000160200**
1/8-1/4 **CYPRESS, CA 90630**
0.170 mi.
896 ft. **Site 2 of 2 in cluster E**

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

COSTCO WHOLESALE NO 748 (Continued) **1007989088**

CYPRESS, CA 90630-0000
EPA ID: 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

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)-

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-METHOXY-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

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

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

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

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

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 PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET,

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

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

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 **COOLANT MANAGEMENT SERVICES CO INC** **RCRA NonGen / NLR** **1024801384**
SE **11052 VIA EL MERCADO** **CAL000229936**
1/8-1/4 **LOS ALAMITOS, CA 90720**
0.173 mi.
913 ft. **Site 1 of 3 in cluster F**

Relative: **Higher**

Actual: **33 ft.**

RCRA NonGen / NLR:

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

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
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

F31 **COOLANT MANAGEMENT SERVICES** **AST** **A100418996**
SE **11052 VIA EL MERCADO** **N/A**
1/8-1/4 **LOS ALAMITOS, CA 90720**
0.173 mi.
913 ft. **Site 2 of 3 in cluster F**

Relative:
Higher

Actual:
33 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	Same as above
Total Gallons:	Not reported
CERSID:	10448128
Facility ID:	Not reported

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 **AST** **A100336674**
SE **11052 VIA EL MERCADO** **N/A**
1/8-1/4 **LOS ALAMITOS, CA**
0.173 mi.
913 ft. **Site 3 of 3 in cluster F**

Relative: AST:
Higher

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

Actual:
33 ft.

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

Actual:
36 ft.

RCRA NonGen / NLR:

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

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 **ROBERT KAHN PROPERTY/FORMER HRAKO SRVC CNTR** **LUST** **S106447590**
NNW **5001 CERRITOS** **N/A**
1/4-1/2 **CYPRESS, CA 90630**
0.393 mi.
2073 ft. **Site 1 of 2 in cluster G**

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=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
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
Phone Number: 7144336251

LUST:
Global Id: T0605901416
Action Type: Other
Date: 08/27/1991
Action: Leak Reported

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

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** **SWEEPS UST** **S101589119**
NNW **5001 BALL RD** **CA FID UST** **N/A**
1/4-1/2 **CYPRESS, CA 90630** **HIST CORTESE**
0.393 mi.
2073 ft. **Site 2 of 2 in cluster G**

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

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

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

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
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

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

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

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

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 **S121666303**
HAZNET **N/A**
CIWQS

Relative:
Higher

Actual:
37 ft.

ENVIROSTOR:
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

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

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

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 **VESPER CORP** **ENVIROSTOR** **S101481470**
West **4411 KATELLA AV** **EMI** **N/A**
1/2-1 **LOS ALAMITOS, CA 90720** **HAZNET**
0.684 mi. **CIWQS**
3609 ft. **Site 1 of 2 in cluster H**

Relative:
Lower

Actual:
28 ft.

ENVIROSTOR:

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

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.

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

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

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

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 Smllr 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 Smllr 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 Smllr 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 Smllr Tons/Yr:	0.03

Year:	2005

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 Smllr 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 Smllr 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 Smllr 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

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 Smllr 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 Smllr 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 Smllr 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

VESPER CORP (Continued) **S101481470**

SOX - Oxides of Sulphur Tons/Yr: 0.00294
Particulate Matter Tons/Yr: 0.04052
Part. Matter 10 Micrometers and Smllr 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 Smllr 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 Smllr 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/Reovery (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/Reovery (H010-H129) Or (H131-H135)

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

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

H39 **ARROWHEAD PRODUCTS** **ENVIROSTOR** **S117038742**
West **4411 KATELLA AVENUE** **N/A**
1/2-1 **LOS ALAMITOS, CA 90720**
0.684 mi.
3609 ft. **Site 2 of 2 in cluster H**

Relative:
Lower

Actual:
28 ft.

ENVIROSTOR:

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

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 **S106387296**
ENVIROSTOR **N/A**
LUST

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

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

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

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

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

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 **S103622068**
Orange Co. Industrial Site **N/A**
EMI
HAZNET

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:

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

THE BOEING COMPANY (Continued) **S103622068**

Part. Matter 10 Micrometers and Smllr 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)

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 **LOS ALAMITOS RAD BOMB/SCORE SITE** **ENVIROSTOR** **S107737117**
SW **N/A**
1/2-1 **LOS ALAMITOS, CA**
0.956 mi.
5050 ft. **Site 1 of 2 in cluster I**

Relative: ENVIROSTOR:
Lower
Facility ID: 80000425
Actual: Status: Inactive - Needs Evaluation
26 ft. Status Date: 08/14/2018
Site Code: Not reported
Site Type: Military Evaluation

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

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:
Lower

Actual:
26 ft.

ENVIROSTOR:

Facility ID:	80000646
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	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
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

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

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
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

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 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 know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 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

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
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 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
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/27/2019
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
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

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
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

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
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

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
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

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
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 41

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/07/2019
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
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
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
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019
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 identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/28/2019
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 inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/11/2019
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

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

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.

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

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

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
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/11/2018
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
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/13/2019
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
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

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 03/18/2019
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
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: 404-562-9424
Last EDR Contact: 04/26/2019
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
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: 312-886-6136
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

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
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 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
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 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
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: 303-312-6137
Last EDR Contact: 04/26/2019
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
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/26/2019
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
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

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
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: 214-665-7591
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/25/2019
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
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 Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 34
Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/26/2019
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
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/19/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 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

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 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

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
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/11/2019
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
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: 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
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 04/15/2019
Number of Days to Update: 52

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/11/2019
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
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/21/2019
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.

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

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
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/05/2019
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
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 41

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/26/2019
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
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 40

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/26/2019
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
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 Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
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
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: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019
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.

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.

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

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

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: 202-564-6023
Last EDR Contact: 04/18/2019
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
Date Data Arrived at EDR: 10/11/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 57

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/10/2019
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
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 04/08/2019
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
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/22/2019
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
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/07/2019
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
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/05/2019
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
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/26/2019
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
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/02/2019
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
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 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 Transporation, 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.

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 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 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.

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
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/09/2019
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
Date Data Arrived at EDR: 02/21/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 39

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2019
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
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 36

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/26/2019
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
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 11

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/18/2019
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
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 34

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/26/2019
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.

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 Resoruces 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.

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 Subsances 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

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2018
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
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/05/2019
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
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 23
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/12/2019
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
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/05/2019
Number of Days to Update: 31
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2019
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
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 47
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

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
Date Data Arrived at EDR: 03/19/2019
Date Made Active in Reports: 04/29/2019
Number of Days to Update: 41
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/13/2019
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
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 Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
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
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/12/2019
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
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/13/2019
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
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

PROJECT: Project Sites (GEOTRACKER)
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

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.

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

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

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:

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:

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:

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

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
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/15/2019
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
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/22/2019
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
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/22/2019
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
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 13

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/15/2019
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
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

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:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2019
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
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 26

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2019
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
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 31

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2019
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
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/12/2019
Number of Days to Update: 42

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/27/2019
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
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/22/2019
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
Date Data Arrived at EDR: 04/12/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 18

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

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:

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 Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/02/2019
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.

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:

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:

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 Ennvironmental 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:

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: Divison 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.

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

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

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

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GEOCHECK ®- 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 Tranverse 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).

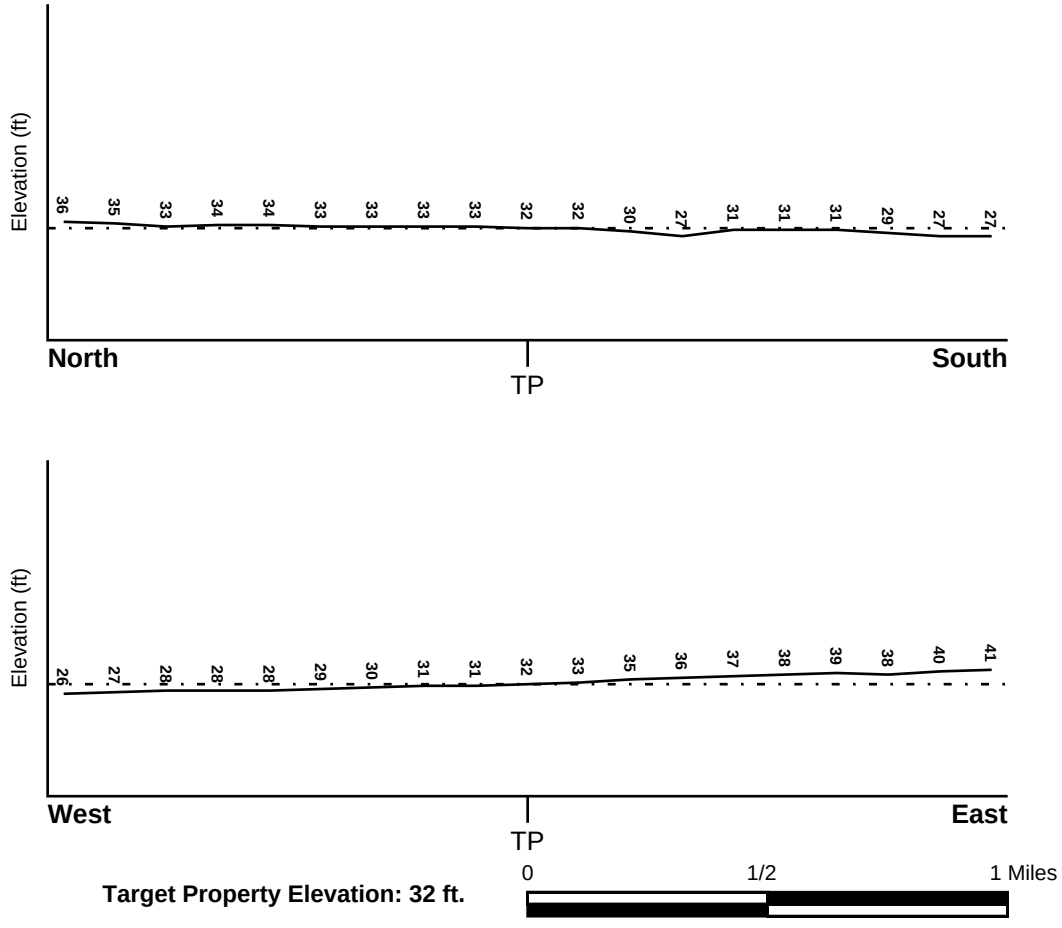
TOPOGRAPHIC INFORMATION

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



Target Property Elevation: 32 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06037C2000F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW

* ©1996 Site--specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
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

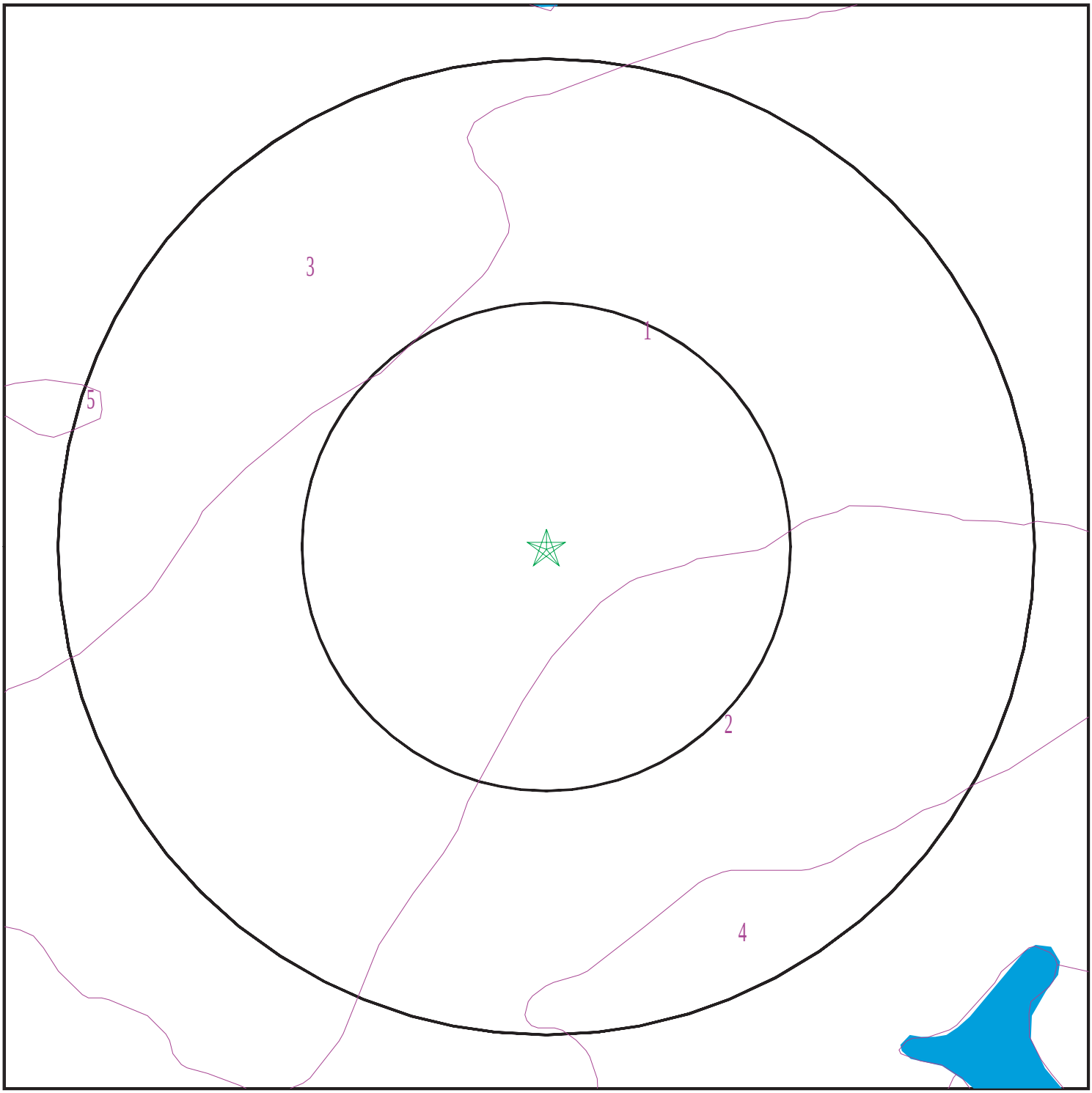
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5646263.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Not Reported	CLIENT:	Roux Associates
ADDRESS:	Not Reported Los Alamitos CA 90720	CONTACT:	Angela Truong
LAT/LONG:	33.804178 / 118.042085	INQUIRY #:	5646263.2s
		DATE:	May 08, 2019 4:37 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: 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:

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	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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	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

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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	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

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
C14	USGS40000138297	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

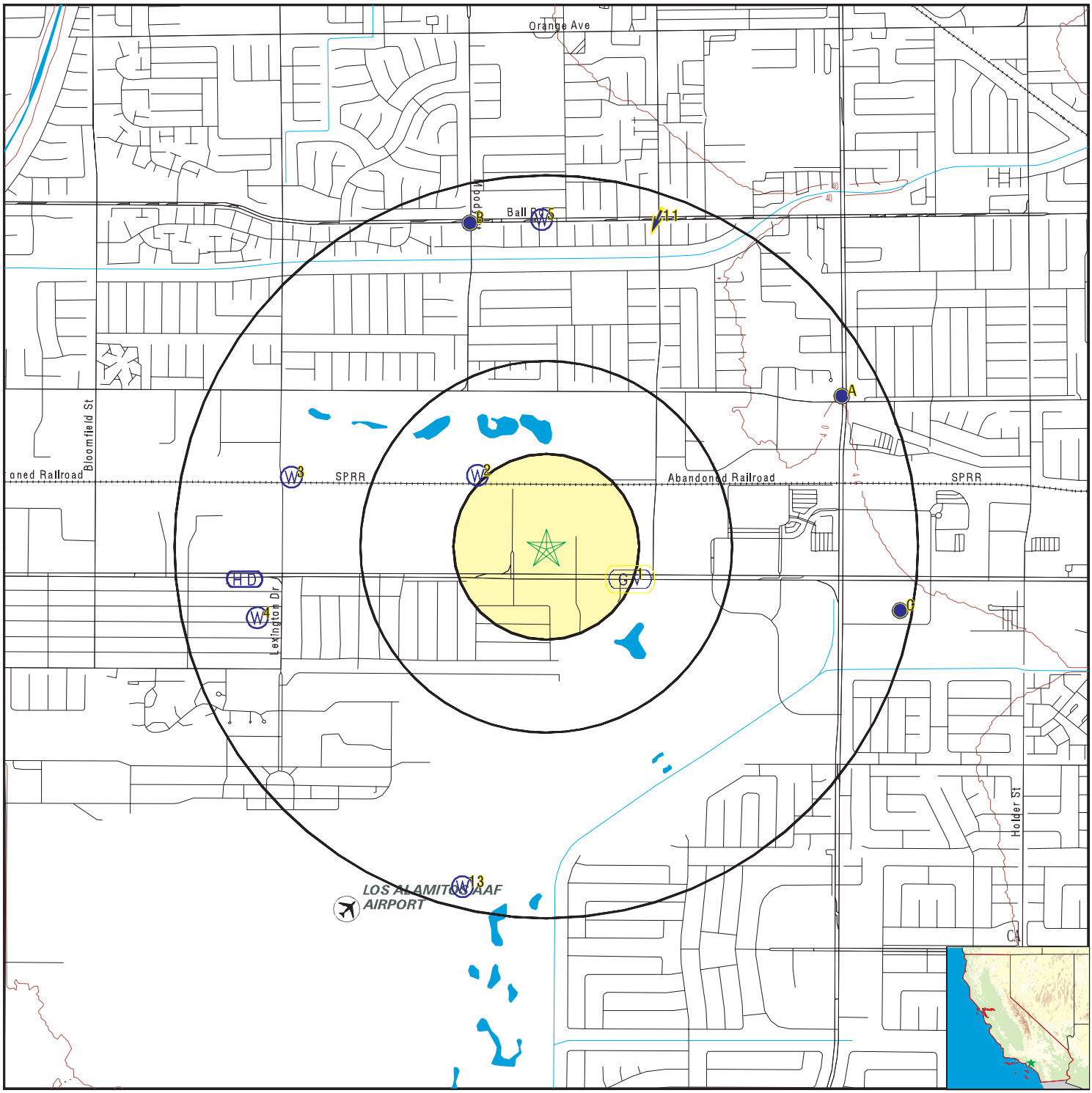
MAP ID	WELL ID	LOCATION FROM TP
2	5247	1/4 - 1/2 Mile NW
3	CADWR8000005622	1/2 - 1 Mile WNW
4	5267	1/2 - 1 Mile WSW
5	5250	1/2 - 1 Mile North
C12	CADWR8000005596	1/2 - 1 Mile East

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
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Not Reported	CLIENT:	Roux Associates
ADDRESS:	Not Reported Los Alamitos CA 90720	CONTACT:	Angela Truong
LAT/LONG:	33.804178 / 118.042085	INQUIRY #:	5646263.2s
		DATE:	May 08, 2019 4:37 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

			Database	EDR ID Number
1 **ESE** **1/8 - 1/4 Mile** **Higher**	Site ID:	083000585T	**AQUIFLOW**	**68297**
	Groundwater Flow:	Varies		
	Shallow Water Depth:	4.75		
	Deep Water Depth:	7.13		
	Average Water Depth:	Not Reported		
	Date:	03/31/1999		

2
NW
1/4 - 1/2 Mile
Higher

CA WELLS **5247**

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
Dlr:	3.		

Sample date:	04-JAN-18	Finding:	2.57
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-JAN-18	Finding:	6.9e-002
Chemical:	RADIUM 226 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-JAN-18	Finding:	0.4
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-JAN-18	Finding:	0.697
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-JAN-18	Finding:	5.65
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dlr:	1.		

Sample date:	04-JAN-18	Finding:	1.52
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	04-JAN-18	Finding:	1.28
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	04-JAN-18	Finding:	0.47
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	04-JAN-18	Finding:	0.322
Chemical:	RADIUM 226 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	0.1
Chemical:	BROMIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	173.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	173.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	211.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	61.2
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	14.1
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	34.8
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	2.6
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	26.4
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	63.8
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	05-JAN-15	Finding:	0.51
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L

Dlr:	0.1		
Sample date:	05-JAN-15	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	05-JAN-15	Finding:	142.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	05-JAN-15	Finding:	334.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	05-JAN-15	Finding:	0.7
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	05-JAN-15	Finding:	541.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	22-OCT-14	Finding:	128.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	01-JUL-14	Finding:	134.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	01-JUL-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	01-JUL-14	Finding:	4.33
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	01-JUL-14	Finding:	1.74
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	01-JUL-14	Finding:	0.449
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	01-JUL-14	Finding:	3.08
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dlr:	1.		
Sample date:	01-JUL-14	Finding:	0.949
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	01-JUL-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	01-JUL-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	01-JUL-14	Finding:	0.253
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dlr:	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	Dlr:	0.
Sample date:	01-JUL-14	Finding:	0.354
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dlr:	0.		
Sample date:	03-APR-14	Finding:	194.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	16-JAN-14	Finding:	146.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	09-OCT-13	Finding:	201.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	02-JUL-13	Finding:	152.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	11-APR-13	Finding:	558.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	11-APR-13	Finding:	3.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	21-JAN-13	Finding:	221.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	04-OCT-12	Finding:	222.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	02-JUL-12	Finding:	155.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	30-APR-12	Finding:	155.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	03-JAN-12	Finding:	175.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	198.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	56.2
Chemical:	CALCIUM	Report units:	MG/L

Dlr:	0.		
Sample date:	03-JAN-12	Finding:	13.9
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	34.4
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	25.9
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	61.1
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	03-JAN-12	Finding:	0.53
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	03-JAN-12	Finding:	4.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	03-JAN-12	Finding:	215.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	03-JAN-12	Finding:	325.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	0.7
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	03-JAN-12	Finding:	175.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	4.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	03-JAN-12	Finding:	542.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

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
Dlr:	0.		

Sample date:	17-MAR-16	Finding:	2.
Chemical:	ODOR THRESHOLD @ 60 C	Report units:	TON
Dlr:	1.		

Sample date:	17-MAR-16	Finding:	469.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

Sample date:	17-MAR-16	Finding:	7.5
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		

Sample date:	17-MAR-16	Finding:	176.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		

Sample date:	17-MAR-16	Finding:	215.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		

Sample date:	17-MAR-16	Finding:	176.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	51.3
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	11.6
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	33.3
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	16.1
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	42.5
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	17-MAR-16	Finding:	0.59
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	17-MAR-16	Finding:	3.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	17-MAR-16	Finding:	139.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	17-MAR-16	Finding:	282.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	0.3
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	07-DEC-15	Finding:	0.2
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dlr:	0.		
Sample date:	02-NOV-15	Finding:	0.2
Chemical:	AMMONIA (NH3-N)	Report units:	MG/L
Dlr:	0.		
Sample date:	12-FEB-15	Finding:	45.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	12-FEB-15	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L

Dlr:	0.		
Sample date:	12-FEB-15	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	12-FEB-15	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	12-FEB-15	Finding:	7.95
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	02-MAY-14	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	02-MAY-14	Finding:	47.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	02-MAY-14	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	02-MAY-14	Finding:	7.93
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	02-MAY-14	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	3.93
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	19-MAR-14	Finding:	0.418
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	19-MAR-14	Finding:	0.138
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	9.4e-002
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	19-MAR-14	Finding:	0.2
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	1.11
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	19-MAR-14	Finding:	1.14
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	3.46
Chemical:	URANIUM (PCI/L)	Report units:	PCI/L
Dlr:	1.		
Sample date:	19-MAR-14	Finding:	0.52
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-MAR-14	Finding:	1.62
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	178.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	462.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	3.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	31.6
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	2.4
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	15.5
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	41.7
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	13-MAR-13	Finding:	165.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	178.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	48.1
Chemical:	CALCIUM	Report units:	MG/L

Dlr:	0.		
Sample date:	13-MAR-13	Finding:	0.2
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	13-MAR-13	Finding:	274.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	13-MAR-13	Finding:	4.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	13-MAR-13	Finding:	0.54
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	09-JAN-13	Finding:	8.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	09-JAN-13	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	09-JAN-13	Finding:	46.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	09-JAN-13	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	09-JAN-13	Finding:	270.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	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		

Sample date:	11-OCT-17	Finding:	27.3
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	13-JUL-17	Finding:	37.9
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	13-JUL-17	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-APR-17	Finding:	390.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	1.09
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	06-APR-17	Finding:	625.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	06-APR-17	Finding:	7.9
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	06-APR-17	Finding:	177.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	216.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	1.09
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	06-APR-17	Finding:	247.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	76.7
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	13.5
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	38.8
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	2.9
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-17	Finding:	35.5
Chemical:	CHLORIDE	Report units:	MG/L

Dlr:	0.		
Sample date:	06-APR-17	Finding:	78.5
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	06-APR-17	Finding:	0.45
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-APR-17	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-APR-17	Finding:	40.7
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	25-JAN-17	Finding:	64.8
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	22-NOV-16	Finding:	59.7
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	21-JUL-16	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	19-JUL-16	Finding:	62.8
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	29-JUN-16	Finding:	71.4
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	29-JUN-16	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	29-JUN-16	Finding:	68.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	27-APR-16	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	26-APR-16	Finding:	0.59
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	26-APR-16	Finding:	70.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	26-APR-16	Finding:	0.61
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	27-JAN-16	Finding:	58.9
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	21-OCT-15	Finding:	62.1
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	07-OCT-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	23-JUL-15	Finding:	60.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	23-JUL-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	01-JUL-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	03-JUN-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-MAY-15	Finding:	0.51
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	15-APR-15	Finding:	4.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	15-APR-15	Finding:	46.7
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	15-APR-15	Finding:	1030.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	03-APR-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	04-FEB-15	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	21-JAN-15	Finding:	46.3
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	07-JAN-15	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	29-OCT-14	Finding:	56.7
Chemical:	MANGANESE	Report units:	UG/L

Dlr:	20.		
Sample date:	01-OCT-14	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	08-AUG-14	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	30-JUL-14	Finding:	49.8
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	05-JUN-14	Finding:	55.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	05-JUN-14	Finding:	56.6
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	05-JUN-14	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	22-APR-14	Finding:	9.9
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	37.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	2.5
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	24.5
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	59.6
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	22-APR-14	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	22-APR-14	Finding:	4.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	22-APR-14	Finding:	64.2
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	22-APR-14	Finding:	318.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		

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

Dlr:	0.		
Sample date:	22-APR-14	Finding:	216.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	177.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	22-APR-14	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	22-APR-14	Finding:	546.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	22-APR-14	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	22-APR-14	Finding:	0.2
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	02-APR-14	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-FEB-14	Finding:	0.45
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	04-DEC-13	Finding:	70.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	04-DEC-13	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-NOV-13	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	11-SEP-13	Finding:	0.55
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	01-AUG-13	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	28-JUN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	24-APR-13	Finding:	3.2
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		

Sample date:	24-APR-13	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	24-APR-13	Finding:	730.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	10-APR-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	06-MAR-13	Finding:	0.46
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	30-JAN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	08-JAN-13	Finding:	0.47
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	05-DEC-12	Finding:	0.58
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	30-MAY-12	Finding:	0.6
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	02-MAY-12	Finding:	0.52
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	02-MAY-12	Finding:	910.
Chemical:	NITRATE + NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	02-MAY-12	Finding:	4.02
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	04-APR-12	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	29-FEB-12	Finding:	0.49
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	08-FEB-12	Finding:	0.48
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	04-JAN-12	Finding:	0.65
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

			Database	EDR ID Number
A6 **ENE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083002920T SW 5 8 Not Reported 07/26/1995	**AQUIFLOW**	**68233**
A7 **ENE** **1/2 - 1 Mile** **Higher**	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	**AQUIFLOW**	**66460**
B8 **NNW** **1/2 - 1 Mile** **Higher**	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	**AQUIFLOW**	**68190**
B9 **NNW** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083001957T Varies Not Reported Not Reported 10 09/04/1992	**AQUIFLOW**	**68214**
B10 **NNW** **1/2 - 1 Mile** **Higher**	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	**AQUIFLOW**	**68189**
11 **NNE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083001501T SSW Not Reported Not Reported 8 02/10/1992	**AQUIFLOW**	**38612**

C12
East
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000005596**

State Well #:	04S11W27D001S	Station ID:	28324
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		

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

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

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

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

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
3G **NNW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083001957T Varies Not Reported Not Reported 10 09/04/1992	**AQUIFLOW**	**68214**
4G **NNW** **1/2 - 1 Mile** **Lower**	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	**AQUIFLOW**	**68189**
5G **ENE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083002920T SW 5 8 Not Reported 07/26/1995	**AQUIFLOW**	**68233**
6G **ENE** **1/2 - 1 Mile** **Lower**	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	**AQUIFLOW**	**66460**
7G **ESE** **1/8 - 1/4 Mile** **Lower**	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	**AQUIFLOW**	**68297**

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^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

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

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APPENDIX E

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 10th, 2006

DCI Project No.: 23528

DCI Environmental Services PO Box 7087 Burbank, CA 91510
TEL: (818) 767-3894 FAX: (818) 767-2757 WEB: http://www.dciservices.com

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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 28th, 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 byphenols (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 statues 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 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

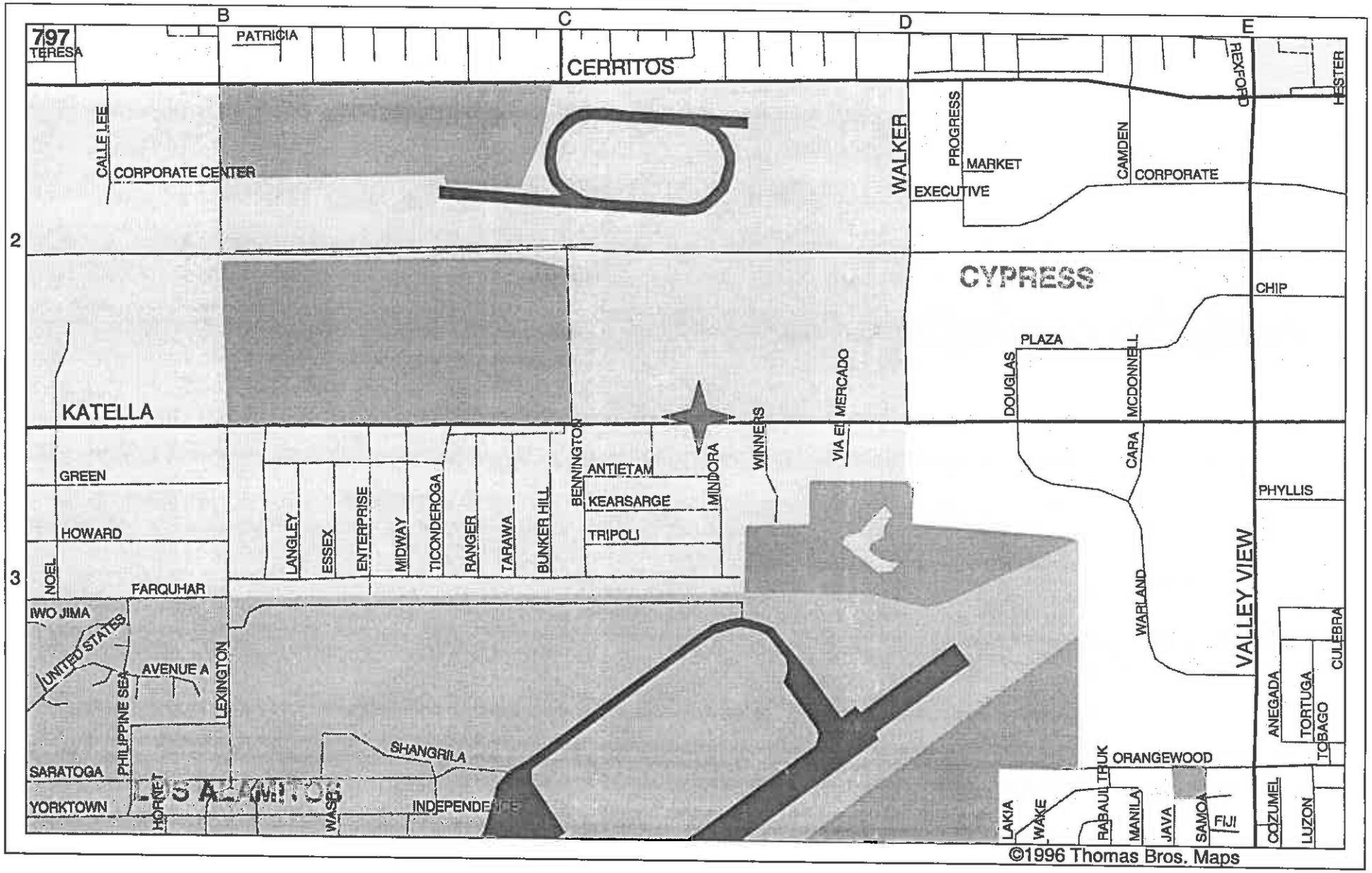
Dated: August 10th, 2006

14. Qualification(s) of Environmental Professional(s)

California Registered Environmental Assessor Number 7603

Appendix A

Site Vicinity Map


797
B
C
D
E
TERESA
PATRICIA
CERRITOS
REXFORD
HESTER
CALLE LEE
CORPORATE CENTER
WALKER
PROGRESS
MARKET
EXECUTIVE
CAMDEN
CORPORATE
2
CYPRESS
CHIP
PLAZA
DOUGLAS
MCDONNELL
KATELLA
VIA EL MERCADO
WINNERS
BENNINGTON
ANTIETAM
KEARSARGE
TRIPOLI
MINDORA
CARA
GREEN
HOWARD
NOEL
LANGLEY
ESSEX
ENTERPRISE
MIDWAY
TICONDEROGA
RANGER
TARAWA
BUNKER HILL
PHYLLIS
3
FARQUHAR
IWO JIMA
UNITED STATES
AVENUE A
LEXINGTON
WARLAND
VALLEY VIEW
ANEGADA
TORTUGA
TOBAGO
CULEBRA
PHILIPPINE SEA
SHANGRILA
SARATOGA
YORKTOWN
HORNET
WASP
INDEPENDENCE
ORANGEWOOD
TRUK
LAKIA
WAKE
RABAUL
MANILA
JAVA
SAMOA
FIJI
COZUMEL
LUZON
©1996 Thomas Bros. Maps

Appendix B

Site Permits

Appendix C

Site Photographs









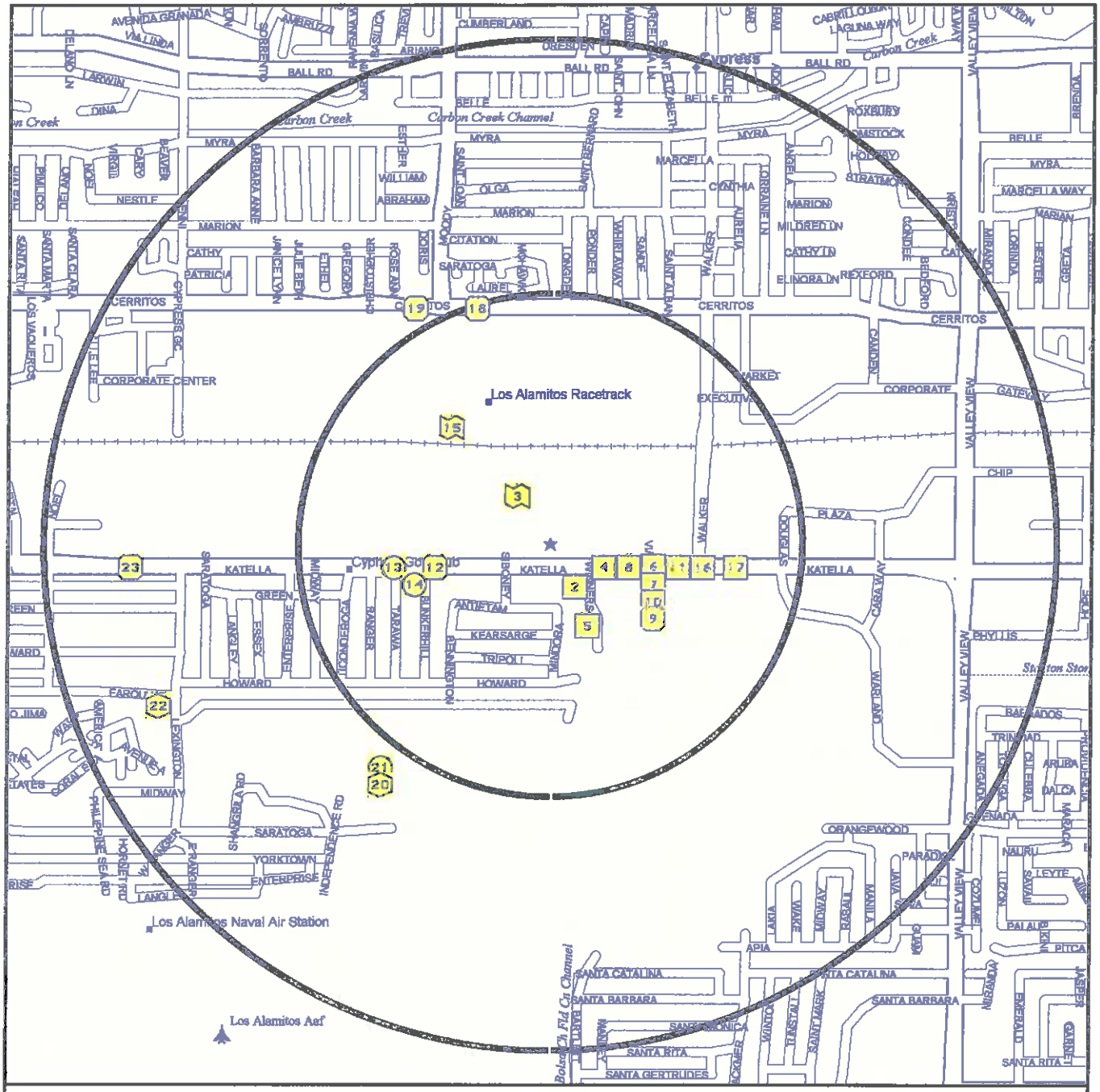




Appendix D

Historical Research Documentation

- Listed Environmental Sites Map
- Topographic Maps
- Fire Insurance Maps
- Aerial Photos
- Other Maps & Documents



ENVIRONMENTAL CONCERNS - HIGH PRIORITY

ENVIRONMENTAL CONCERNS

ENVIRONMENTAL CONCERNS - WITH A 'NO FURTHER ACTION' STATUS'

OPERATING PERMITS ONLY

WATER WELLS

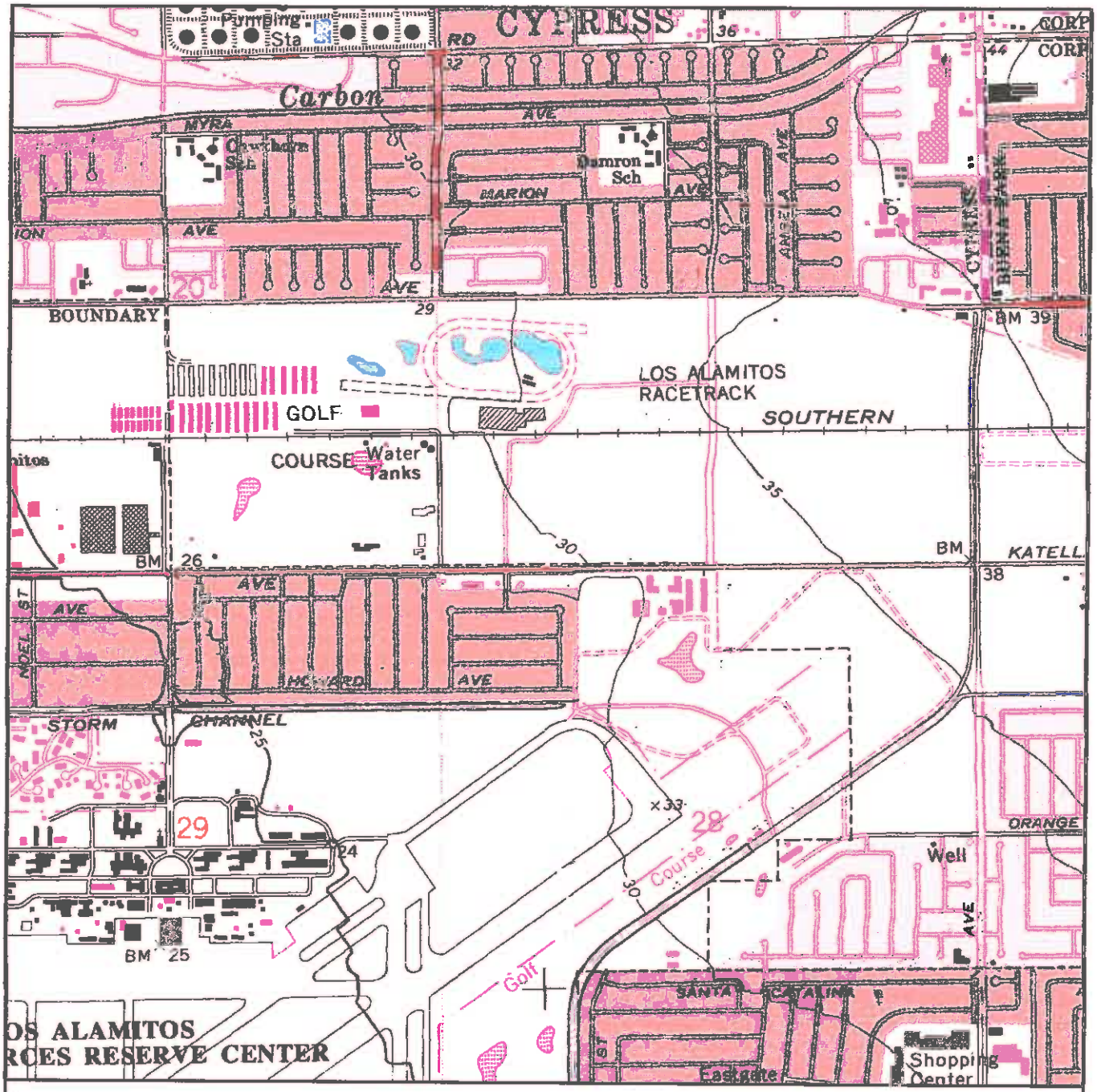
3.2 inches to 1 mile (the circles do not include any buffer zone)

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	4961	KATELLA AVE
13.	CYPRESS GOLF CLUB	4921	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	4991	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



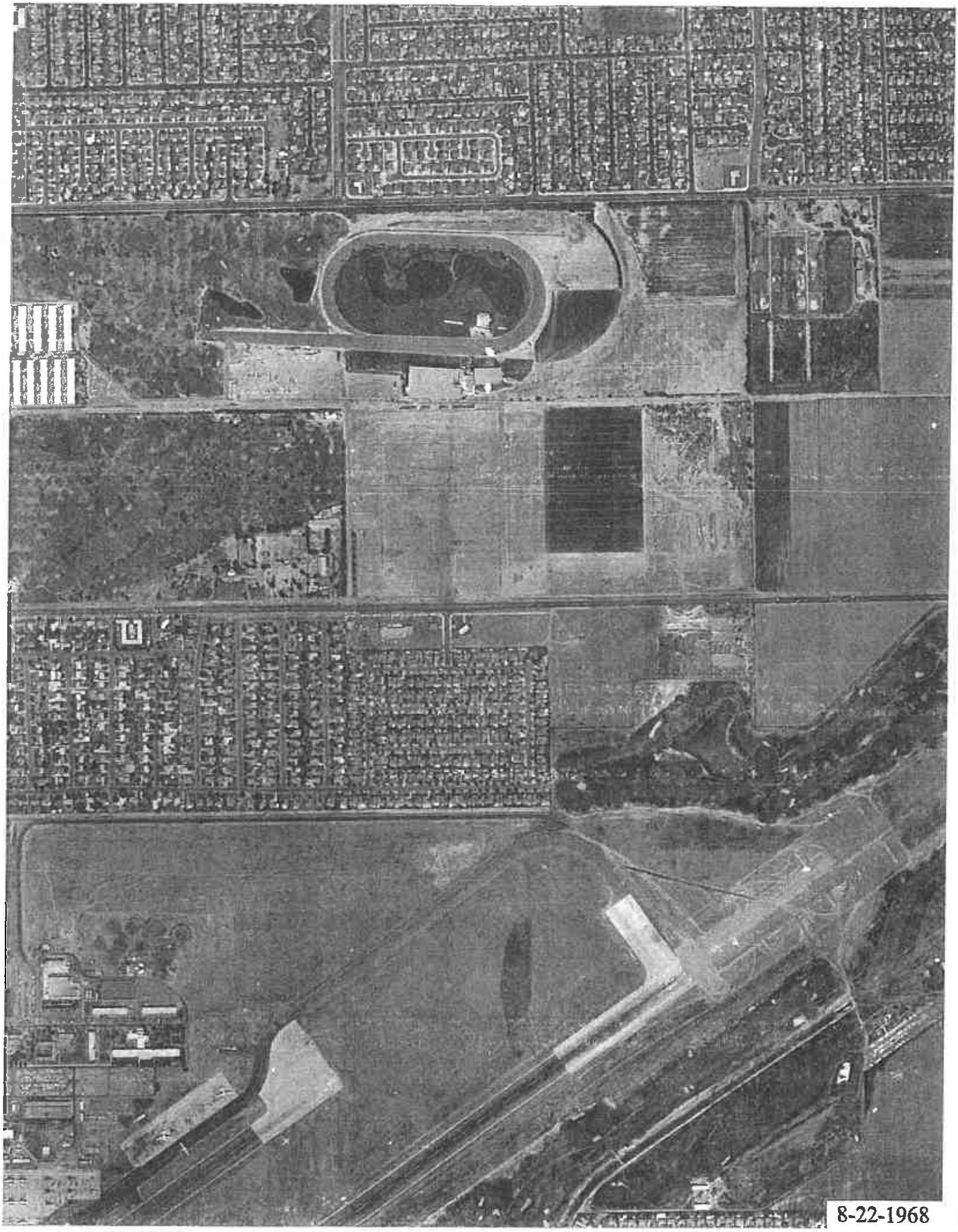
9-6-1990



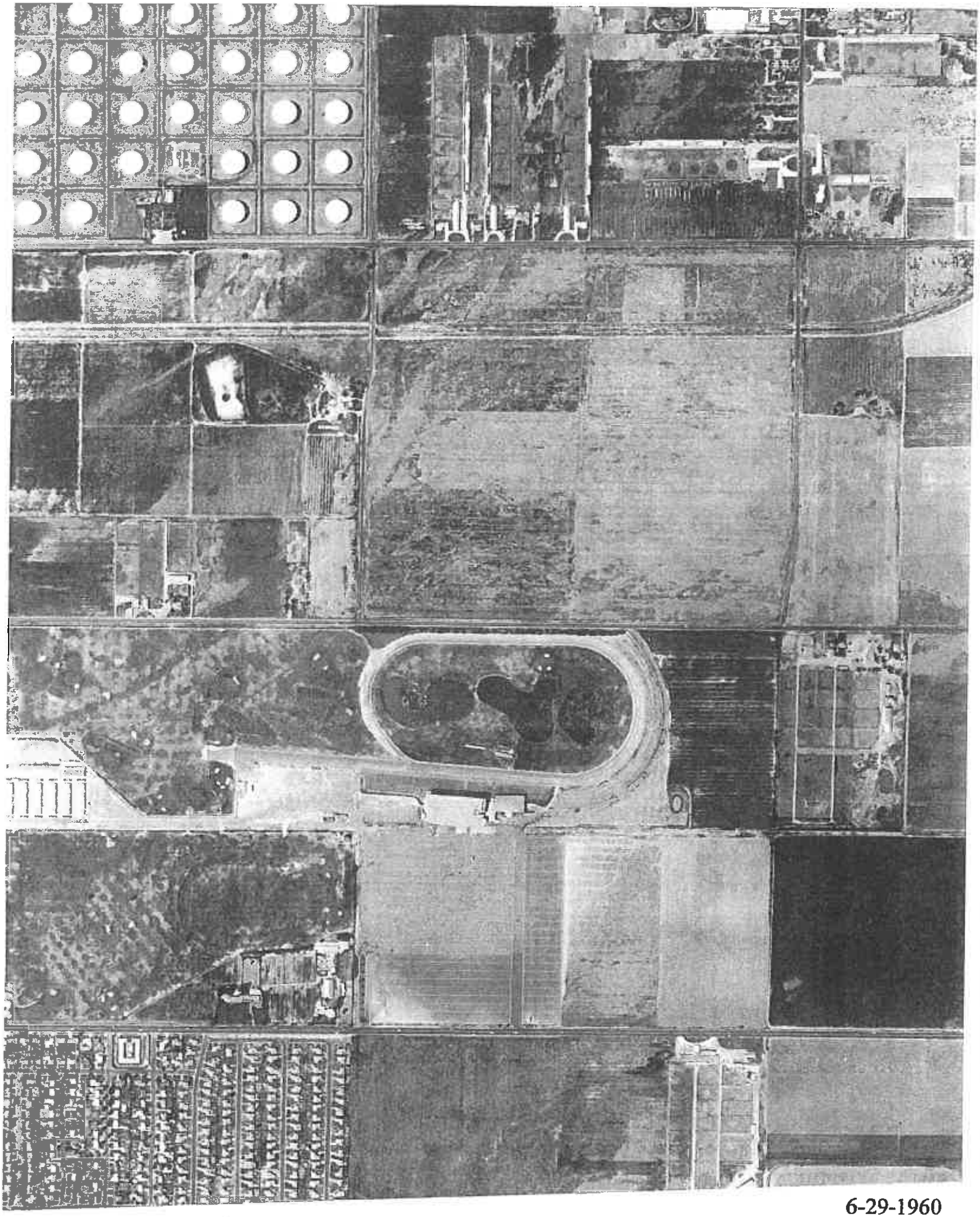
6-18-1983



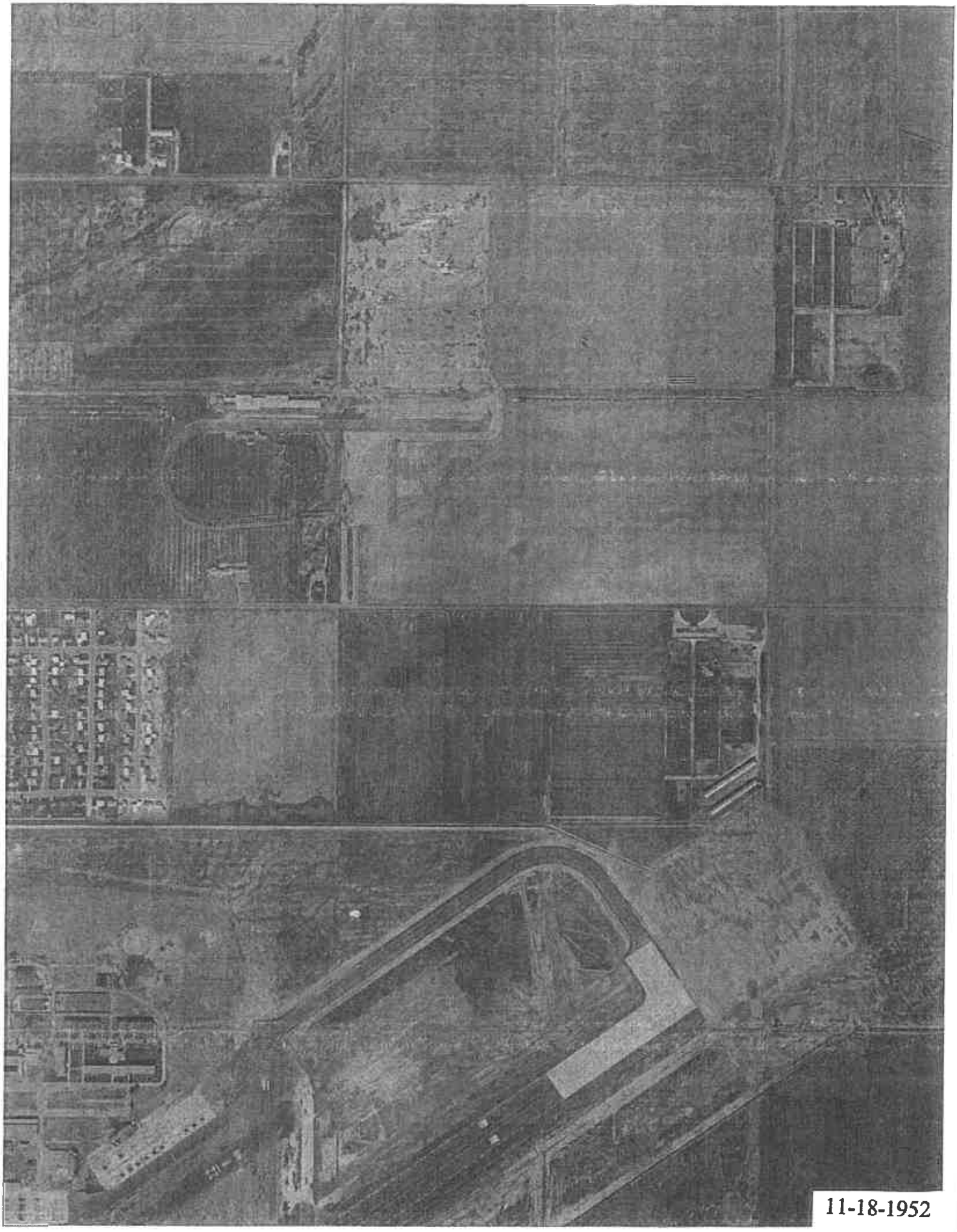
5-20-1977



8-22-1968



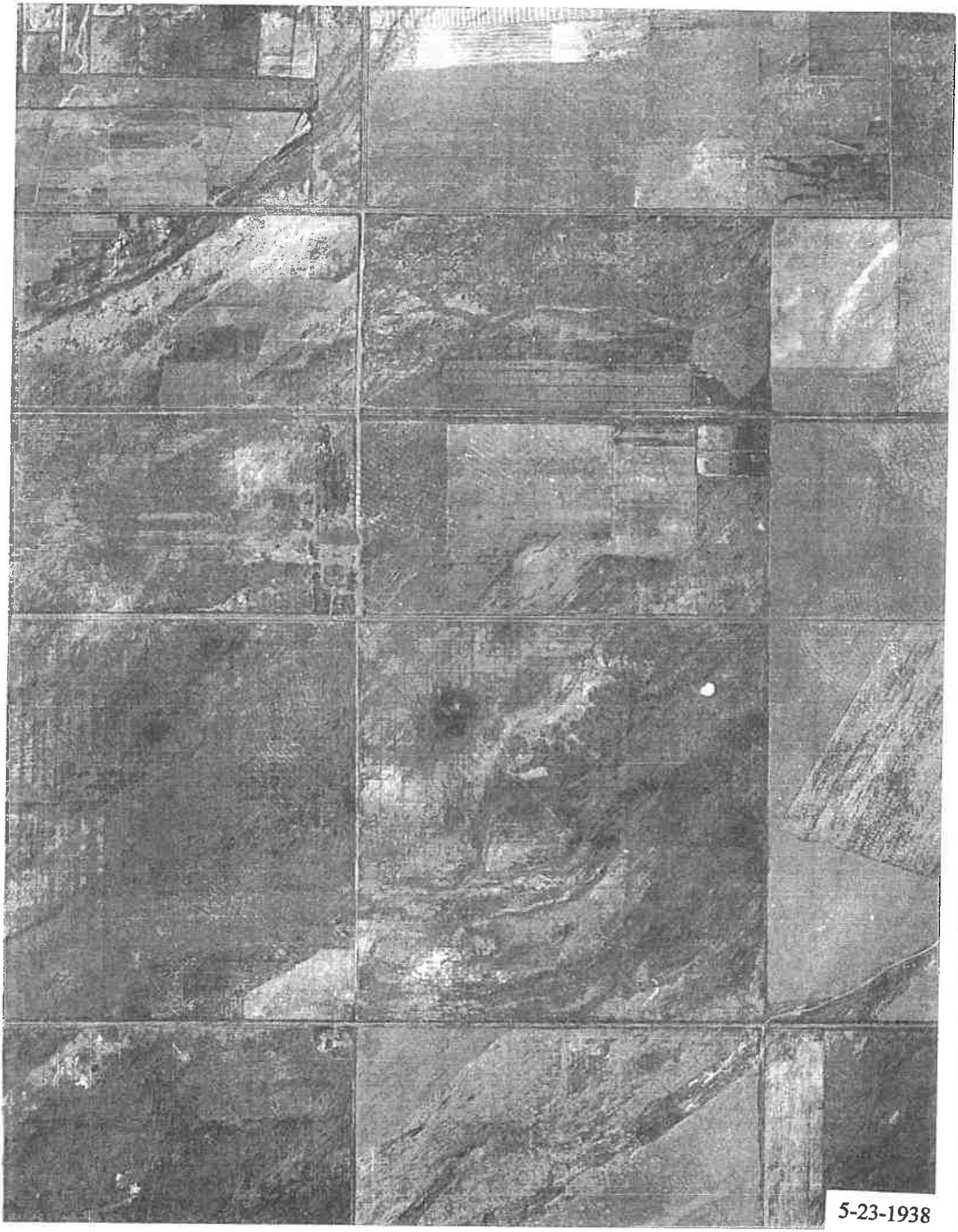
6-29-1960



11-18-1952



6-17-1947



5-23-1938

07-26-2006

DCIS7833



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:		

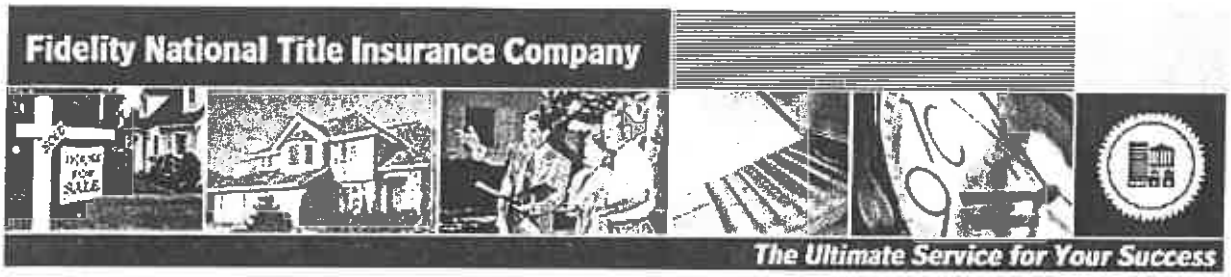
Sale & Loan Information

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

Assessed Value : $880,911	Percent Improvement : 13.95%	Homeowner Exemption :
Land Value : $757,994	Tax Amount : $18,333.60	Tax Rate Area : 19-005
Improvement Value : $122,917	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: 241-091-25

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, 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 : $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 Tel: - -
Bedrooms: Bathrooms:
Square Feet: Lot Size:
Year Built: Garage:

NINETY FIVE TEN
10700 WALKER ST
CYPRESS CA 90630
APN: 241-114-10 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 12360 SF Lot Size: 34,920 SF
Year Built: 1978 Garage:

NING, STANLEY; NING, NANCY
10721 WALKER ST
CYPRESS CA 90630
APN: 241-081-17 Tel: - -
Bedrooms: Bathrooms:
Square Feet: Lot Size:
Year Built: Garage:

KANG, IAN
10602 WALKER ST
CYPRESS CA 90630
APN: 241-112-07 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 5915 SF Lot Size: 16,800 SF
Year Built: 1979 Garage:

EPIX LTD,
10731 WALKER ST
CYPRESS CA 90630
APN: 241-081-18 Tel: - -
Bedrooms: Bathrooms:
Square Feet: Lot Size:
Year Built: Garage:

CYPRESS CORPORATE PARK LLC
10741 WALKER ST
CYPRESS CA 90630
APN: 241-081-19 Tel: - -
Bedrooms: Bathrooms:
Square Feet: Lot Size:
Year Built: Garage:

LEE, HUIDAE; LEE, BOKSOON KIM
10582 WALKER ST
CYPRESS CA 90630
APN: 241-112-06 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 5679 SF Lot Size: 16,800 SF
Year Built: 1979 Garage:

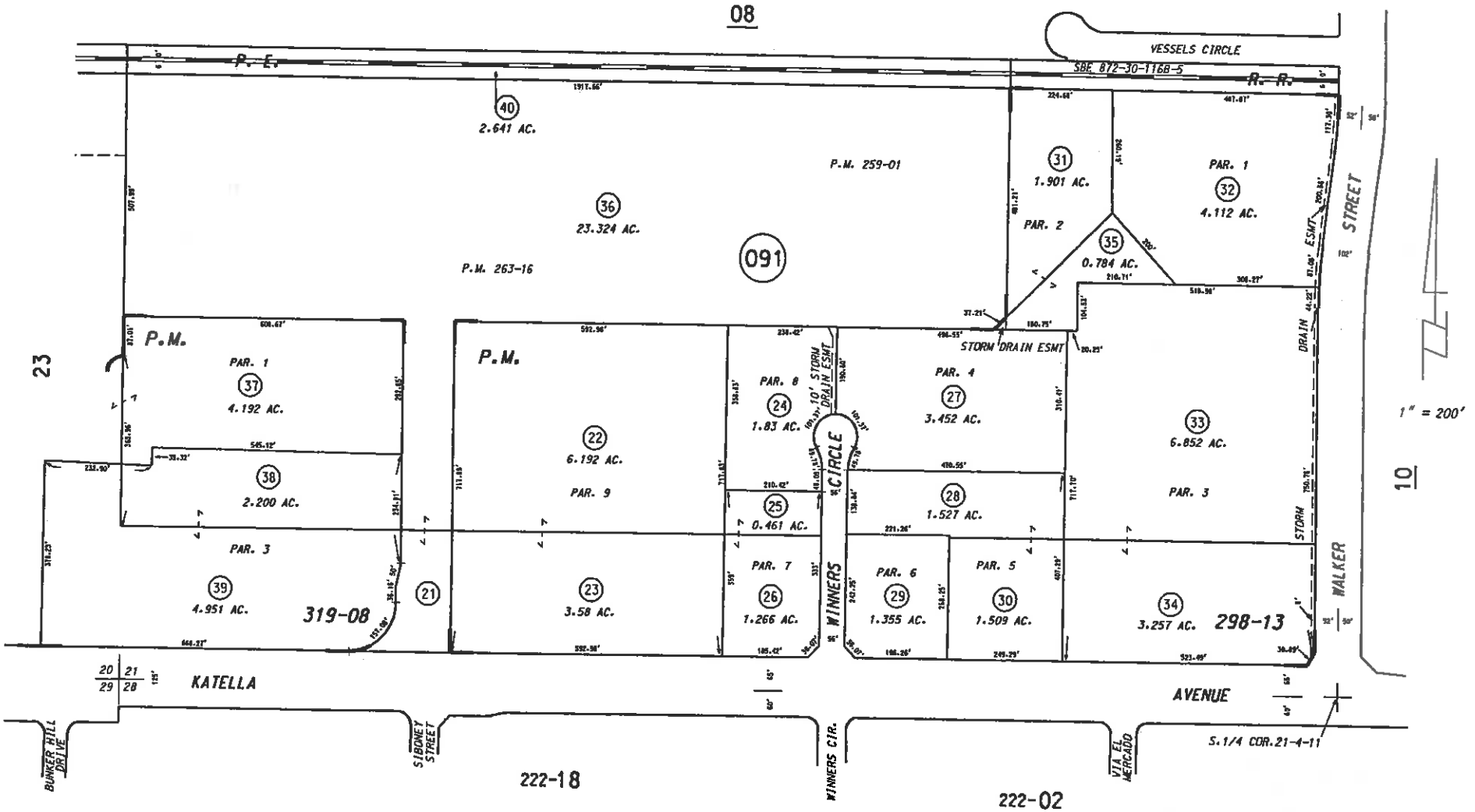
WELLMAN, MICHAEL S; PUTNAM, MACRAE WELLMAN
10742 WALKER ST
CYPRESS CA 90630
APN: 241-114-09 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 9790 SF Lot Size: 25,228 SF
Year Built: 1978 Garage:

WOOLSTON, NEAL A
10562 WALKER ST
CYPRESS CA 90630
APN: 241-112-05 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 5196 SF Lot Size: 16,800 SF
Year Built: 1979 Garage:

BAKER, ANNA F (TR) (SURVIVORS)
10542 WALKER ST
CYPRESS CA 90630
APN: 241-112-04 Tel: - -
Bedrooms: Bathrooms:
Square Feet: 5602 SF Lot Size: 16,800 SF
Year Built: 1979 Garage:

PUR. S 1/2, SW 1/4, SEC. 21, T 4 S, R 11 W

241-09



MARCH 1969 PARCEL MAP P.M. 259-01, 298-13, 319-08

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

ADDRESS		CITY	LOCATION	SOU-RCE	STA-TUS	PAGE	MAP LOC	DIR
KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/4 MILE OF THE SUBJECT SITE								
	LOS ALAMITOS RACE COURSE	04S/11W-20R02 S	WELL 01 dhs3	WIP		13	3	NW
11222	VIA EL MERCADO	LOS ALAMITOS	M.M.I.	CS-nfa	NFA	7	9	SE
4961	KATELLA AVE	LOS ALAMITOS	LOS ALAMITOS RACE TRACK	LUST	9	10	12	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	PCS		19		
			LOS ALAMITOS RACE COURSE	HWIS		21		
4921	KATELLA AVE	CYPRESS	CYPRESS GOLF CLUB	LUST	3B	10	13	W
			CYPRESS GOLF CLUB	HWIS		21		
5100	KATELLA AVE	LOS ALAMITOS	UNOCAL SERVICE STATION #5511	LUST	7	10	14	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&89	24		
			INNABI UNION 76 #1	UST	87&93	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	15	NW
KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/4 - 1/2 MILE OF THE SUBJECT SITE								
5001	CERRITOS AVE	CYPRESS	HRAKO SERVICE CENTER	LUST	9	9	18	N
KNOWN ENVIRONMENTAL CONCERNS, WITHIN 1/2 - 3/4 MILE OF THE SUBJECT SITE								
4991	CERRITOS AVE	CYPRESS	ORANGE CO FIRE STATION # 17	LUST	9	8	19	NW
	AFRC LOS ALAMITOS	LOS ALAMITOS	LOS ALAMITOS AFRC	TP		18	20	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	21	SW
	AFRC LOS ALAMITOS BLD#201	LOS ALAMITOS	AFRC FUEL FARM #89	LUST	3B	8	21	SW
	AFRC LOS ALAMITOS BLD#244	LOS ALAMITOS	AFRC BUILDING 244	LUST	1	8	21	SW
KNOWN ENVIRONMENTAL CONCERNS, WITHIN 3/4 - 1 MILE OF THE SUBJECT SITE								
	LEXINGTON & FARQUHART	LOS ALAMITOS	ARMED FORCES RESERVE CTR LF	SWIS		13	22	W
4411	KATELLA AVE	LOS ALAMITAS	FEDERAL-MOGUL CORP ARROWHEAD P	NFRAP	NFA	2	23	W

ADDRESS		CITY	LOCATION	SOU-RCE	STA-TUS	PAGE	MAP LOC	DIR
OPERATING PERMITS ONLY, WITHIN 1/4 MILE OF THE SUBJECT SITE								
11061	WINNERS CIR	LOS ALAMITOS	K&A IMPORTS	HWIS		23	2	SE
			K&A IMPORTS	RCRA	S	18		
			K & A IMPORT SERVICES	HWIS		23		
			K & A IMPORT SERVICES	RCRA	S	18		
5300	KATELLA AVE	LOS ALAMITOS	TILOS EUROPEAN AUTOHAUS	RCRA	N	17	4	E
			TILOS EUROPEAN AUTO	HWIS		22		
			TILOS EUROPEAN AUTOHAUS	HWIS		22		
11132	WINNERS CIR,SUITE 100	LOS ALAMITOS	ILLUMINATION TECHNOLOGY INC	HWIS		24	5	SE
11021	VIA EL MERCADO	LOS ALAMITOS	AERO TRACE	HWIS		23	6	E
			AERO TRACE	RCRA		17		
11041	VIA EL MERCADO	LOS ALAMITOS	WESTERN SHIRT LINE	HWIS		23	7	E
5401	KATELLA AVE	CYPRESS	COSTCO WHOLESALE NO 748	RCRA	S	17	8	E
11052	VIA EL MERCADO	LOS ALAMITOS	ABOVEBOARD SIGN COMPANY	HWIS		23	10	E
5420	KATELLA AVE	LOS ALAMITOS	ACE SAW & SUPPLY	HWIS		22	11	E
5450	KATELLA AVE	LOS ALAMITOS	JIM COOK RACING INC	HWIS		22	16	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	17	E
SITES WITH UNKNOWN OR NON-SPECIFIC LOCATION								
	CERRITOS 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)
FD	FEDERAL ENFORCEMENT DOCKETS

I	Incinerator	D	Land Disposal	T	Storage/Treatment

CALIFORNIA STATE SOURCES

AnnWrk	ANNUAL WORK PLAN (01/18/06)
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)
SWIS	SOLID WASTE INFORMATION SYSTEM (1/06)
WIP	WELL INVESTIGATION PROGRAM
WQ	DRINKING WATER PROGRAM (2002)
SC	SCHOOL PROPERTY EVALUATION PROGRAM (1/18/06)

BKLG	Backlog	DLST	Delisted from the AWP	AWP	Active AWP site
REFRW	Referred to the RWQB	COM	Certified, maint mode	REFRC	Referred to RCRA
CERT	Certified after remediation				

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

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)
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)
FFIS	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

L	Large Generator	T	Transporter	S	Small Generator

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 statues 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 priortiy
	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 Boar
	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 0 0 0 0
FACILITY DRIVE-BY FIBERGLASS FIRM - HAS A DISCERNIBLE ODOR OF KETOFACILITY IDENTIFIED DRIVEBY (06/17/82)
FINAL STRATEGY SITE REFERRED) TO A.Q.M.D. ENFORCEMENT (08/01/82SITE SCREENING DONE PA RECOM DUE TO LACK OF INFO ABOUT ENFORCEMENT H)
ISTORY (05/18/87)
NE SOLVENT. 18 55-GAL. DRUMS OF POLYSTER 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

ADE

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
NICIPAL,TIRES

Acreage: 19 (total)
Closure: 12/31/88 ESTIMATED
Owner: CALIFORNIA ARMY NATIONAL GUARD
4216CONSTITUTION 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 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							

Site: UNOCAL SVC STA #5511
Address: 5100 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 14 - about .27 mile W of the subject
Status: EPA ID#: CAD981643919

		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: CIRCLE K STORES INC STATION #5
Address: 5100 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 14 - about .27 mile W of the subject
Status: EPA ID#: CAL000169176

Site: TILOS EUROPEAN AUTO
Address: 5300 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 4 - about .13 mile E of the subject
Status: EPA ID#: CAL000145887

Site: TILOS EUROPEAN AUTOHAUS
Address: 5300 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 4 - about .13 mile E of the subject
Status: EPA ID#: CAR000078394

Site: ACE SAW & SUPPLY
Address: 5420 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 11 - about .24 mile E of the subject
Status: EPA ID#: CAL000171143

Site: JIM COOK RACING INC
Address: 5450 KATELLA AVE
City: LOS ALAMITOS
Map Loc: 16 - about .3 mile E of the subject
Status: EPA ID#: CAL000008368

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 aqeous 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

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.

8-16-06
Date

Brett A. Herion
Signature

APPENDIX F

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

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:

Year	Scale	Details	Source
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

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INQUIRY #: 5646263.8
YEAR: 2016
= 500'
N
EDR



INQUIRY #: 5646263.8

YEAR: 2012

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 2005

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1994

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1990

= 500'

N

EDR


INQUIRY #: 5646263.8
YEAR: 1989
= 500'
N
EDR



INQUIRY #: 5646263.8

YEAR: 1981

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1977

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1970

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1963

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1952

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1947

= 500'

N

EDR



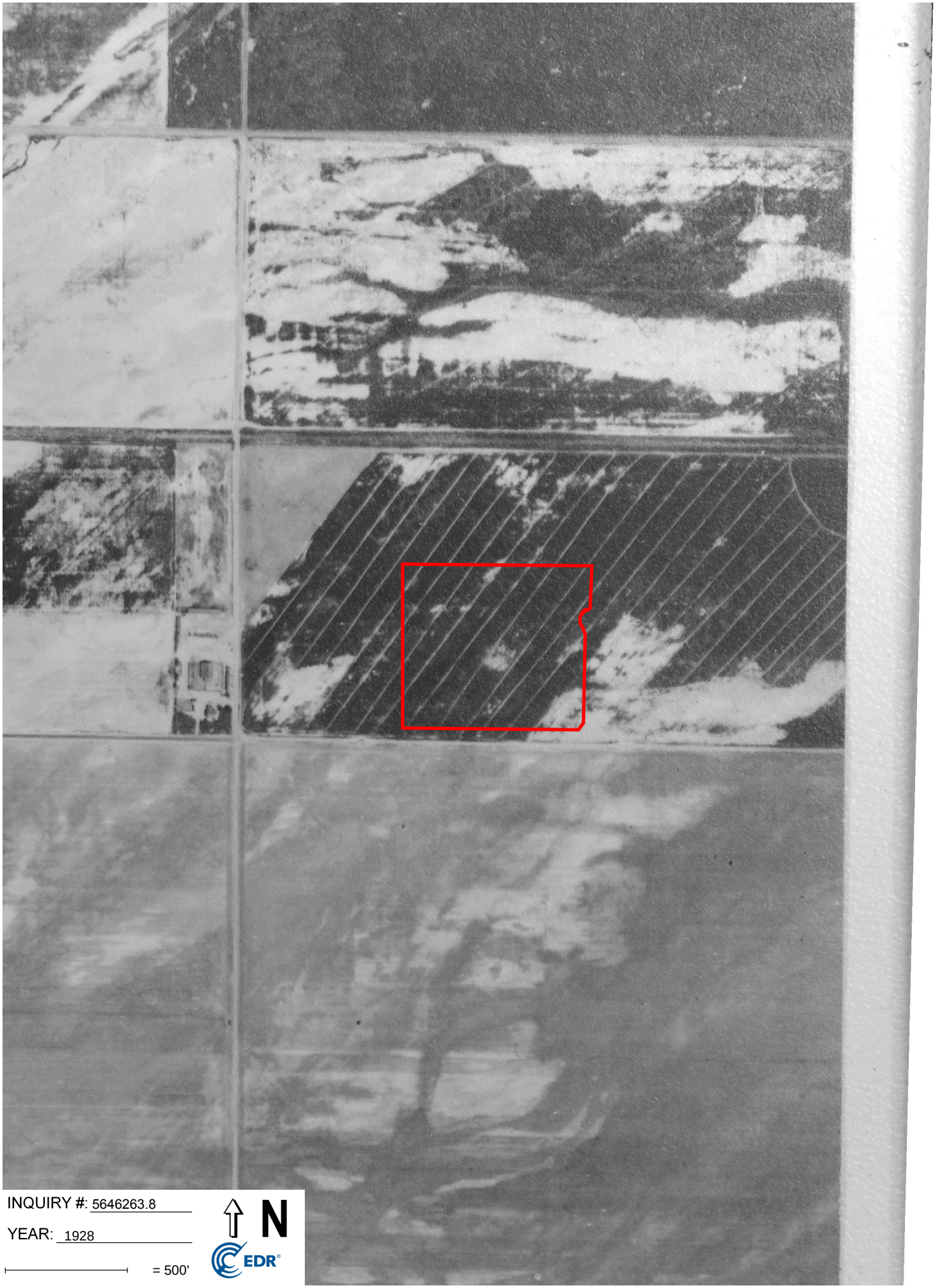
INQUIRY #: 5646263.8

YEAR: 1938

= 500'

N

EDR



INQUIRY #: 5646263.8

YEAR: 1928

= 500'

N

EDR

APPENDIX G

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

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Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

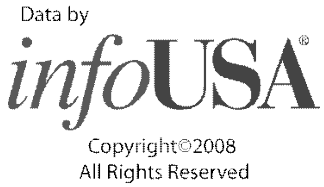
DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory 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.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1985	☑	☐	Haines Criss-Cross Directory
1980	☑	☐	Haines Criss-Cross Directory
1975	☑	☐	Haines Criss-Cross Directory
1972	☑	☐	Haines Criss-Cross Directory
1971	☑	☐	Haines Criss-Cross Directory
1966	☑	☐	General Telephone Co

FINDINGS

TARGET PROPERTY STREET

Not Reported
Los Alamitos, CA 90720

Year	*CD Image*	*Source*

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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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
	CALIFRNIA 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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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
	CALIFRNIA 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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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
	HOBSONS 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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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
	HOBSONS 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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

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

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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 INVNTRY 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
	LOSALMTS 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

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

KATELLA AVE 1985



Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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	826-6550	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

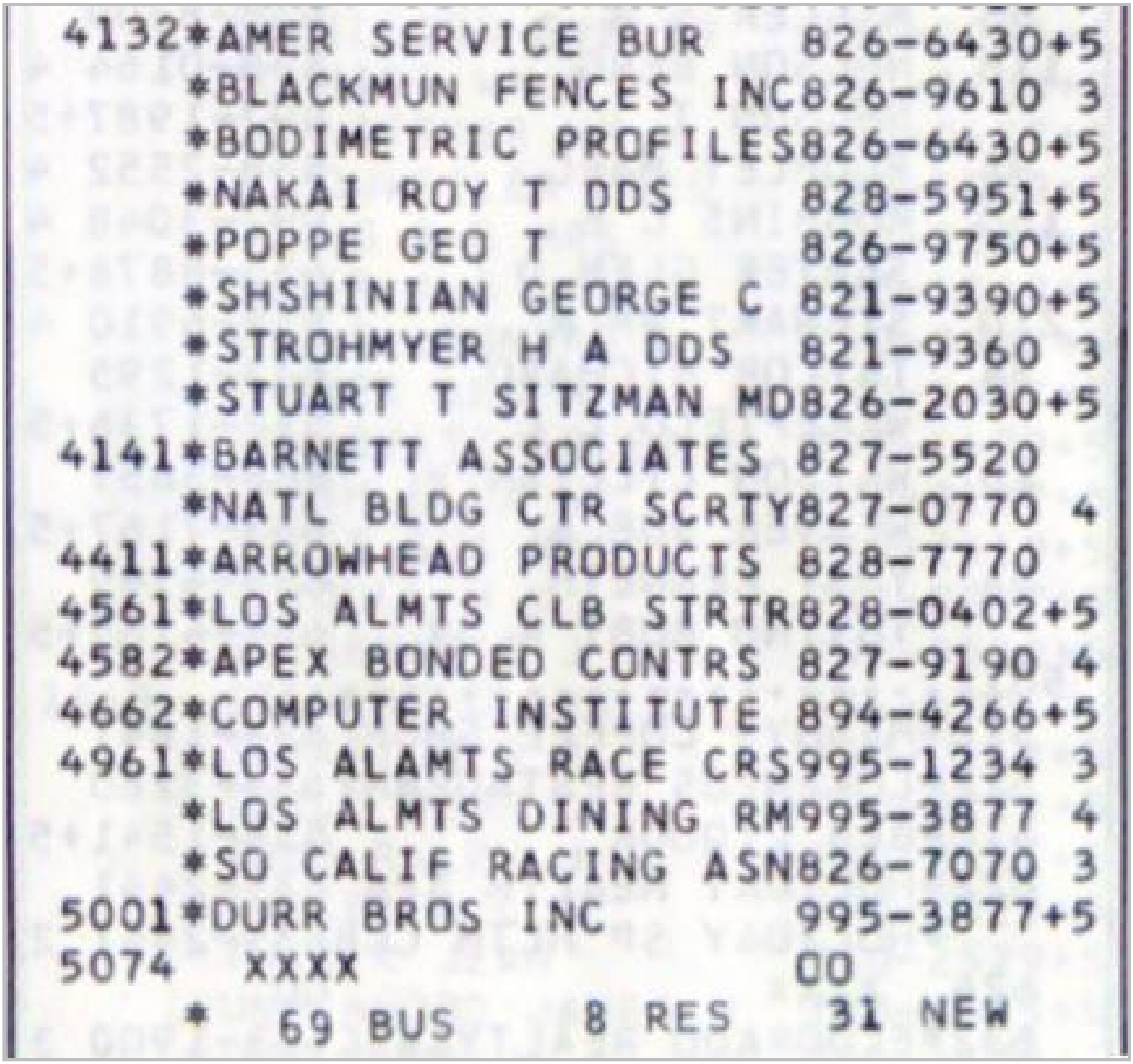
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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                OO
    *  69 BUS     8 RES    31 NEW
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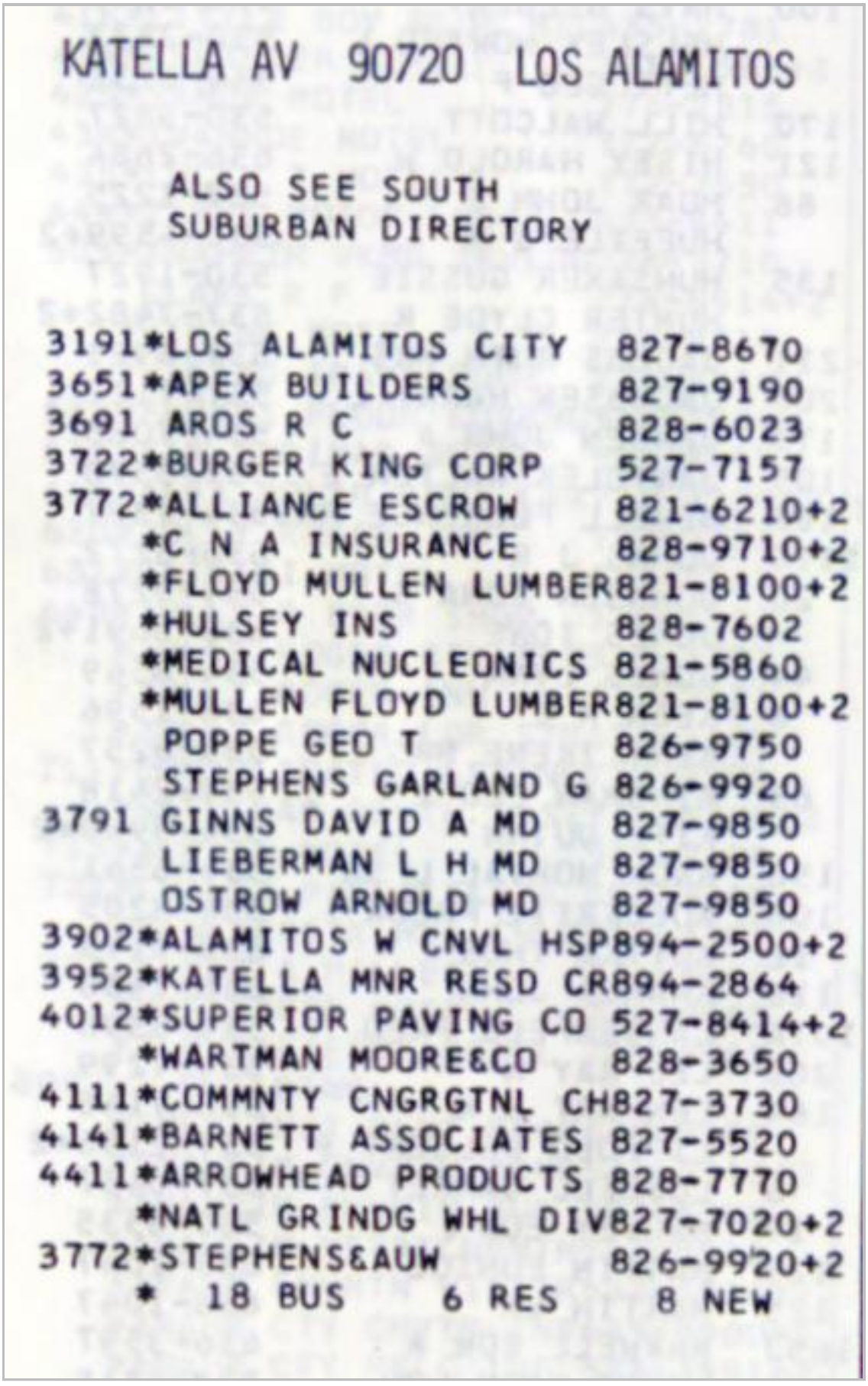
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

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	OO
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

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

KATELLA AVE 1972



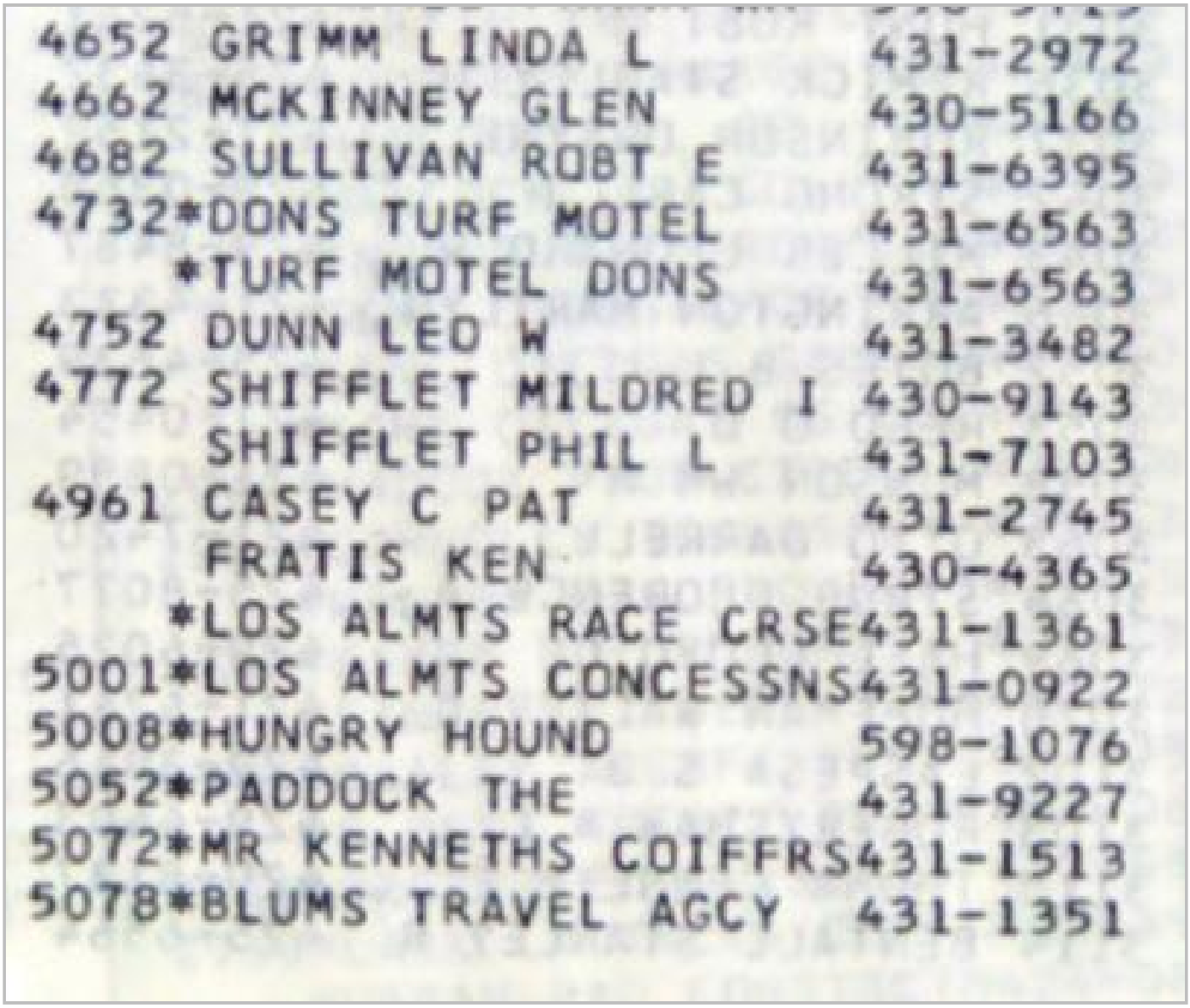
KATELLA AV 90720 LOS ALAMITOS

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

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

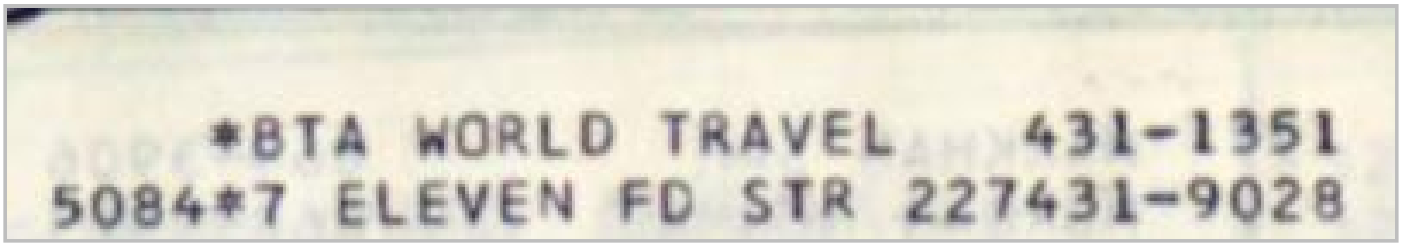
KATELLA AVE 1971



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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 LEO 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 CONCESSNS           431-0922
5008*HUNGRY HOUND                  598-1076
5052*PADDOCK THE                   431-9227
5072*MR KENNETHS COIFFRS           431-1513
5078*BLUMS TRAVEL AGCY             431-1351
```

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

KATELLA AVE 1971



Target Street	Cross Street	Source
✓	-	General Telephone Co

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

APPENDIX H

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

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.

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™

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APPENDIX I

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 or (202) 566-1667.

This letter concludes our response to your request. You may appeal this response by email at 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 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; 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 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

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

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

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) 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

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,

Alisha Farnell
Acting City Clerk

Stacy Berry, Mayor
Rob Johnson, Mayor Pro Tem **Jon E. Peat**, Council Member
Paulo M. Morales, Council Member **Marlellen Yarc**, Council Member

APPENDIX J

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).

APPENDIX K

Personnel Qualifications

ROUX

PROFESSIONAL PROFILE

Mauricio H. Escobar, P.G.

Principal Geologist

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

5150 East Pacific Coast Highway, Suite 450 | Long Beach, CA 90804
Main: 310-879-4900 | Direct: 310-879-4920
E-mail: mescobar@rouxinc.com | Website: www.rouxinc.com

Mauricio H. Escobar, P.G.
Principal Geologist

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

5150 East Pacific Coast Highway, Suite 450 | Long Beach, CA 90804
Main: 310-879-4900 | Direct: 310-879-4920
E-mail: mescobar@rouxinc.com | Website: www.rouxinc.com

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 (µg/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 divesture 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 µg/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.**

5150 East Pacific Coast Highway, Suite 450 | Long Beach, CA 90804
Main: 310-879-4900 | Direct: 310-879-4920
E-mail: mescobar@rouxinc.com | Website: www.rouxinc.com

Mauricio H. Escobar, P.G.
Principal Geologist

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.

5150 East Pacific Coast Highway, Suite 450 | Long Beach, CA 90804
Main: 310-879-4900 | Direct: 310-879-4920
E-mail: mescobar@rouxinc.com | Website: www.rouxinc.com

ROUX

PROFESSIONAL PROFILE

Mark A. Edwards

Staff Assistant Geologist

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 $^{87}Sr/^{86}Sr$ 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). $^{87}Sr/^{86}Sr$ 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.

5150 East Pacific Coast Highway, Suite 450 | Long Beach, CA 90804
Main: 310-879-4900 | Direct: 562-446-8697
E-mail: medwards@rouxinc.com | Website: www.rouxinc.com

APPENDIX G

WATER QUALITY MANAGEMENT PLAN AND HYDROLOGY AND HYDRAULICS STUDY

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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

July 2019

Revised August 21, 2019

Kimley»Horn

Project Owner's Certification			
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.

Owner:			
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	

Preparer (Engineer):			
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			

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Appendices

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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 Infomation			
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.		

Watershed-Based Plan Conditions	
Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.	The Project falls within the San Gabriel – Coyote Creek Watershed. The 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 (ft2): 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	**Existing 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. 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.			

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. Th 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

	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.
Narrative Project Description: (Use as much space as necessary.)	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.

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 ☒	N ☐	Due to landscape.
Nutrients	E ☒	N ☐	Due to landscape.
Heavy Metals	E ☒	N ☐	Due to parking lots.

Pathogens (Bacteria/Virus)	E ☒	N ☐	Due to parking lots and food uses.
Pesticides	E ☒	N ☐	Due to landscape.
Oil and Grease	E ☒	N ☐	Due to parking lots.
Toxic Organic Compounds	E ☒	N ☐	Due to parking lots and commercial development type.
Trash and Debris	E ☒	N ☐	

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 85th percentile, 24-hour strom, 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, 85th 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	There are existing public water mains in Katella Avenue, Winner's Circle and private Siboney Street along the project frontages. 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. 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.

III.3 Watershed Description

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 ☐	NO ☒
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	N/A		

Project Performance Criteria	
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 = (0.90x0.75+.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

DMA Number	Area (AC)	DCV (CF)	Q (CFS)	Treatment Device	Device Capacity (CFS)
1	13.33	17,000		Modular Wetland Model No. MWS-L-8-16 (discharged over a 48-hour period)	0.052
1	13.33		1.43	Hydrodynamic	

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	☐
Impervious area dispersion (e.g. roof top disconnection)	☐
Street trees (canopy interception)	☒
Residential rain barrels (not actively managed)	☐
Green roofs/Brown roofs	☐
Blue roofs	☐
Impervious area reduction (e.g. permeable pavers, site design)	☒

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): T*he 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.

Name	Included?
Bioretention without underdrains	☐
Rain gardens	☐
Porous landscaping	☐
Infiltration planters	☐
Retention swales	☐
Infiltration trenches	☐
Infiltration basins	☐
Drywells	☐
Subsurface infiltration galleries	☐
French drains	☐
Permeable asphalt	☐
Permeable concrete	☐
Permeable concrete pavers	☐
Other:	☐
Other:	☐

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	☐
Surface-based infiltration BMPs	☐
Biotreatment BMPs	☒
Above-ground cisterns and basins	☐
Underground detention	☒
Other:	☐
Other:	☐
Other:	☐

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.

Name	Included?
Bioretention with underdrains	☐
Stormwater planter boxes with underdrains	☒
Rain gardens with underdrains	☐
Constructed wetlands	☐
Vegetated swales	☐
Vegetated filter strips	☐
Proprietary vegetated biotreatment systems	☒
Wet extended detention basin	☐
Dry extended detention basins	☐
Other:	☐
Other:	☐

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	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Common Area Landscape Management	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste will be handled onsite.
N6	Local Industrial Permit Compliance	☐	☒	Industrial uses are not present on-site.
N7	Spill Contingency Plan	☒	☐	
N8	Underground Storage Tank Compliance	☐	☒	No USTs proposed.
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous material will be handled onsite.
N10	Uniform Fire Code Implementation	☒	☐	
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	No depressed loading docks are proposed.
N14	Common Area Catch Basin Inspection	☒	☐	

N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	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 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 a 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	☒	☐	Catch basins will be stenciled.
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒	Outdoor material storage areas are not proposed.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐	Trash enclosures will be fully walled and gated
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐	Efficient irrigation and a drought-resistant plant palette are proposed.
S5	Protect slopes and channels and provide energy dissipation	☒	☐	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)	☐	☒	Project is in North Orange County
S6	Dock areas	☐	☒	No proposed depressed loading dock
S7	Maintenance bays	☐	☒	Maintenance bays are not proposed.
S8	Vehicle wash areas	☐	☒	Vehicle wash areas are not proposed.
S9	Outdoor processing areas	☐	☒	Outdoor processing areas are not proposed.
S10	Equipment wash areas	☐	☒	Equipment wash areas are not proposed.

S11	Fueling areas	☐	☒	Fueling areas are not proposed.
S12	Hillside landscaping	☒	☐	Hillside landscaping will be provided on the Katella Ave. roadway embankment.
S13	Wash water control for food preparation areas	☐	☒	Outdoor wash areas are not proposed.
S14	Community car wash racks	☐	☒	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):				
☒Redevelopment projects that reduce the overall impervious footprint of the project site.	☐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.		☒ 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).	
☒ 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).		☐ 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		☐ 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).
☐Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.	☐ Developments in a city center area.	☐ Developments in historic districts or historic preservation areas.	☐ 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	☒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 decription of indiviual 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 landscae strip alng the north property line and landscape dipersed 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 residentail (wrap 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 environmentla benefits.

In-Fill Projects (10% credit): The project is proposed on a parking lot the 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 1st to April 15th.

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
Non-Structural Source Control BMPs			
N1. Education for Property Owners, Tenants and Occupants	Upon Tenant Occupancy	Educational material shall be provided to all employees and tenants.	Property Management Association
N2. Activity Restriction	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
N3. Common Area Landscape Management	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
N4. BMP Maintenance	Weekly	Maintenance of BMPs implemented at the project site shall be performed at the frequency prescribed in this WQMP.	Property Management Association
N11. Common Area Litter Control	Daily	Litter patrol, violations investigation, reporting and other litter control activities shall be performed in conjunction with maintenance activities.	Property Management Association
N12. Employee Training	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
N14. Common Area Catch Basin Inspection	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

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
N15. Street Sweeping Private Streets and Parking Lots	Monthly	Private streets and parking area within the project shall be swept at a minimum frequency of once a month.	Property Management Association
Structural Source Control BMPs			
S1. Provide Storm Drain System Stenciling and Signage	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
S3. Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction	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
S4. Use Efficient Irrigation Systems & Landscape Design	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
S5. Protect Slopes and Channels	Monthly	Maintain area and clear any accumulated sediment or trash during the summer, or early fall, before October 1st.	Property Management Association
Medium Term Erosion Control BMPs			
EC5. Soil Stabilization	Monthly and after large storms.	Inspect graded building pads and reapply stabilization if signs of erosion are present.	Property Management Association
Low Impact Development (LID) and Treatment Control BMPs			
Modular Wetland	Bi- annual	Inspect and remove trash and debris from outlet pipe and vault twice a year.	Property Management Association
Hydrodynamic Separator	Bi-annual	Inspect and remove trash and debris from the collection chamber twice a year.	Property Management Association

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
Diversion Structure	Every two months	Inspect and remove trash and debris as necessary from the diversion box every two months.	Property Management Association
Underground Detention System	Bi-annual	Inspect and remove trash and debris from the detention system twice a year.	Property Management Association
Strom Drain Pump Systems	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 attachedment 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 (http://www.ocwatersheds.com)	Check If Applicable	Business Material (http://www.ocwatersheds.com)	Check If Applicable
The Ocean Begins at Your Front Door	☒	Tips for the Automotive Industry	☐
Tips for Car Wash Fund-raisers	☐	Tips for Using Concrete and Mortar	☐
Tips for the Home Mechanic	☐	Tips for the Food Service Industry	☒
Homeowners Guide for Sustainable Water Use	☐	Proper Maintenance Practices for Your Business	☐
Household Tips	☐	Other Material	Check If Attached
Proper Disposal of Household Hazardous Waste	☐		
Recycle at Your Local Used Oil Collection Center (North County)	☐		☐
Recycle at Your Local Used Oil Collection Center (Central County)	☐		☐
Recycle at Your Local Used Oil Collection Center (South County)	☐		☐
Tips for Maintaining a Septic Tank System	☐		☐
Responsible Pest Control	☒		☐
Sewer Spill	☒		☐
Tips for the Home Improvement Projects	☐		☐
Tips for Horse Care	☐		☐
Tips for Landscaping and Gardening	☐		☐
Tips for Pet Care	☐		☐
Tips for Pool Maintenance	☐		☐
Tips for Residential Pool, Landscape and Hardscape Drains	☐		☐
Tips for Projects Using Paint	☒		☐

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

Pollutant:	**Bifenthrin**
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. One (1) 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 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:	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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5 Whole-sediment toxicity identification evaluation tools for pyrethroid insecticides: I. piperonyl butoxide addition. Environ. Toxicol. Chem. 26:2389-2396.
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 65267 **Region 8**
Los Alamitos Channel

Pollutant:	**Cadmium**
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 65267, Cadmium **Region 8**
Los Alamitos Channel

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:	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 cadmium is 4.98 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 **65268** **Region 8**
Los Alamitos Channel

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 **Region 8**
Los Alamitos Channel

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:	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:	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:	Whole-sediment toxicity identification evaluation tools for pyrethroid insecticides: I. piperonyl butoxide addition. Environ. Toxicol. Chem. 26:2389-2396.
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 **65269** **Region 8**
Los Alamitos Channel

Pollutant: **Chromium**
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 65269, Chromium **Region 8**
Los Alamitos Channel

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:	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 chromium is 111 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 65270 Region 8
Los Alamitos Channel

Pollutant:	**Copper**
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 65270, Copper Region 8
Los Alamitos Channel

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:	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 copper is 149 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 65271 Region 8
Los Alamitos Channel

Pollutant:	**Cyfluthrin**
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 65271, Cyfluthrin Region 8
Los Alamitos Channel

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:	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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5
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 65272 Region 8
Los Alamitos Channel

Pollutant:	**Cyhalothrin, Lambda**
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 65272, Cyhalothrin, Lambda **Region 8**

Los Alamitos Channel

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:	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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5
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 **65273** **Region 8**

Los Alamitos Channel

Pollutant:	**Cypermethrin**
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 65273, Cypermethrin **Region 8**
Los Alamitos Channel

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:	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:	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:	Partitioning, bioavailability, and toxicity of the pyrethroid insecticide cypermethrin in sediments. Environmental Toxicology and Chemistry 21:9-15
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 **65274** **Region 8**
Los Alamitos Channel

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: 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 65274, DDD (Dichlorodiphenyldichloroethane) **Region 8**
Los Alamitos Channel

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:	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 sum of DDD is 28.0 ug/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 **65275** **Region 8**
Los Alamitos Channel

Pollutant:	**DDE (Dichlorodiphenyldichloroethylene)**
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. One (1) 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 65275, DDE (Dichlorodiphenyldichloroethylene) **Region 8**
Los Alamitos Channel

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:	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 DDE.
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 sum of DDE is 31.3 ug/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 65276 Region 8
Los Alamitos Channel

Pollutant:	**DDT (Dichlorodiphenyltrichloroethane)**
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. 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. 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 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. 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 65276, DDT (Dichlorodiphenyltrichloroethane) Region 8
Los Alamitos Channel

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:	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 DDT, Total.
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 total DDTs is 572 ug/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)

Line of Evidence (LOE) for Decision ID 65276, DDT (Dichlorodiphenyltrichloroethane) **Region 8**
Los Alamitos Channel

LOE ID:	95773
Pollutant:	DDT (Dichlorodiphenyltrichloroethane)
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 DDT.
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 sum of DDT is 62.9 ug/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 **65277** **Region 8**
Los Alamitos Channel

Pollutant:	**Deltamethrin**
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 65277, Deltamethrin **Region 8**
Los Alamitos Channel

LOE ID:	95771
Pollutant:	Deltamethrin
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 Deltamethrin.
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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5
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 65278 Region 8
Los Alamitos Channel

Pollutant:	**Diazinon**
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 65278, Diazinon Region 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:	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:	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:	Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83?92.
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 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:	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 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:	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 dieldrin is 61.8 ug/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	65280	Region 8
Los Alamitos Channel		

Pollutant:	**Endrin**
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 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:	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 endrin is 207 ug/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	65281	Region 8
Los Alamitos Channel		

Pollutant:	**Esfenvalerate/Fenvalerate**
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 65281, Esfenvalerate/Fenvalerate **Region 8**
Los Alamitos Channel

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:	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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5
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 **65282** **Region 8**
Los Alamitos Channel

Pollutant: **Fenpropathrin**
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 65282, Fenpropathrin **Region 8**
Los Alamitos Channel

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:	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:	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:	Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83?92.
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 **65283** **Region 8**
Los Alamitos Channel

Pollutant: **Lead**
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 65283, Lead **Region 8**
Los Alamitos Channel

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:	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 lead is 128 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 65284 **Region 8**
Los Alamitos Channel

Pollutant:	**Lindane/gamma Hexachlorocyclohexane (gamma-HCH)**
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 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:	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 Lindane (gamma-HCH) is 4.99 ug/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 65285 Region 8
Los Alamitos Channel

Pollutant:	**Mercury**
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 65285, Mercury **Region 8**
Los Alamitos Channel

LOE ID:	95783
Pollutant:	Mercury
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 Mercury.
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 mercury is 1.06 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 65286 Region 8
Los Alamitos Channel

Pollutant:	**Methyl Parathion**
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 65286, Methyl Parathion **Region 8**
Los Alamitos Channel

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:	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:	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:	Toxicity of Sediment-Associated Pesticides to Chironomus dilutus and Hyalella azteca. Arch. Environ. Contam. Toxicol. 61:83?92.
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 **65287** **Region 8**
Los Alamitos Channel

Pollutant:	**Nickel**
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 65287, Nickel **Region 8**
Los Alamitos Channel

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:	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 nickel is 48.6 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 **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 **Region 8**
Los Alamitos Channel

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:	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:	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:	Use and Toxicity of Pyrethroid Pesticides in the Central Valley, California, USA. Environmental Toxicology and Chemistry, 24:966-972, with erratum 24:No. 5
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 **65549** **Region 8**
Los Alamitos Channel

Pollutant:	**Toxicity**
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 3.6 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. 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. 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.
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 65549, Toxicity **Region 8**
Los Alamitos Channel

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:	Statewide Stream Pollution Trends Study 2008
SWAMP Data:	SWAMP
Water Quality Objective/Criterion:	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.
Objective/Criterion Reference:	Water Quality Control Plan, Santa Ana River Basin
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:	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
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):	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 65290 Region 8
Los Alamitos Channel

Pollutant:	**Zinc**
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 65290, Zinc Region 8
Los Alamitos Channel

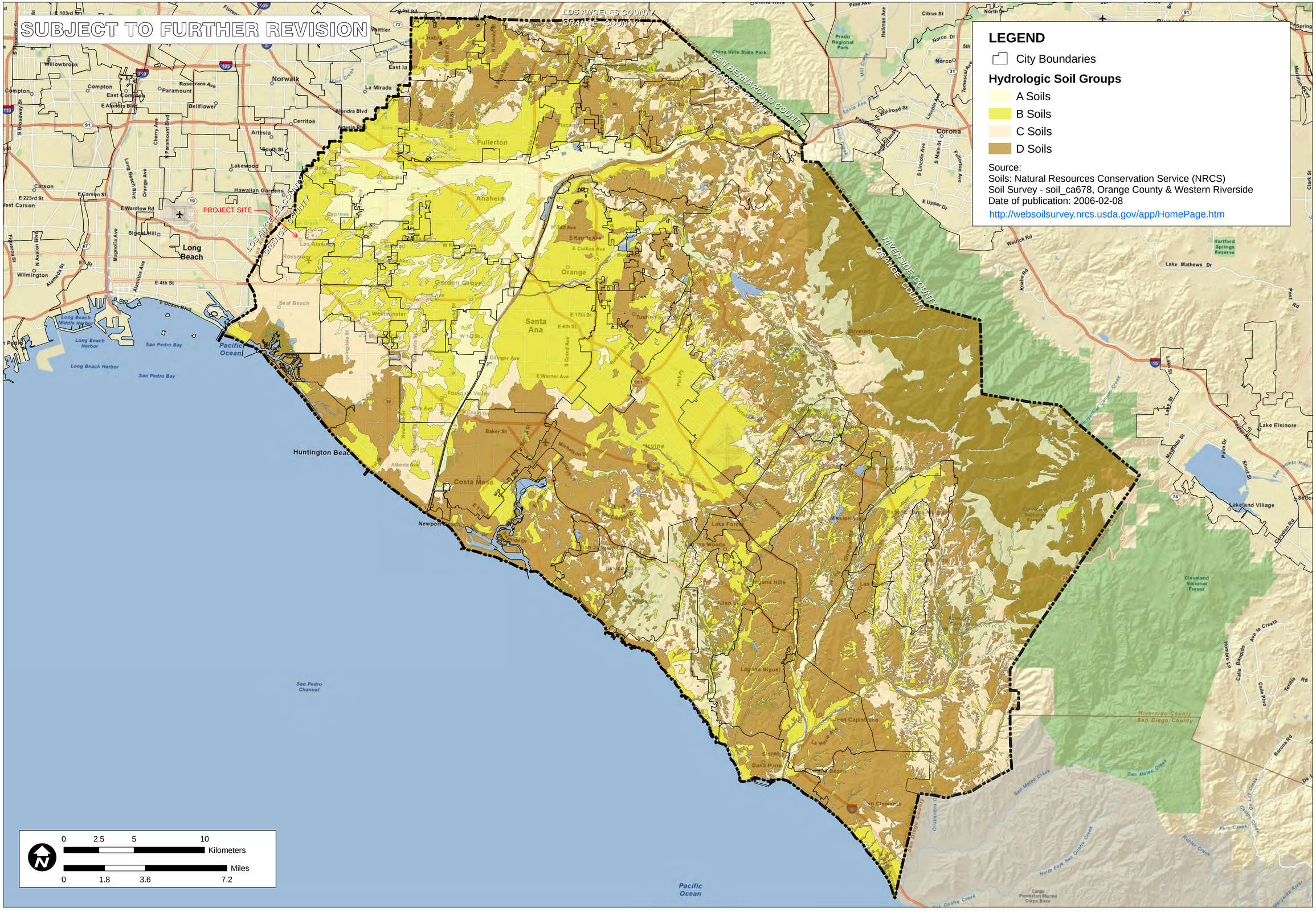
LOE ID:	95789
Pollutant:	Zinc
LOE Subgroup:	Pollutant-Sediment
Matrix:	Sediment
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	1
Number of Exceedances:	0
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Water Board staff assessed SWAMP 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:	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 zinc is 459 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)

ATTACHMENT B

COUNTY SOILS, HYDROMODIFICATION SUSCEPTIBILITY, AND RAINFALL MAPS

SUBJECT TO FURTHER REVISION



LEGEND

- City Boundaries

Hydrologic Soil Groups

- A Soils
- B Soils
- C Soils
- D Soils

Source:
Soils: Natural Resources Conservation Service (NRCS)
Soil Survey - soil_ca678, Orange County & Western Riverside
Date of publication: 2006-02-08
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

0 2.5 5 10 Kilometers
0 1.8 3.6 7.2 Miles

TITLE
NRCS HYDROLOGIC SOILS GROUPS

JOB
ORANGE COUNTY INFILTRATION STUDY
ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2a

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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

Los Angeles County

Humble Reservoir

Orange County

Valencia Reservoir

Fullerton Loftus Diversion Channel Desilting Basin

Fullerton Reservoir

Brea Creek Reservoir

Fullerton Reservoir

Fullerton Reservoir

Hillcrest Park Reservoir

Fullerton Airport

Fullerton

Buena Park

Miller Retarding Basin

La Jolla Recharge Basin

Placentia Retarding Basin

Kraemer Basin

Raymond Retarding Basin

Gilbert Retarding Basin

Crescent Retarding Basin

Santa River Watershed

SITE

Channel in Retarding Basin

Cypress Retarding Basin

Anaheim Bay-Huntington Harbor Watershed

Rossmoor Retarding Basin

Los Alamitos Naval Air Station

Los Alamitos Retarding Basin

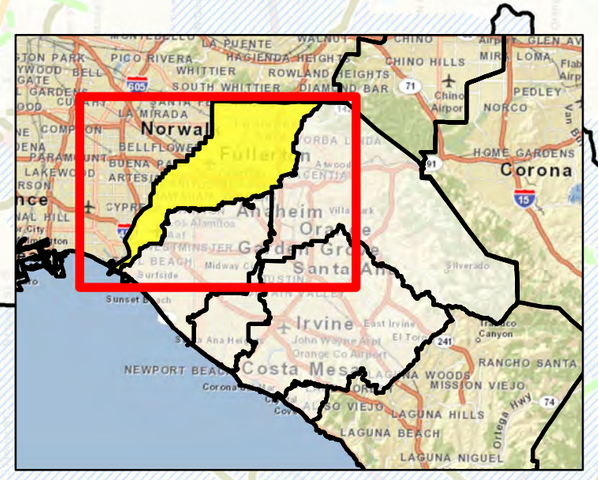
Seal Beach Naval Weapons Station

Seal Beach

Pacific Ocean

Newport Bay-Newport Coastal Streams Watershed

0 8,000 16,000 Feet



TITLE: SUSCEPTIBILITY ANALYIS SAN GABRIEL-COYOTE CREEK

ORANGE COUNTY WATERSHED MASTER PLANNING

JOB: ORANGE CO. CA

SCALE	1" = 8000'
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/30/10
JOB NO.	9526-E

PACE Advanced Water Engineering

1

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SUBJECT TO FURTHER REVISION

LEGEND

- Orange County Precipitation Stations
- 24 Hour, 85th Percentile Rainfall (Inches)
- 24 Hour, 85th Percentile Rainfall (Inches) - Extrapolated
- City Boundaries

Rainfall Zones

Design Capture Storm Depth (inches)

- 0.65"
- 0.7
- 0.75
- 0.80
- 0.85
- 0.90
- 0.95
- 1.00
- 1.10"

Note: Events defined as 24-hour periods (calendar days) with greater than 0.1 inches of rainfall.
For areas outside of available data coverage, professional judgment shall be applied.

0.65 0.7 0.75 0.8 0.85 0.9 0.95 1 1.05 1.1

PROJECT SITE

LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
San Pedro Channel
Pacific Ocean

0 3 6 12 Kilometers
0 1.8 3.6 7.2 Miles

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-1_RainfallZones_20110215.mxd

TITLE: RAINFALL ZONES

JOB: ORANGE COUNTY TECHNICAL GUIDANCE DOCUMENT — ORANGE CO. — CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	9526-E

PACE Advanced Water Engineering

FIGURE XVI-1

ATTACHMENT C

GEOTECHNICAL REPORT

NMG Geotechnical, Inc.

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 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)	
		April 16, 2019	*May 21, 2019*
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)







0 375 750 Feet

1 inch = 750 feet

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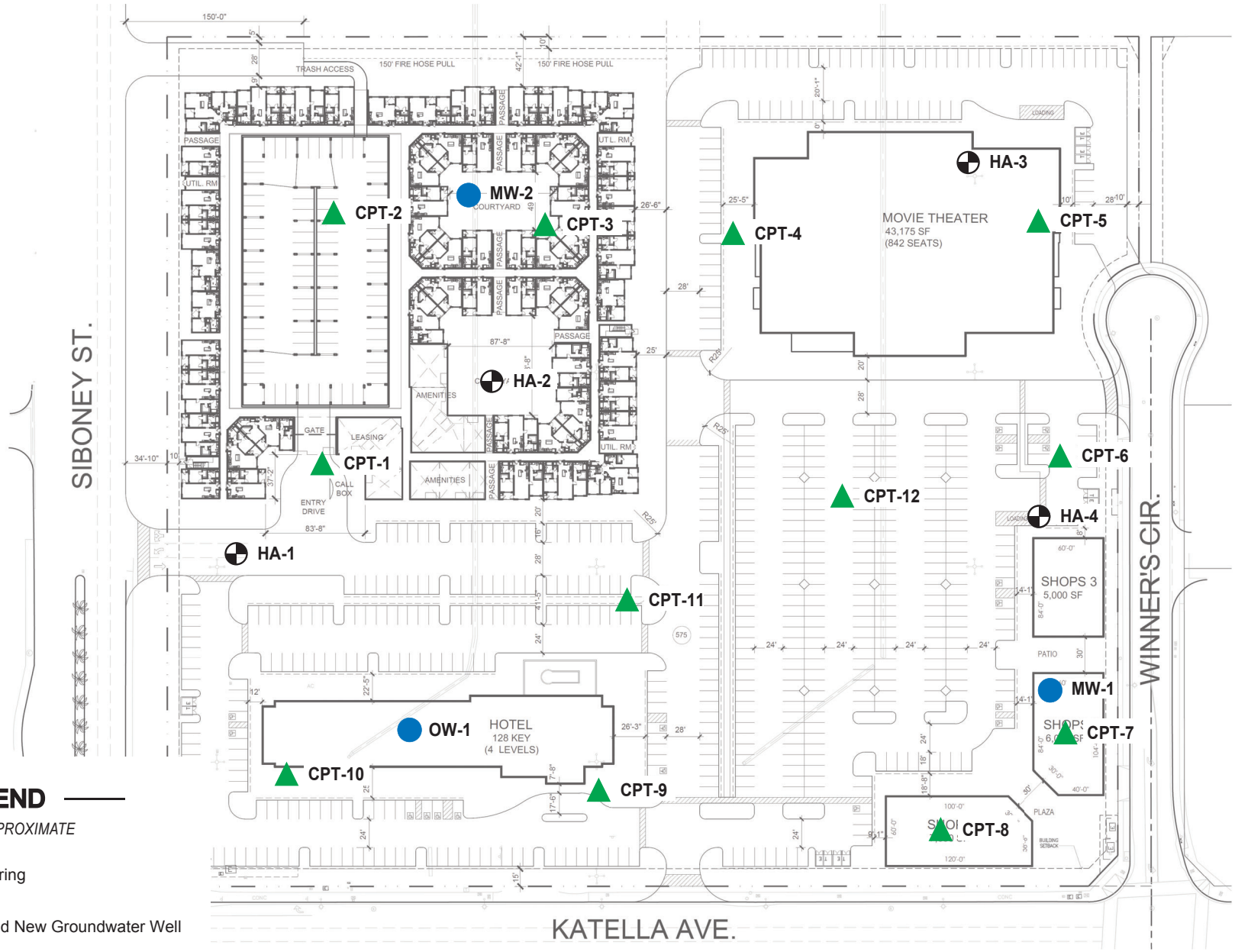
SITE LOCATION MAP

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

NMG

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LEGEND

LOCATIONS ARE APPROXIMATE

HA-4	Auger Boring
OW-1	Boring and New Groundwater Well
MW-2	Existing Groundwater Well
CPT-12	Previous Cone Penetration Test (Leighton, 2017)

BORING, WELL AND CPT LOCATION MAP

PROPOSED MIXED-USE DEVELOPMENT
SIBONEY STREET AND KATELLA AVENUE
CITY OF CYPRESS, CALIFORNIA

Project Number: 19046-01

Project Name: Shea Prop / Cypress

Date: 6/13/19 Figure 2

NMG Geotechnical, Inc.

APPENDIX A

APPENDIX A

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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

Date	*Flight*	*Photo No.*	*Scale (1"=)*	*Source*
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
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	*GRAVEL AND GRAVELLY SOILS* MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	*CLEAN GRAVELS* (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	*CLEAN SANDS* (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	*SILTS AND CLAYS*	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE 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

1. 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.
2. 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

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

OW-1

Sheet 1 of 1

Total Depth Drilled (ft)	**20.0**
Approximate Ground Surface Elevation (ft)	**31.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					ML-CL	Surface: 2" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 1'-5': Dark brown clayey SILT/silty CLAY, moist.			B-1 @ 1'-5' EI, CC
			B-1							
	5		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				▽			
	15		D-4	9		ML	@ 15': Grayish brown clayey/sandy SILT, saturated, medium stiff, micaceous.	22.0	102.7	
			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						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.			
10	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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			

HA-1

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**31.5 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					CL	Surface: 3" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 0.5'-3': Brown to dark brown silty CLAY, very moist.			B-1 @ 1'-5' RV, EI, CC
			B-1			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.			
							Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

HA-2

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**31.5 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					CL	Surface: 2.5" AC over 2" AB. Parking Lot. **Alluvium (Qal)** @ 0.5'-1': Dark brown silty CLAY, very moist.			B-1 @ 1'-5' EI, CC
						SM-SC	@ 1'-5': Grayish brown silty/clayey fine SAND, saturated, micaceous.			
			B-1							
	5		D-1	12		SM	@ 5': Grayish brown silty fine to medium SAND, saturated, loose, micaceous.	21.5	97.1	
							Notes: Total Depth: 6.5 Feet. Groundwater at 4.75 Feet After Drilling. Backfilled with Cuttings and Tamped. Capped with Concrete and Black Dye.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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			

HA-3

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**32.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	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'
						SM	**Alluvium (Qal)**			
30			B-1				@ 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		
							Notes: Total Depth: 6.5 Feet. No Groundwater Encountered. Backfilled with Cuttings and Tamped.			
	10									
20										
	15									
	20									
10										
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

Report: HOLLOW STEM; Project: 19046-01.GPJ; Data Template: NMG_GINT_2016.GDT; Printed: 5/22/19

Date(s) Drilled	**5/13/19**	Logged By	**ZKH**
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**		
Comments			

HA-4

Sheet 1 of 1

Total Depth Drilled (ft)	**6.5**
Approximate Ground Surface Elevation (ft)	**32.0 msl**

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
30	0					SM	Surface: Dirt/damaged asphalt parking lot. Some gravel and asphalt fragments in upper foot. Very weathered old asphalt parking lot. **Alluvium (Qal)** @ 0'-5': Olive brown to light olive brown silty fine SAND, very moist to wet.			B-1 @ 1'-5' RV, EI, CC
			B-1							
	5		D-1	5			@ 5': No Recovery.			
							Notes: Total Depth: 6.5 Feet. Groundwater 4.5 Feet After Drilling. Backfilled with Cuttings and Tamped.			
20	10									
	15									
10	20									
	25									

LOG OF BORING

Shea Properties/Cypress Mixed-Use
Cypress, California
PROJECT NO. 19046-01

NMG

APPENDIX C

Shea Properties/Cypress Mixed-Use
Project Number: 19046-01

APPENDIX
SUMMARY OF SOIL LABORATORY DATA

Cypress, California

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		Expansion Index	R-Value	Soluble Sulfate Content (% by wt)	Remarks
															Ultimate		Peak							
Boring No.	Sample No.	Depth (feet)	End Depth (feet)	Elevation (feet)	Blow Count (N)					Fines Content (% pass. #200)	Clay Content (% pass. 2μ)	LL (%)	PI (%)		Cohesion (psf)	Friction Angle (°)	Cohesion (psf)	Friction Angle (°)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)				
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												3		0.05	
OW-1	D-2	7.5			12	113.9	92.0	23.8	77.3															
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															

Sample	Compacted Moisture (%)	Compacted Dry Density (pcf)	Final Moisture (%)	Volumetric Swell (%)	Expansion Index[1] Value/Method		Expansive Classification[2]	Soluble Sulfate (%)	Sulfate Exposure[3]
OW-1 B-1 1-5'	8.5	114.4	16.1	0.33	3	A	Very Low	0.05	S0
HA-1 B-1 1-5'	9.0	112.2	17.9	1.6	16	A	Very Low	0.06	S0
HA-2 B-1 1-5'	9.5	111.2	14.2	0.03	0	A	Very Low	0.05	S0
HA-4 B-1 1-5'	10.0	108.0	15.9	0.06	1	A	Very Low	0.05	S0

Test Method:
ASTM D4829

HACH SF-1 (Turbidimetric)

Notes:
1. Expansion Index (EI) method of determination:
   [A] E.I. determined by adjusting water content to achieve a 50 ±1% degree of saturation
   [B] E.I. calculated based on measured saturation within the range of 40% and 60%
2. ASTM D4829 *(Classification of Expansive Soil)*
3. ACI-318-14 Table 19.3.1.1 *(Requirement for Concrete Exposed to Sulfate-Containing Solutions)*

Expansion Index and Soluble Sulfate Test Results

(FRM001 Rev.5)

Project No. 19046-01

Project Name: Shea / Cypress

NMG

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 $x10^{-4}$)	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.

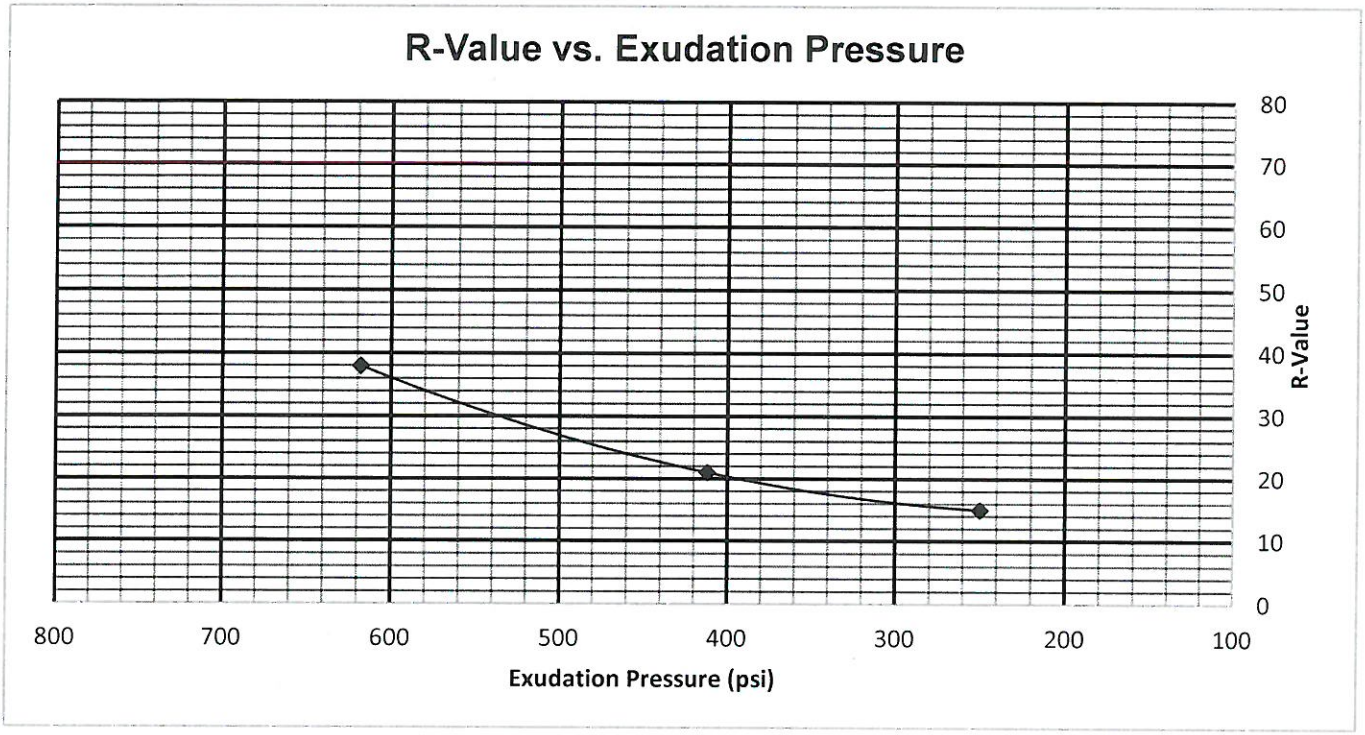
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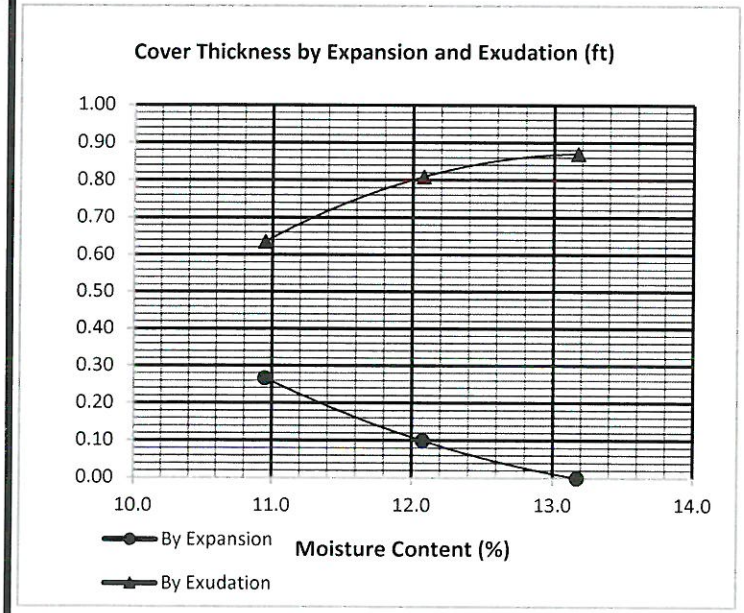
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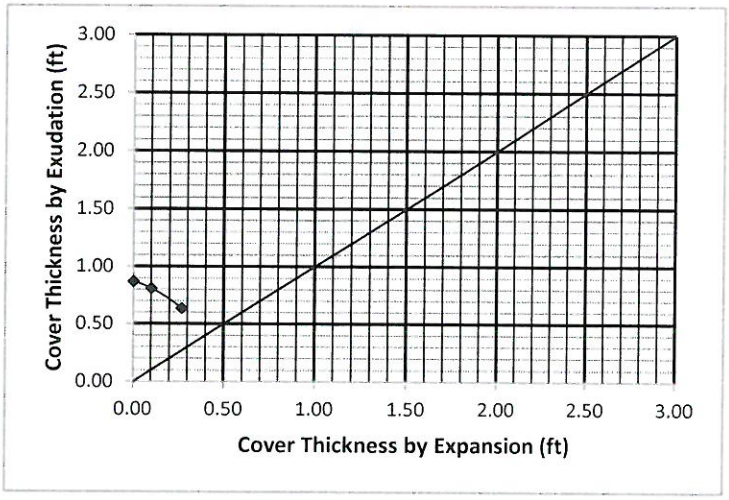
NMG Geotechnical, Inc.

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		







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^{-4})	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.

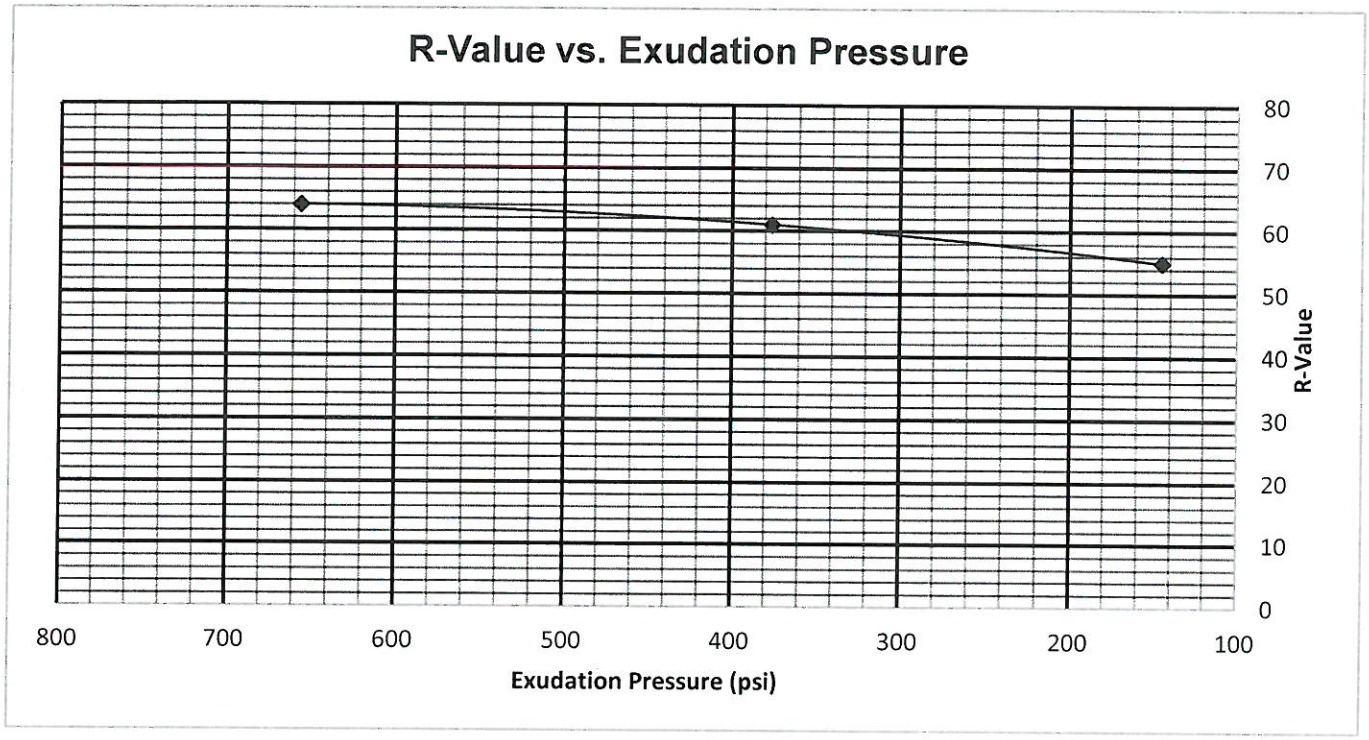
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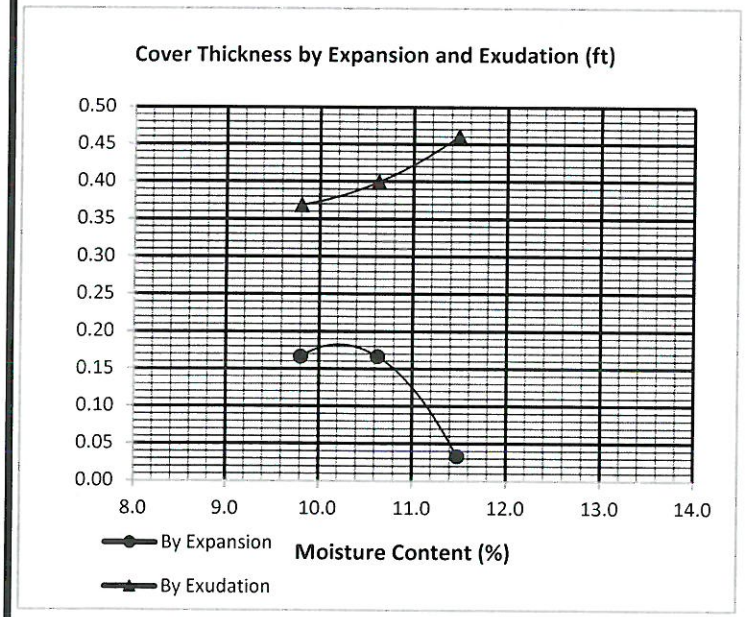
Calculated by: TG Checked by: BAJ Date Completed: 5/20/2019

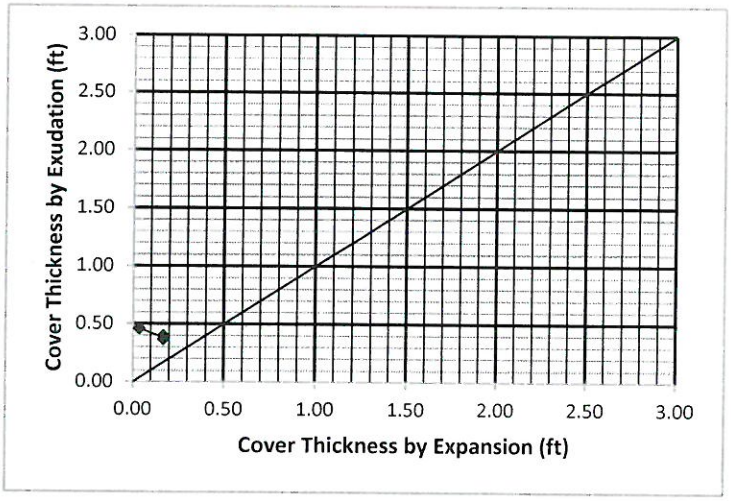
NMG Geotechnical, Inc.

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		







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

NMG Geotechnical, Inc.
17991 Fitch
Irvine, CA 92614

Project title : Shea Properties/Cypress

Location : Cypress, California

Overall vertical settlements report

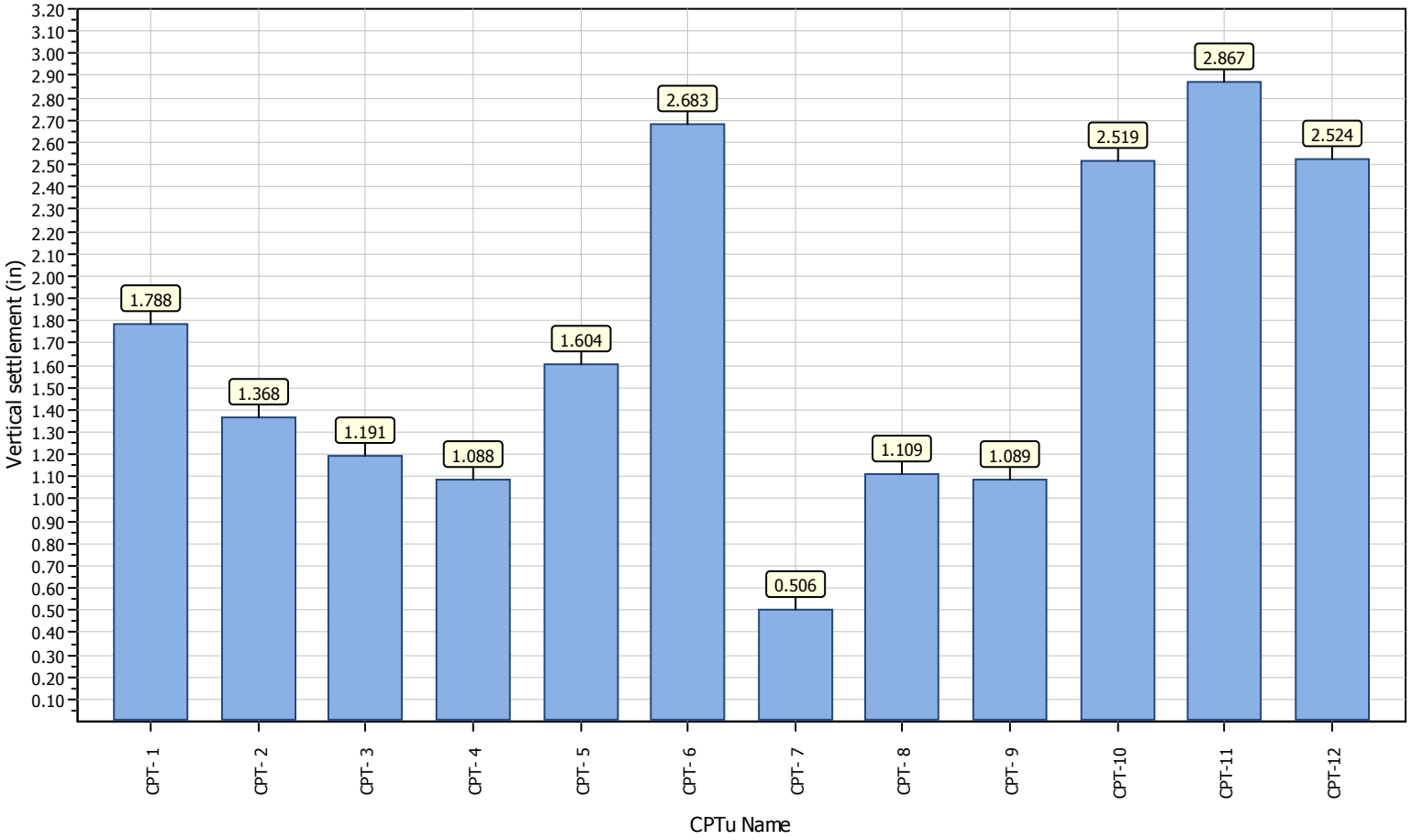


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Irvine, CA 92614

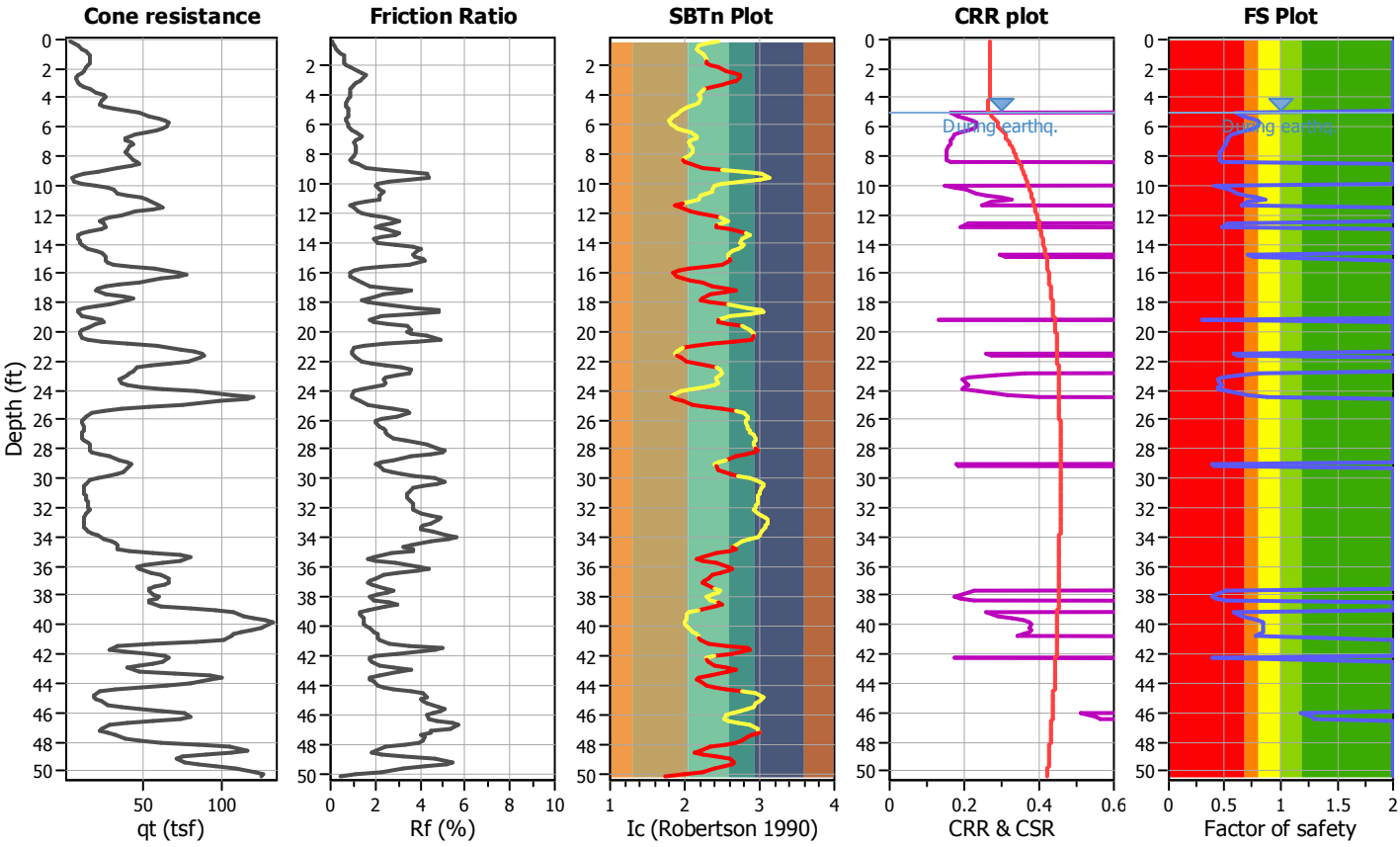
LIQUEFACTION ANALYSIS REPORT

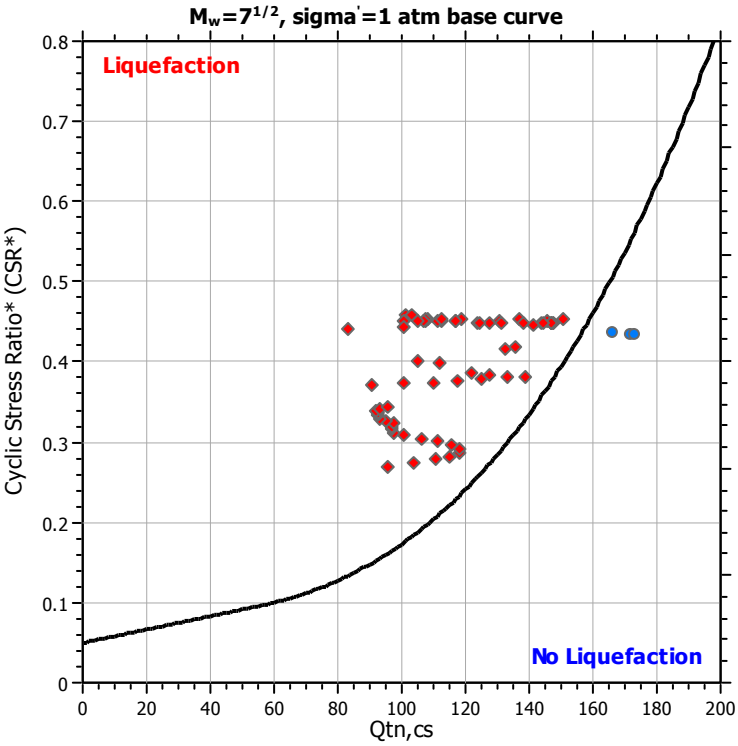
Project title : Shea Properties/Cypress **Location : Cypress, California**

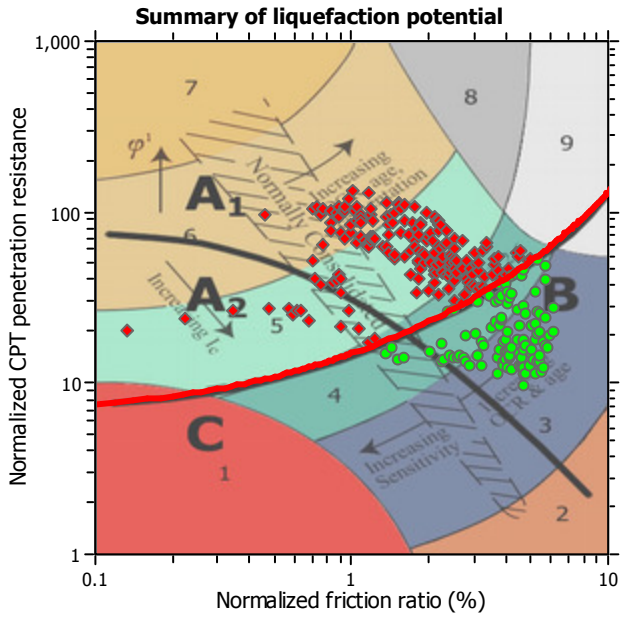
CPT file : CPT- 1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

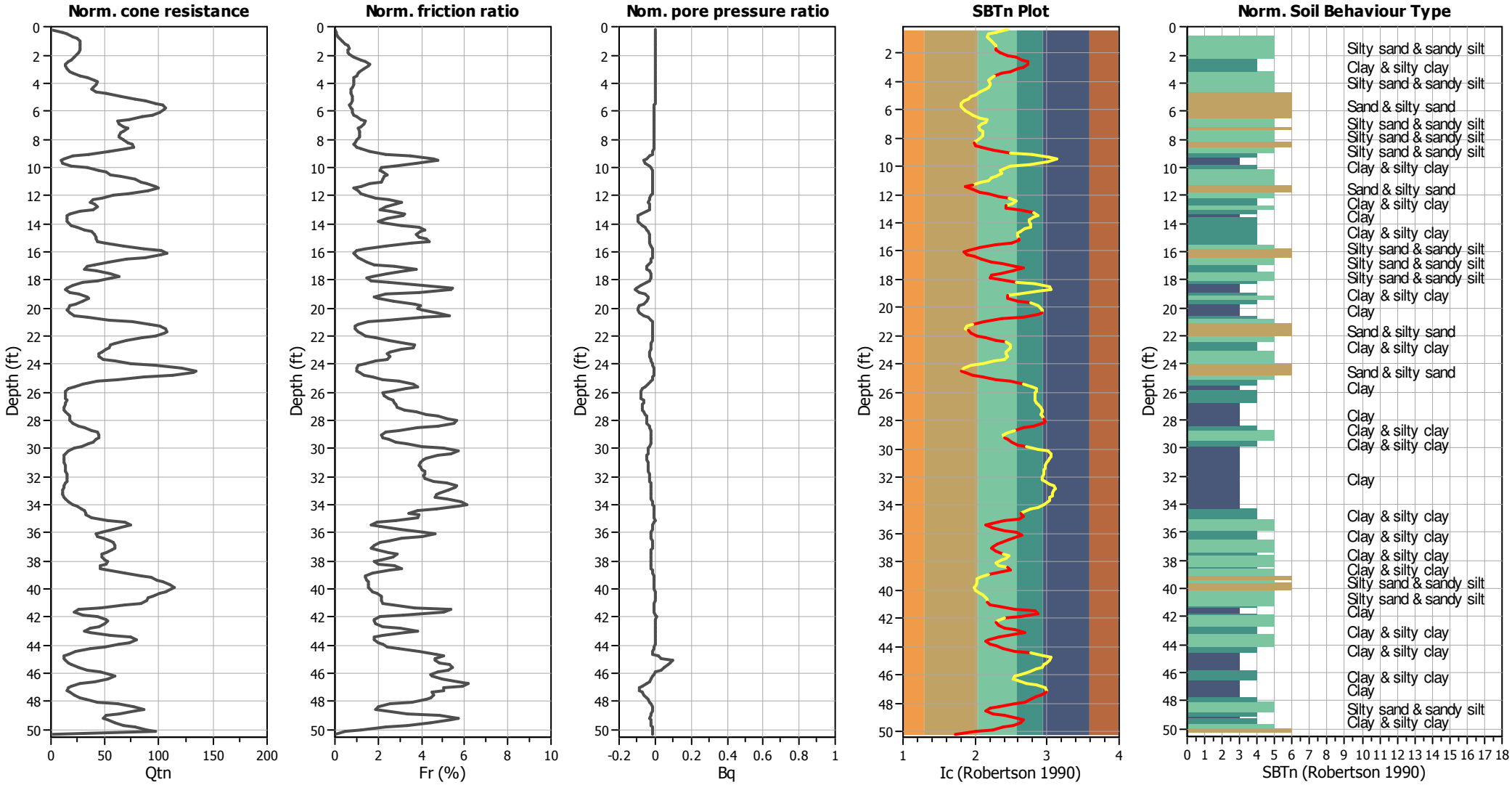






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



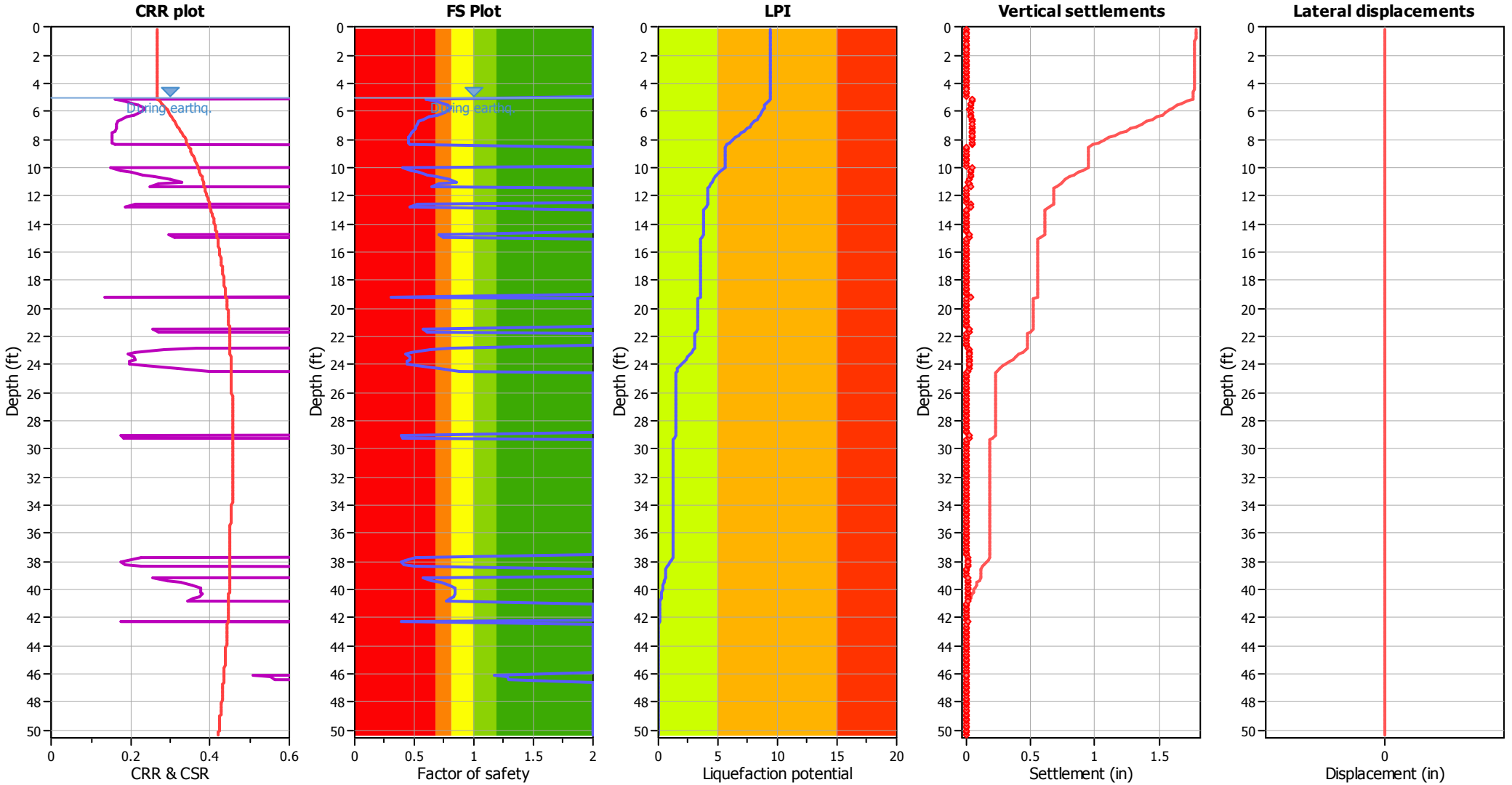
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

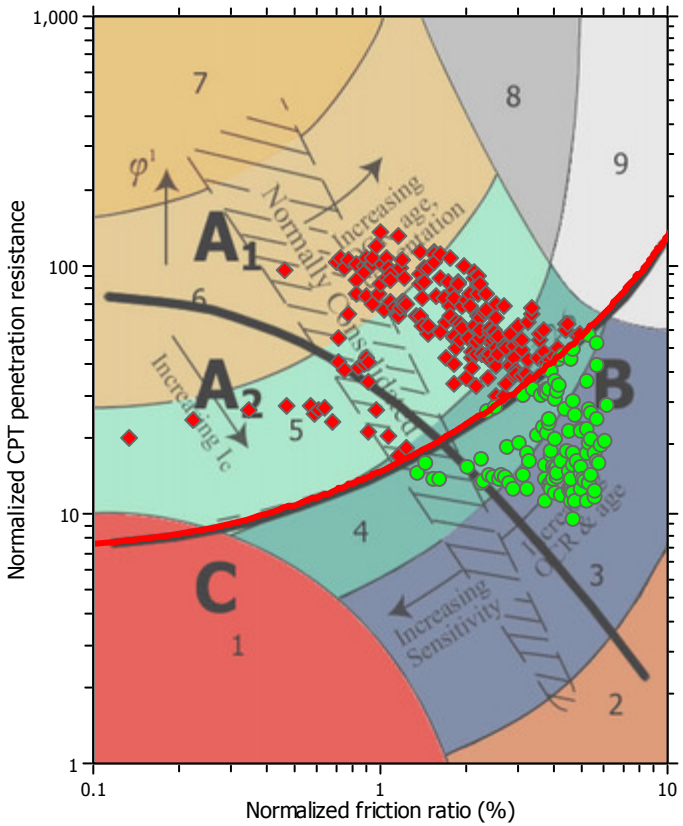
F.S. color scheme

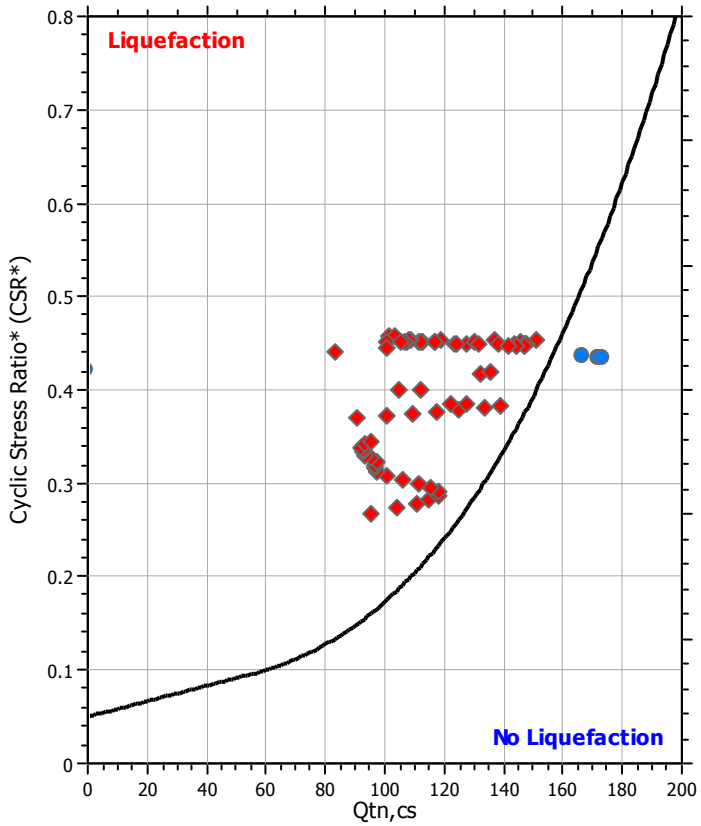
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

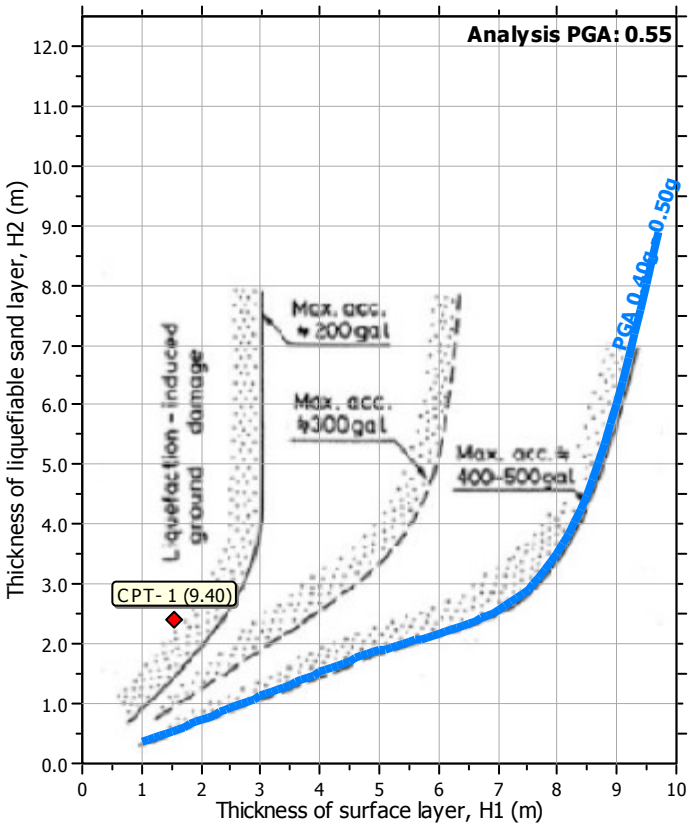
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



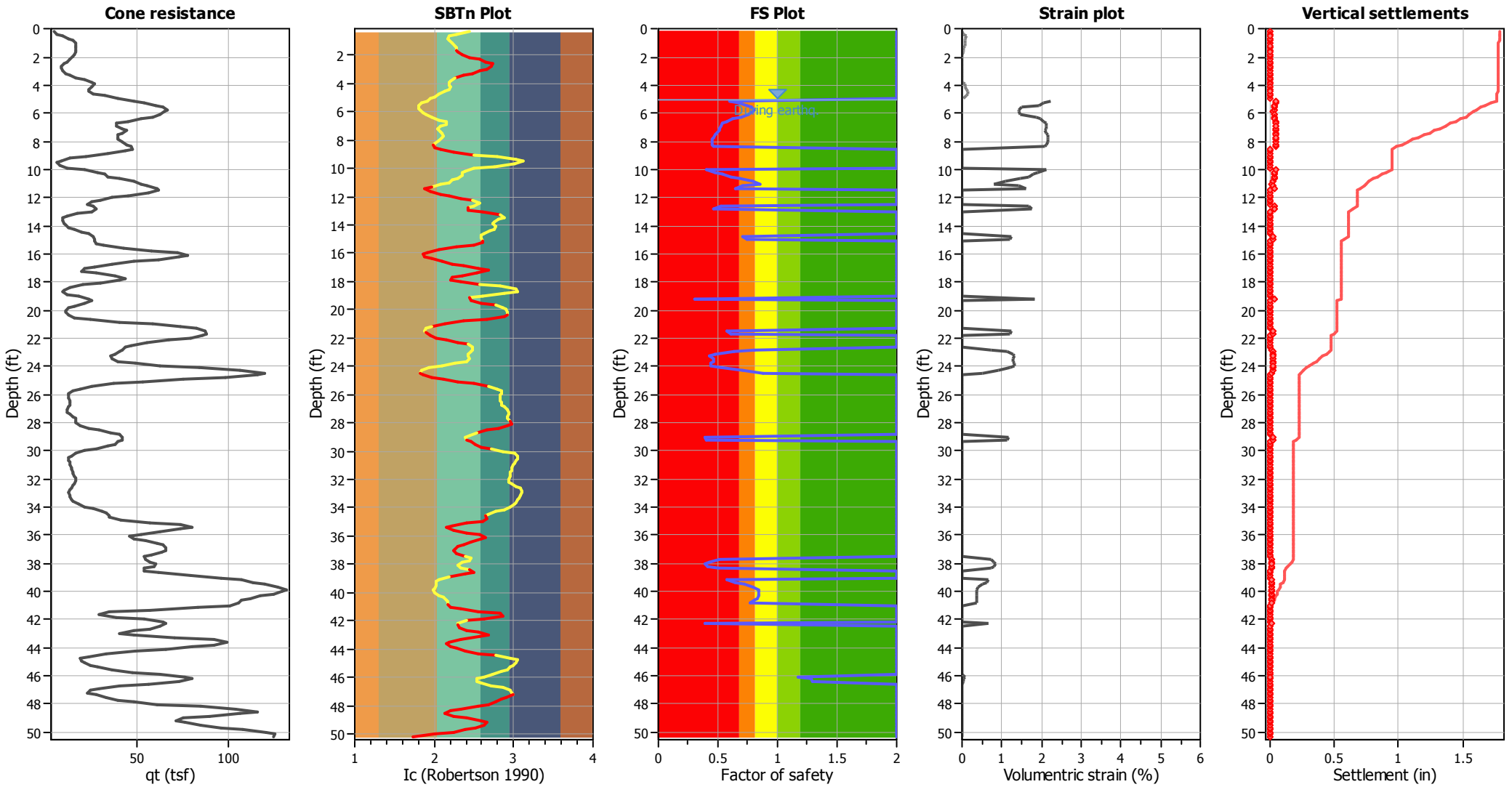




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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17991 Fitch
Irvine, CA 92614

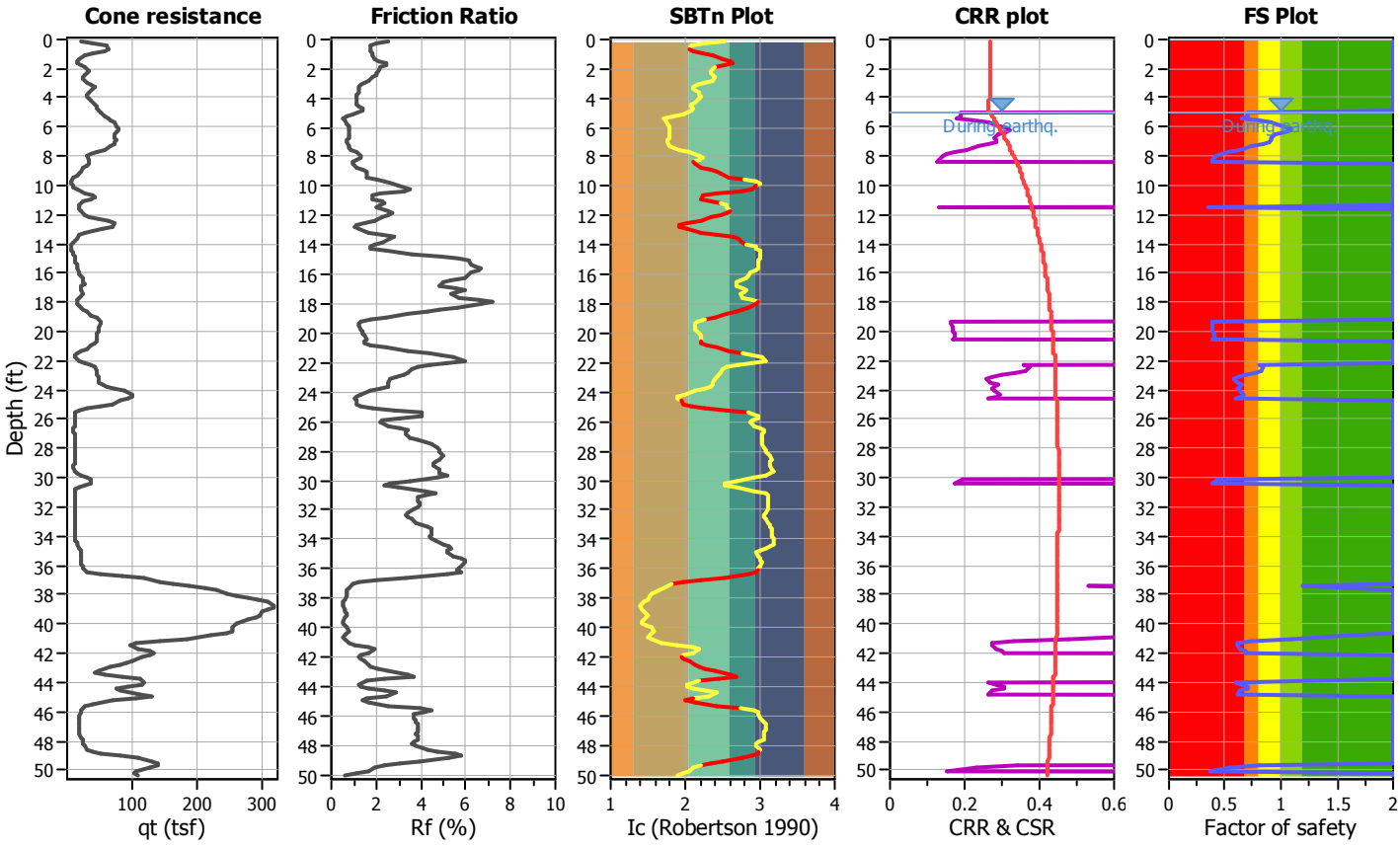
LIQUEFACTION ANALYSIS REPORT

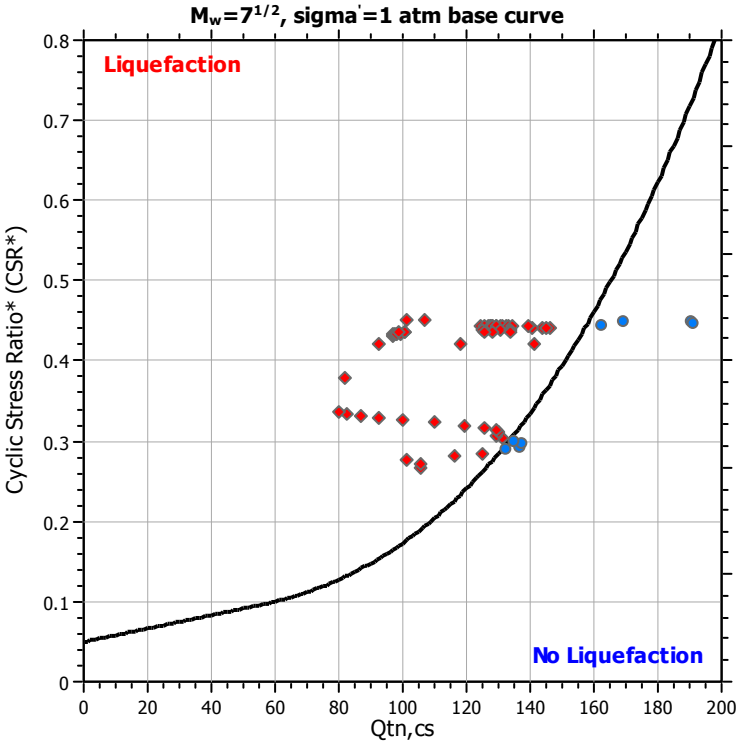
Project title : Shea Properties/Cypress **Location : Cypress, California**

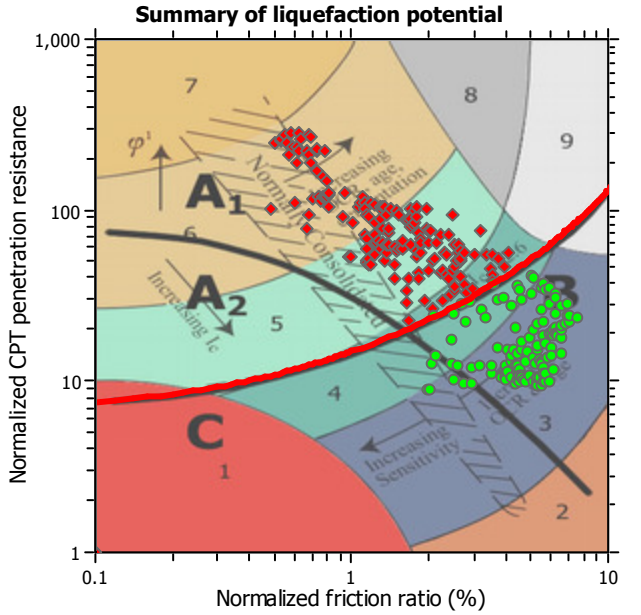
CPT file : CPT- 2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

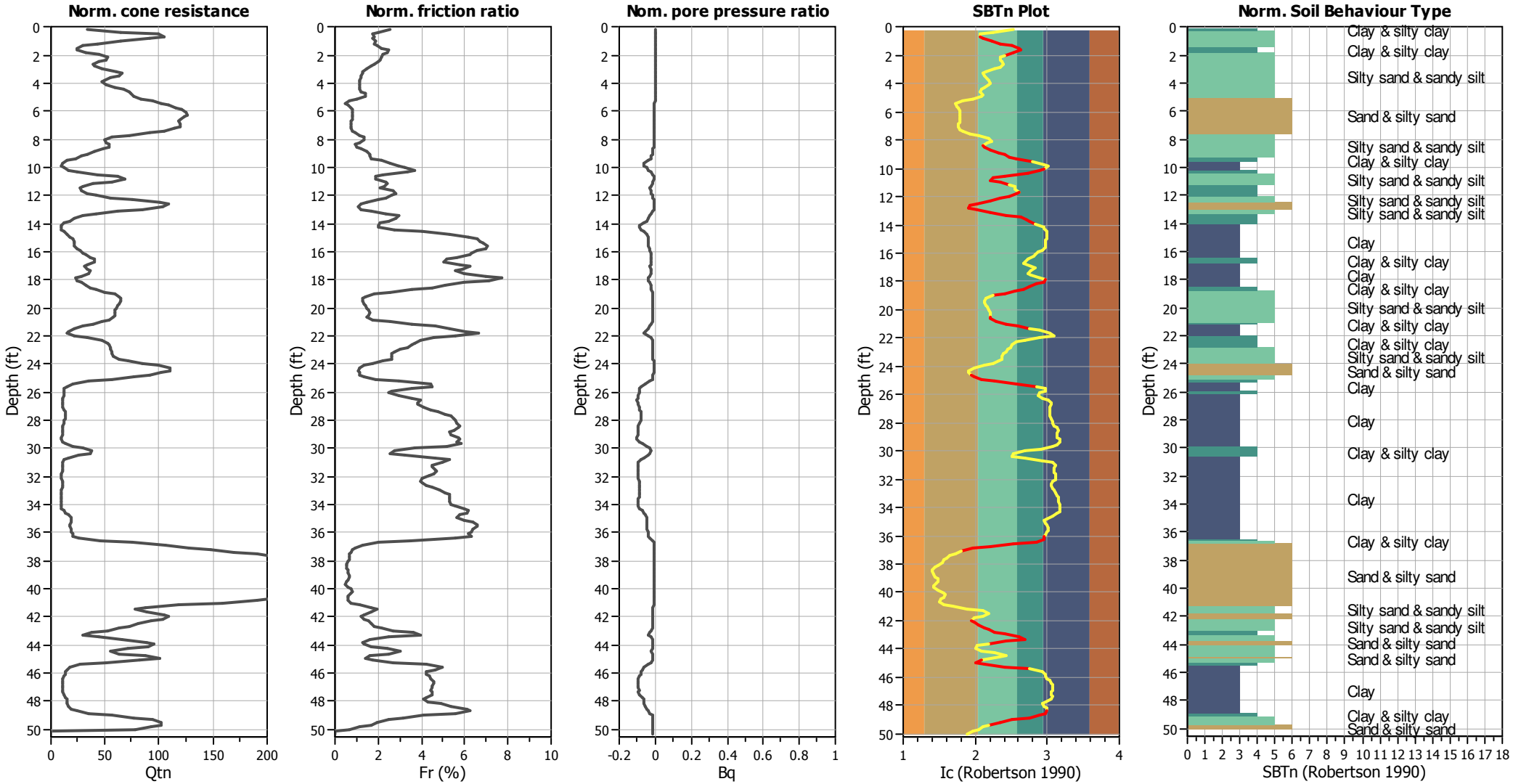






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



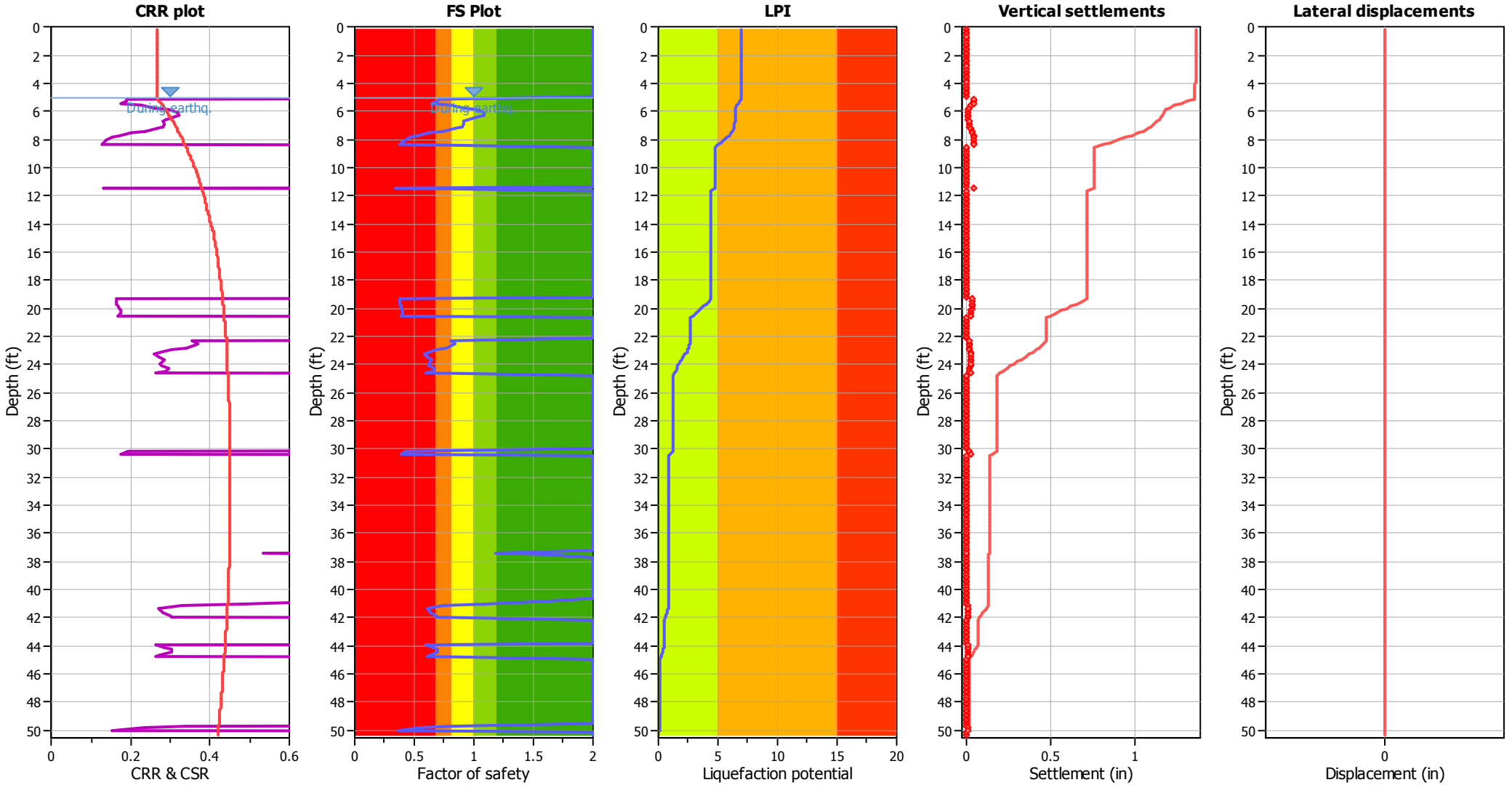
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

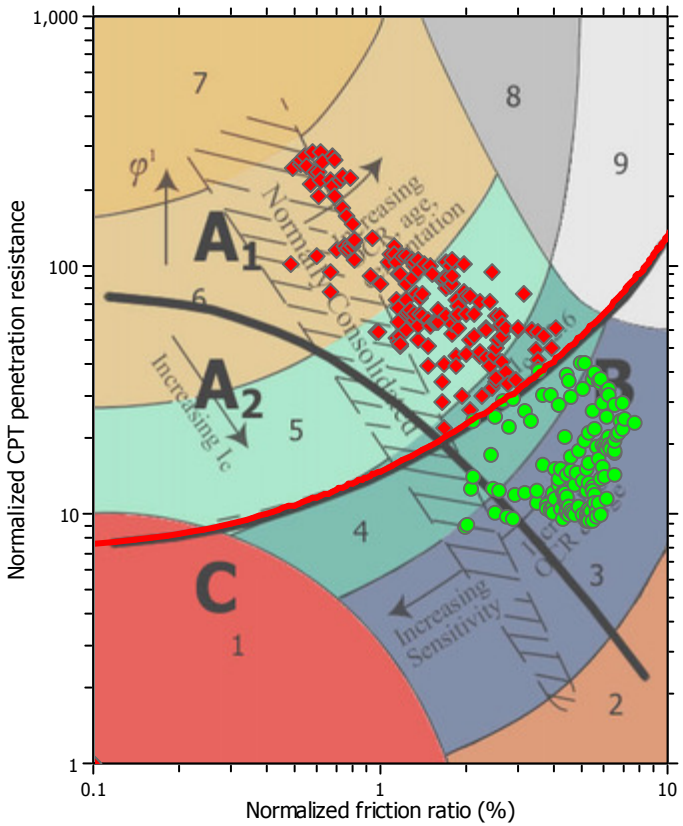
F.S. color scheme

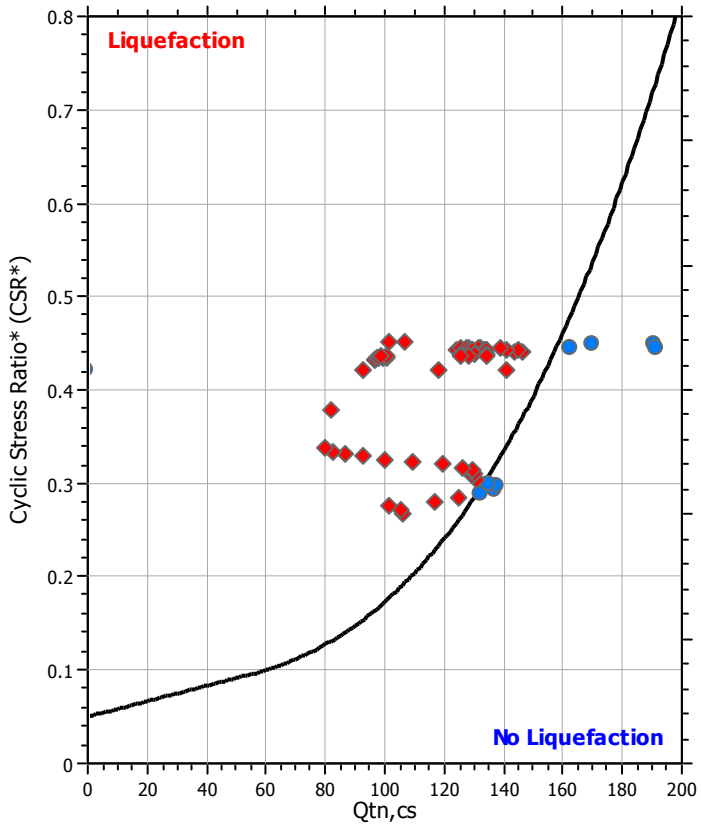
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

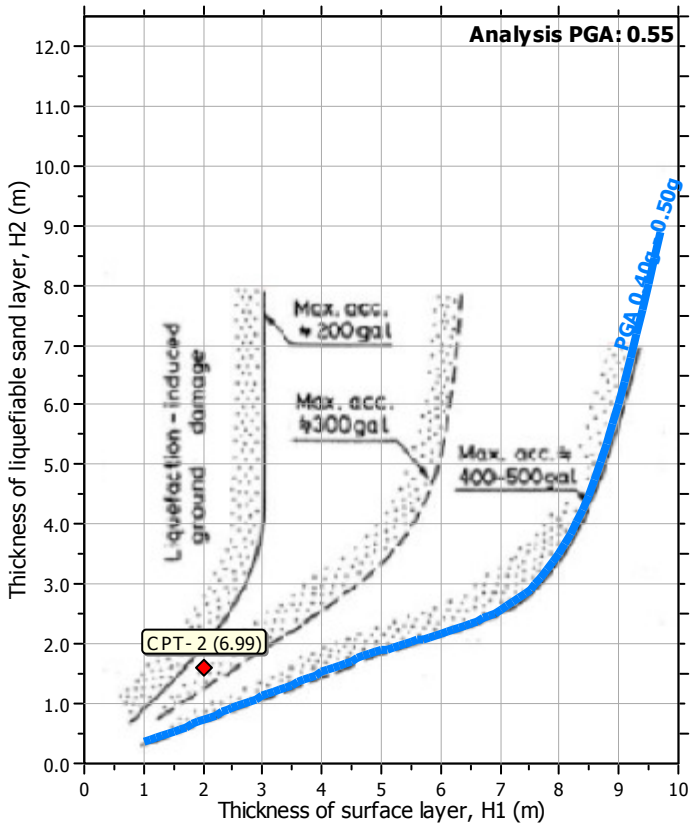
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



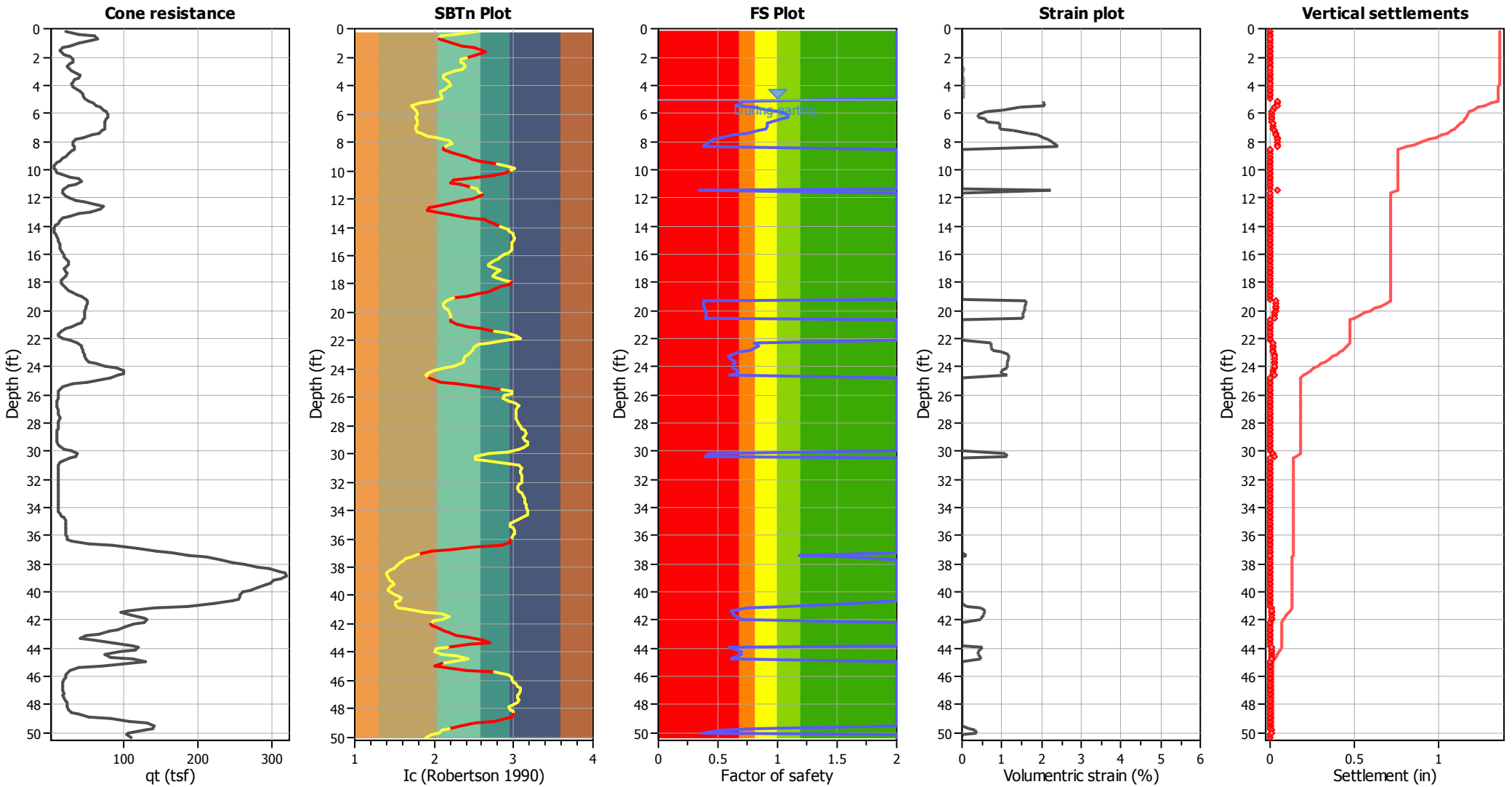




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

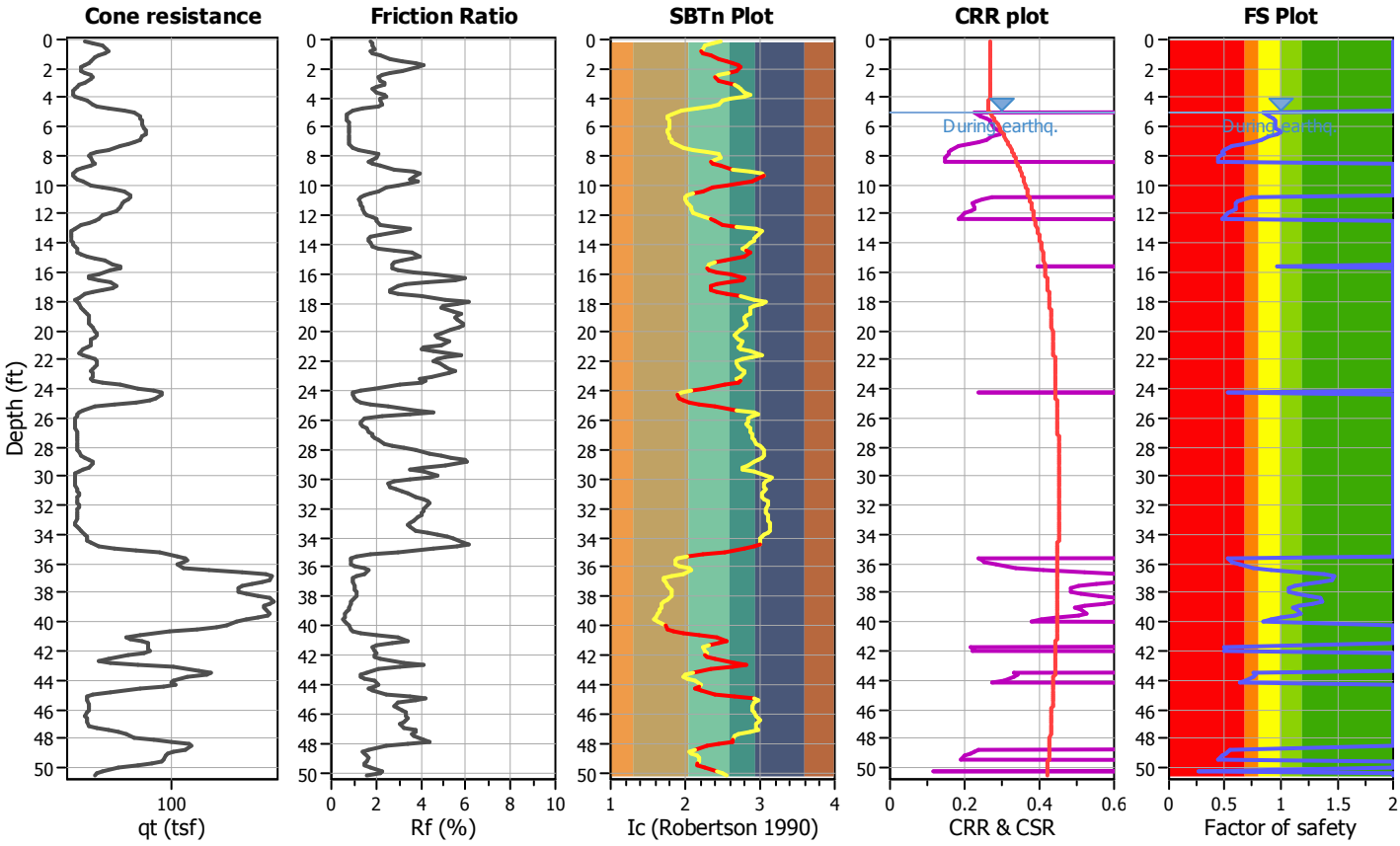
LIQUEFACTION ANALYSIS REPORT

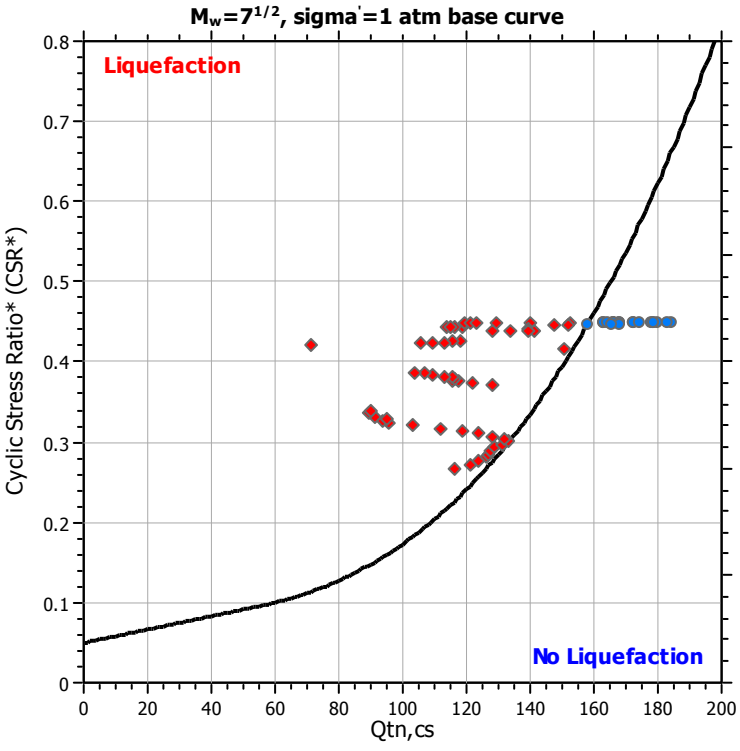
Project title : Shea Properties/Cypress **Location : Cypress, California**

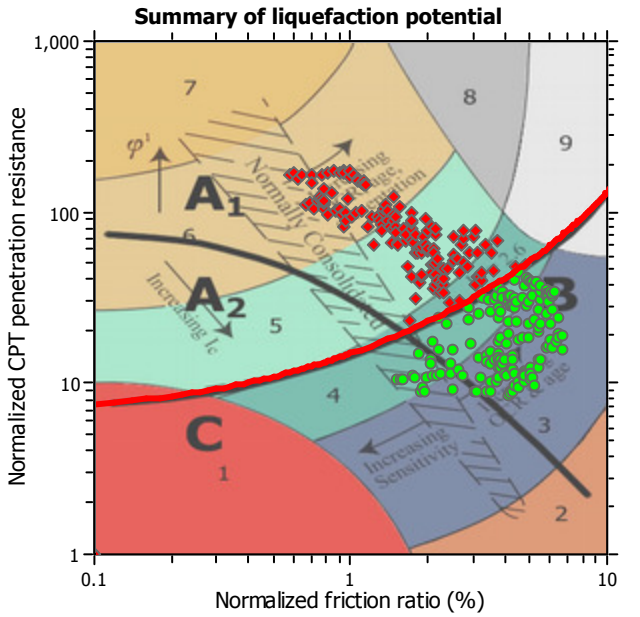
CPT file : CPT- 3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

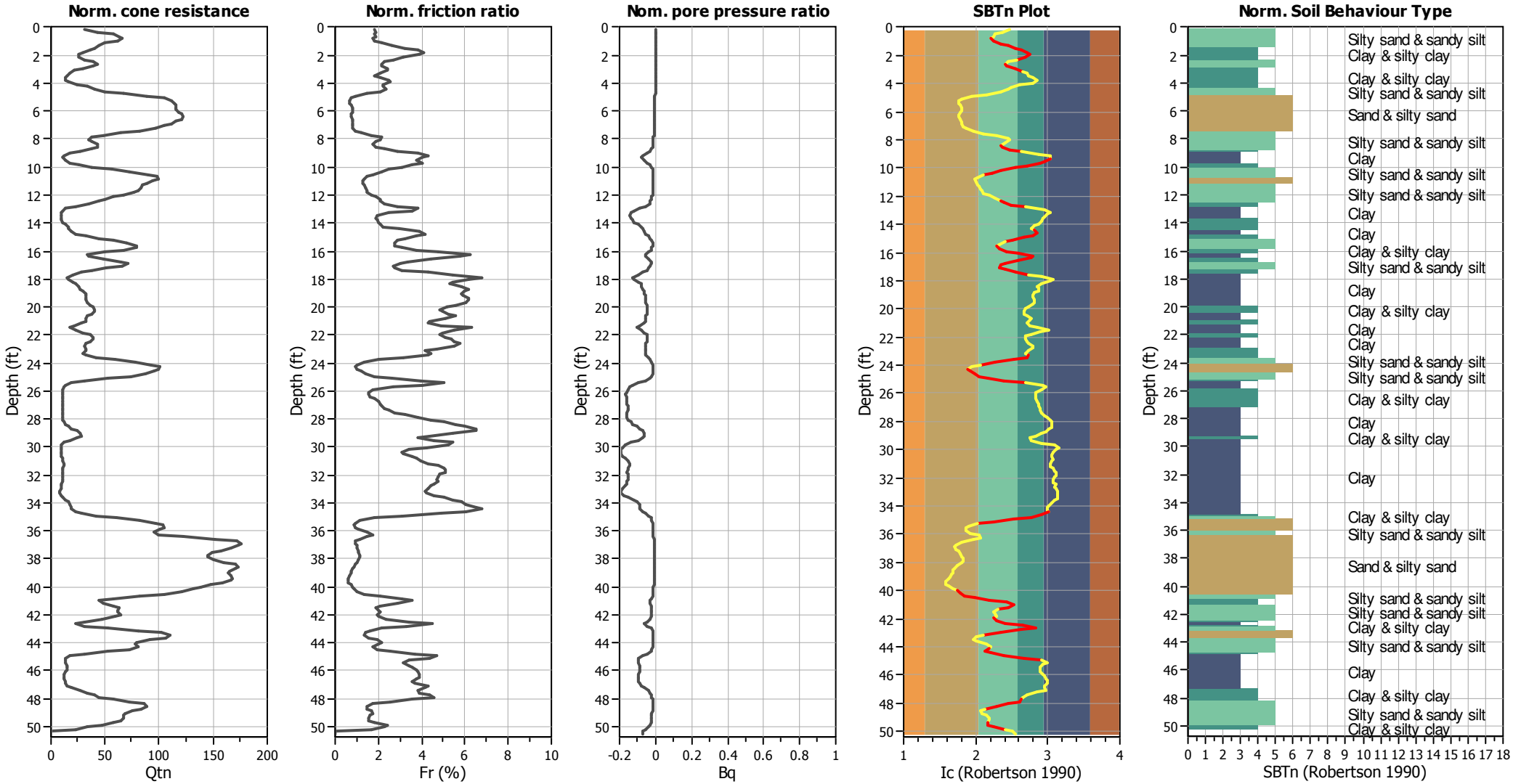






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



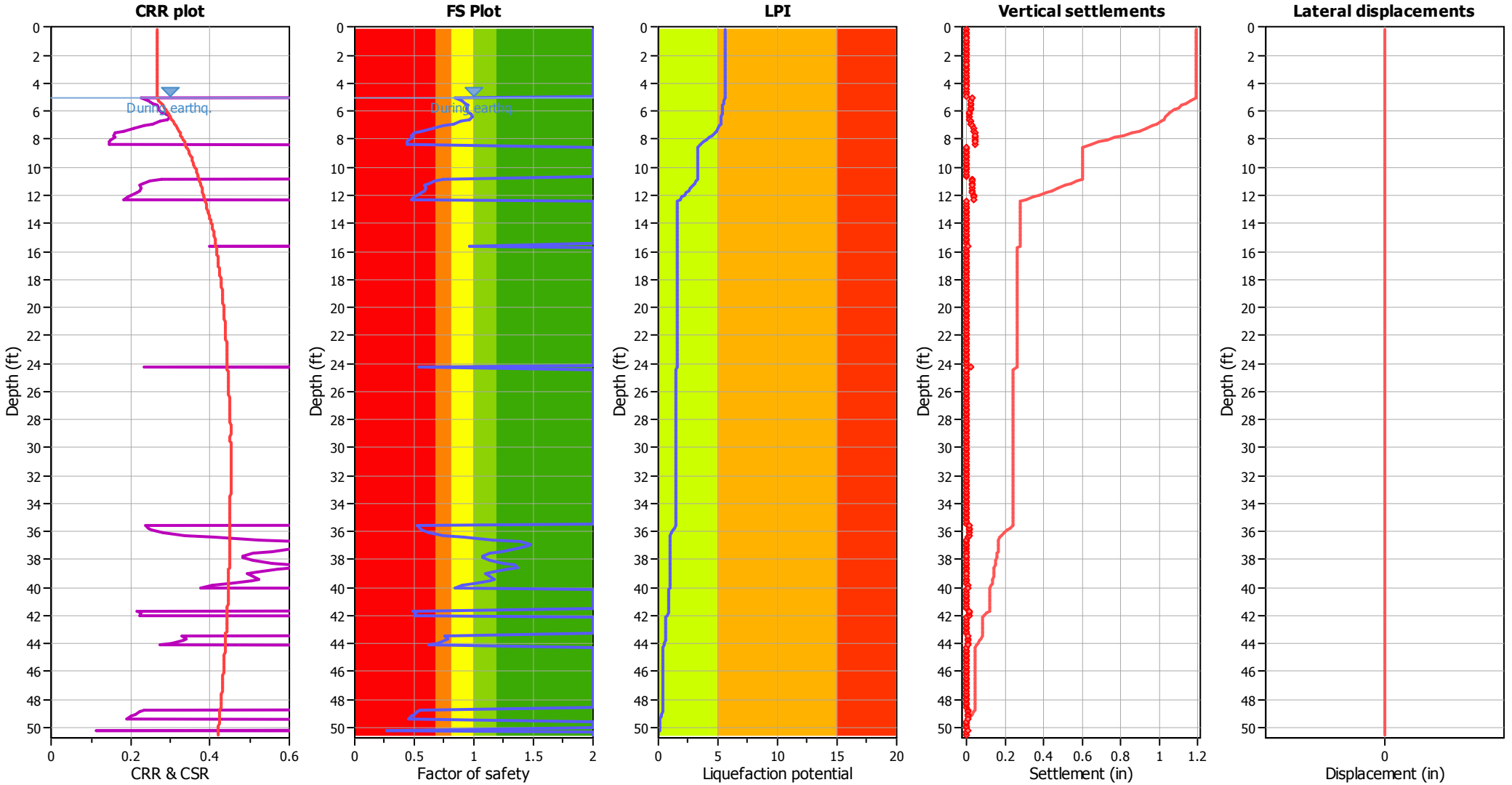
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

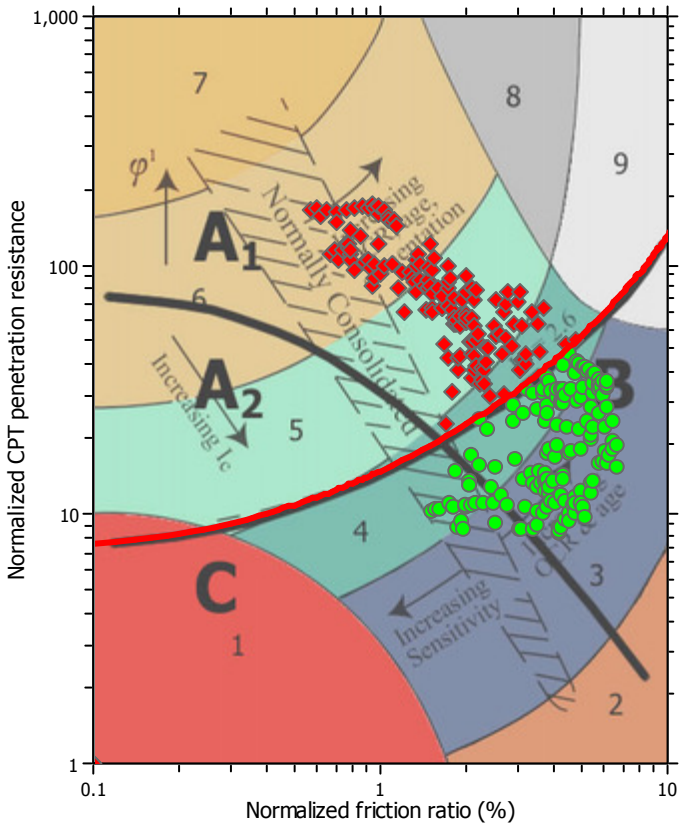
F.S. color scheme

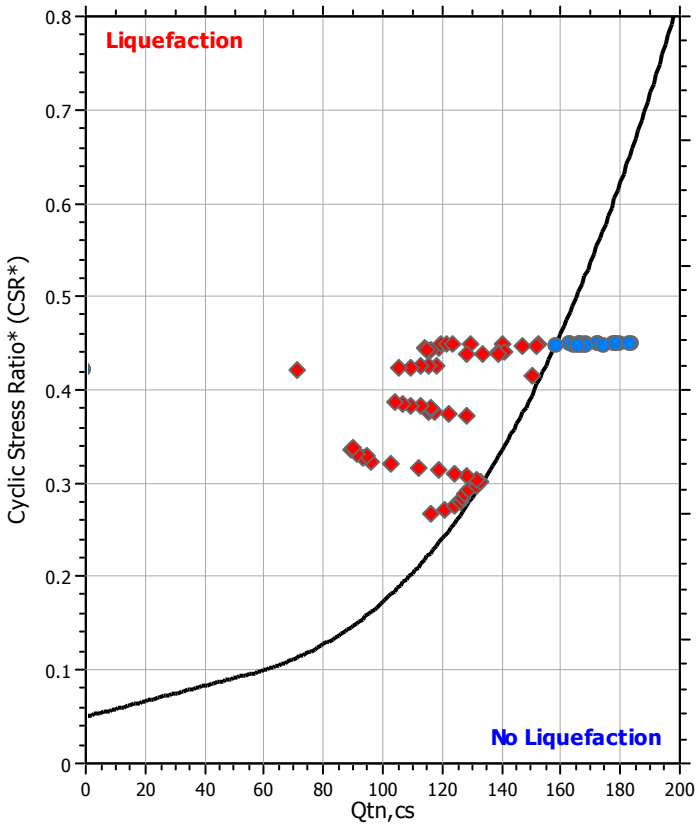
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

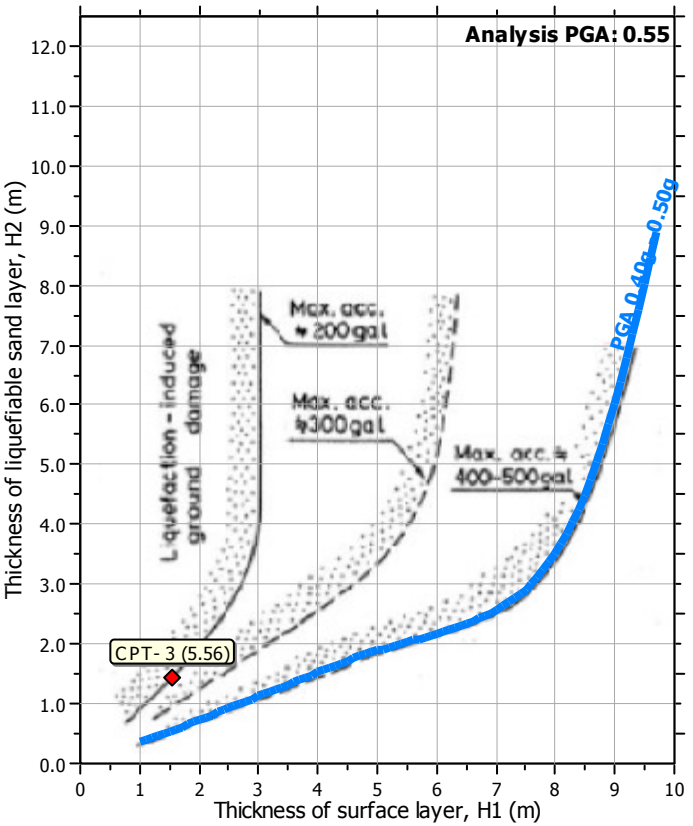
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



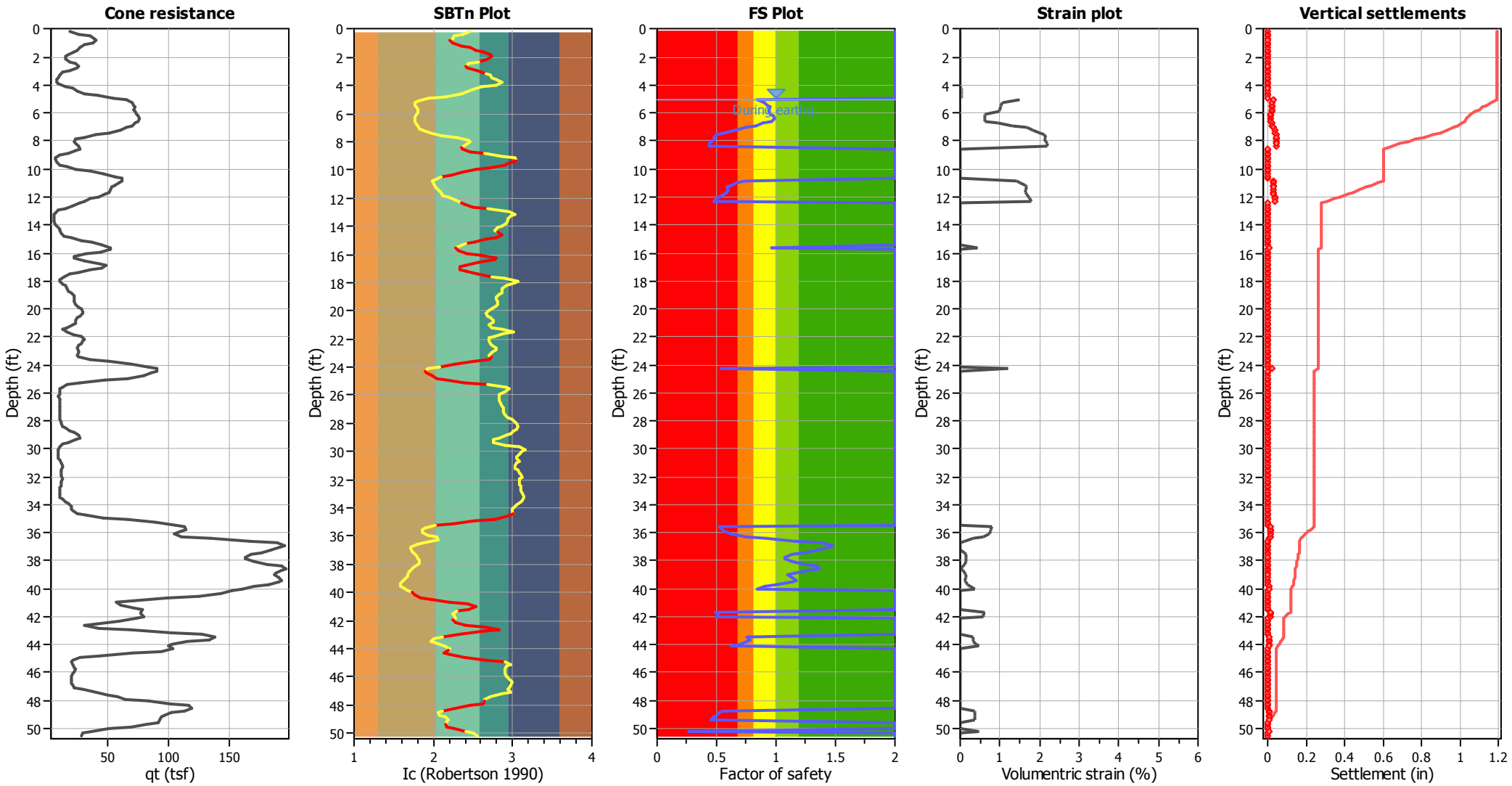




Input parameters and analysis data

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_σ 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)
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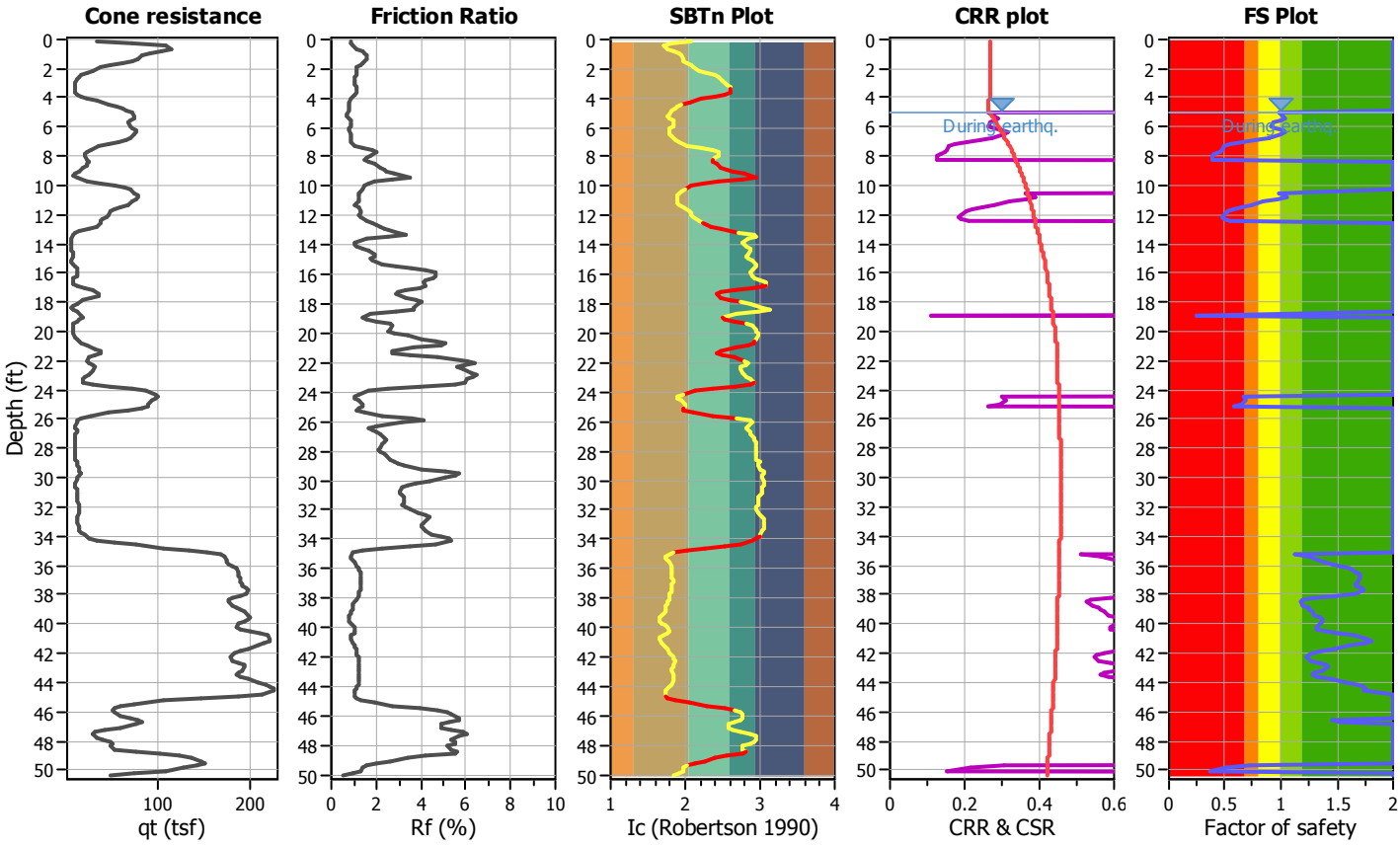
LIQUEFACTION ANALYSIS REPORT

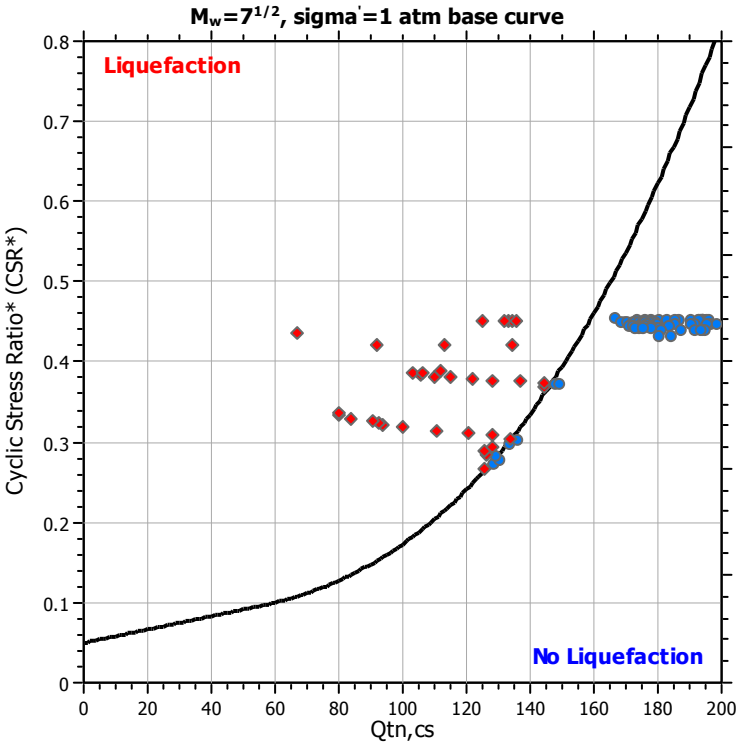
Project title : Shea Properties/Cypress **Location : Cypress, California**

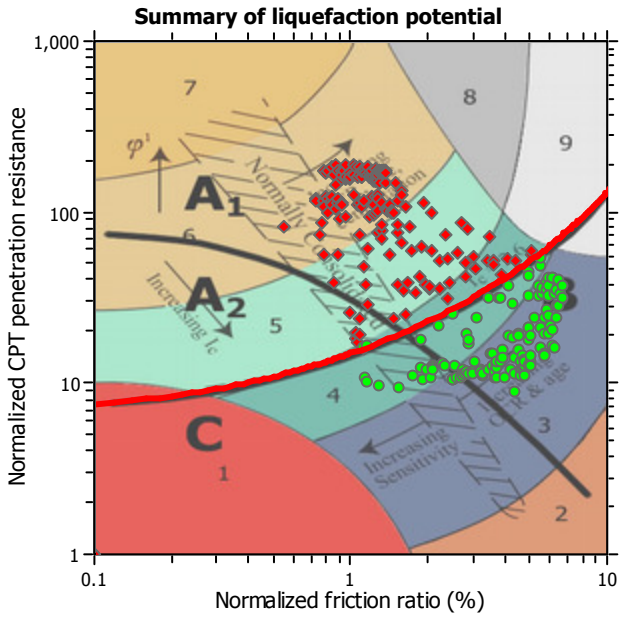
CPT file : CPT- 4

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

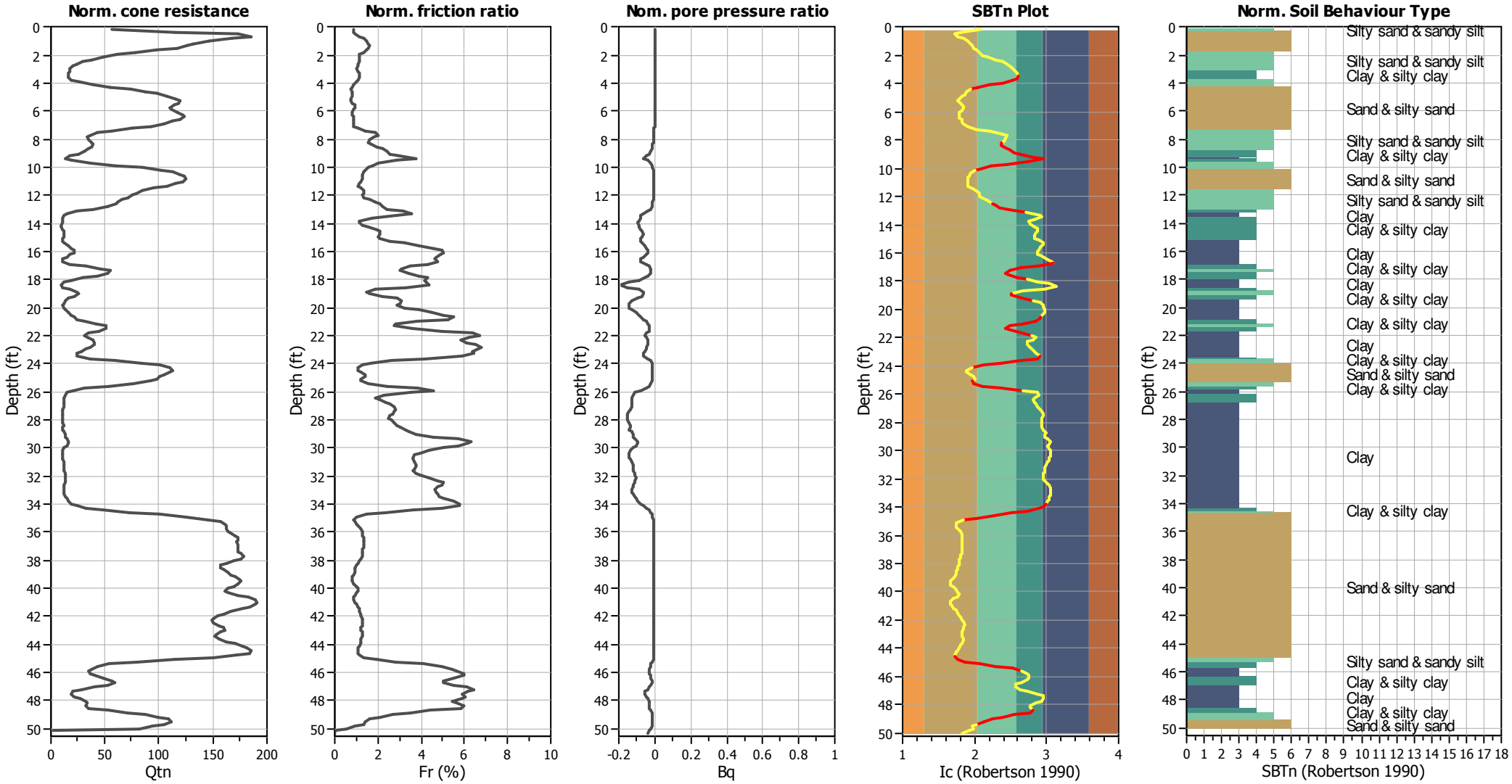






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



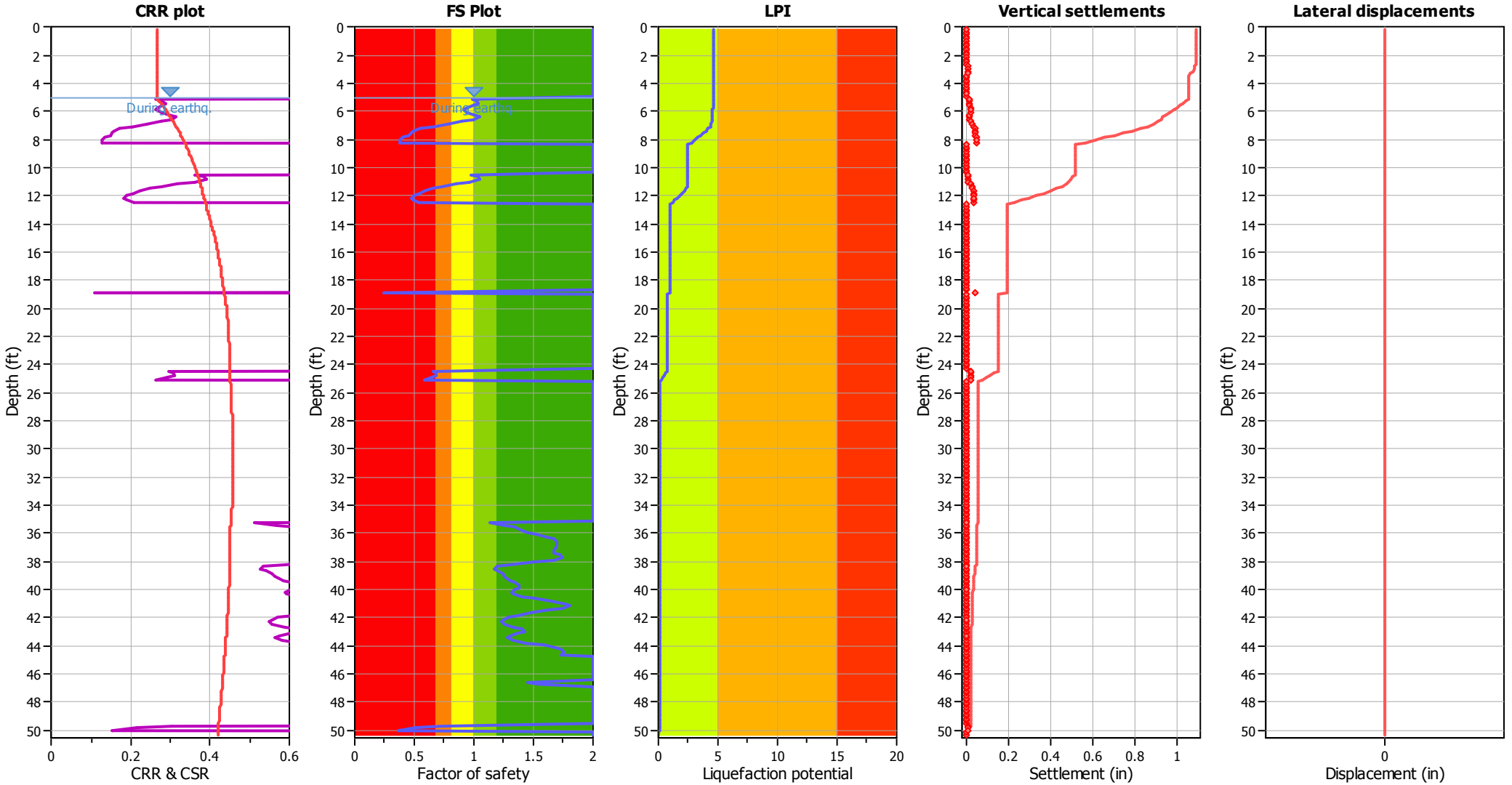
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

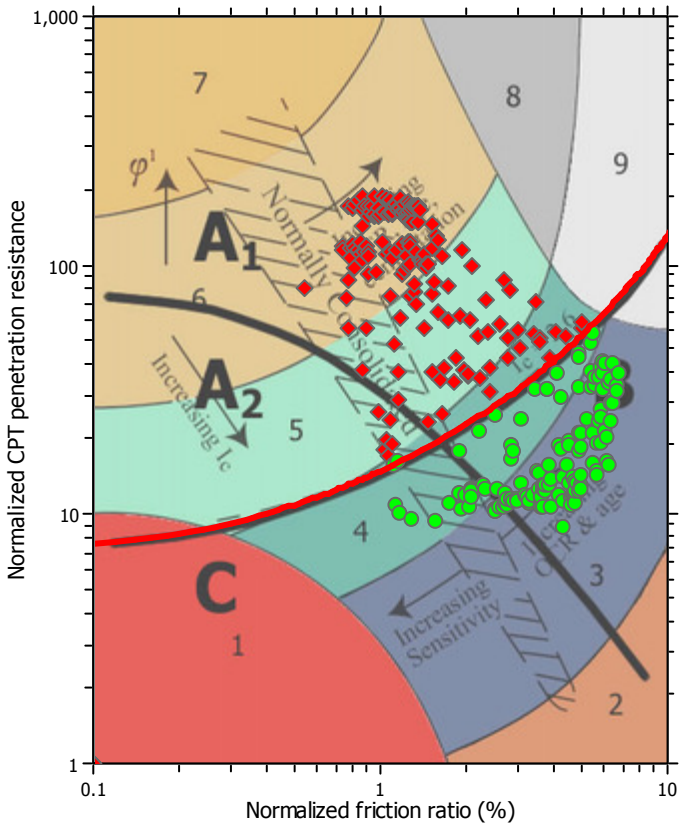
F.S. color scheme

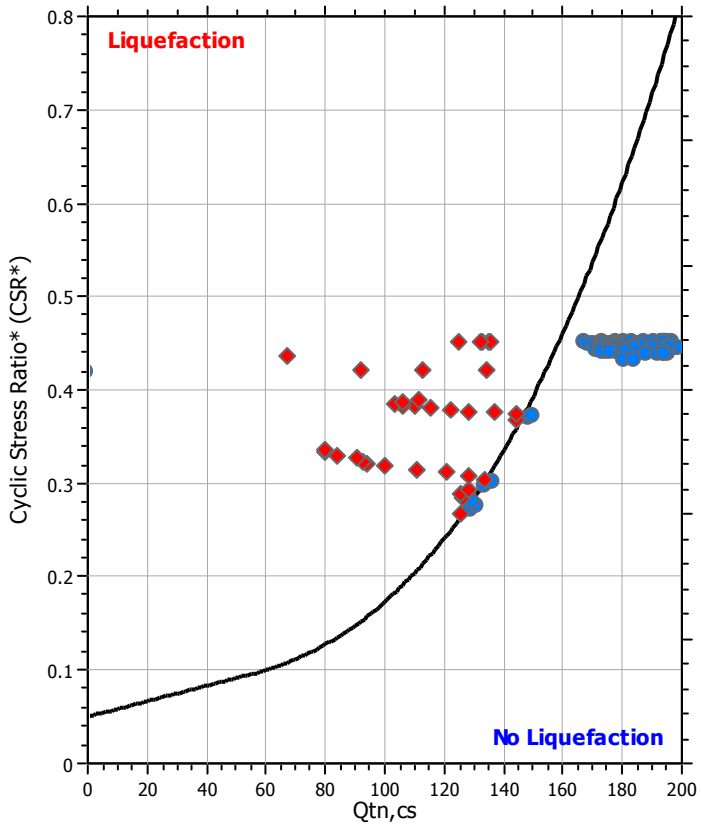
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

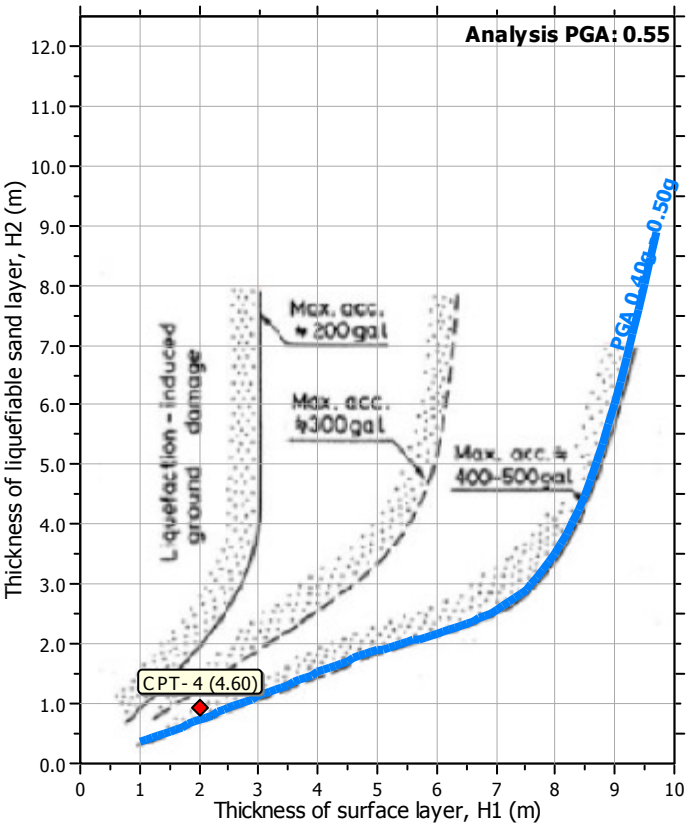
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



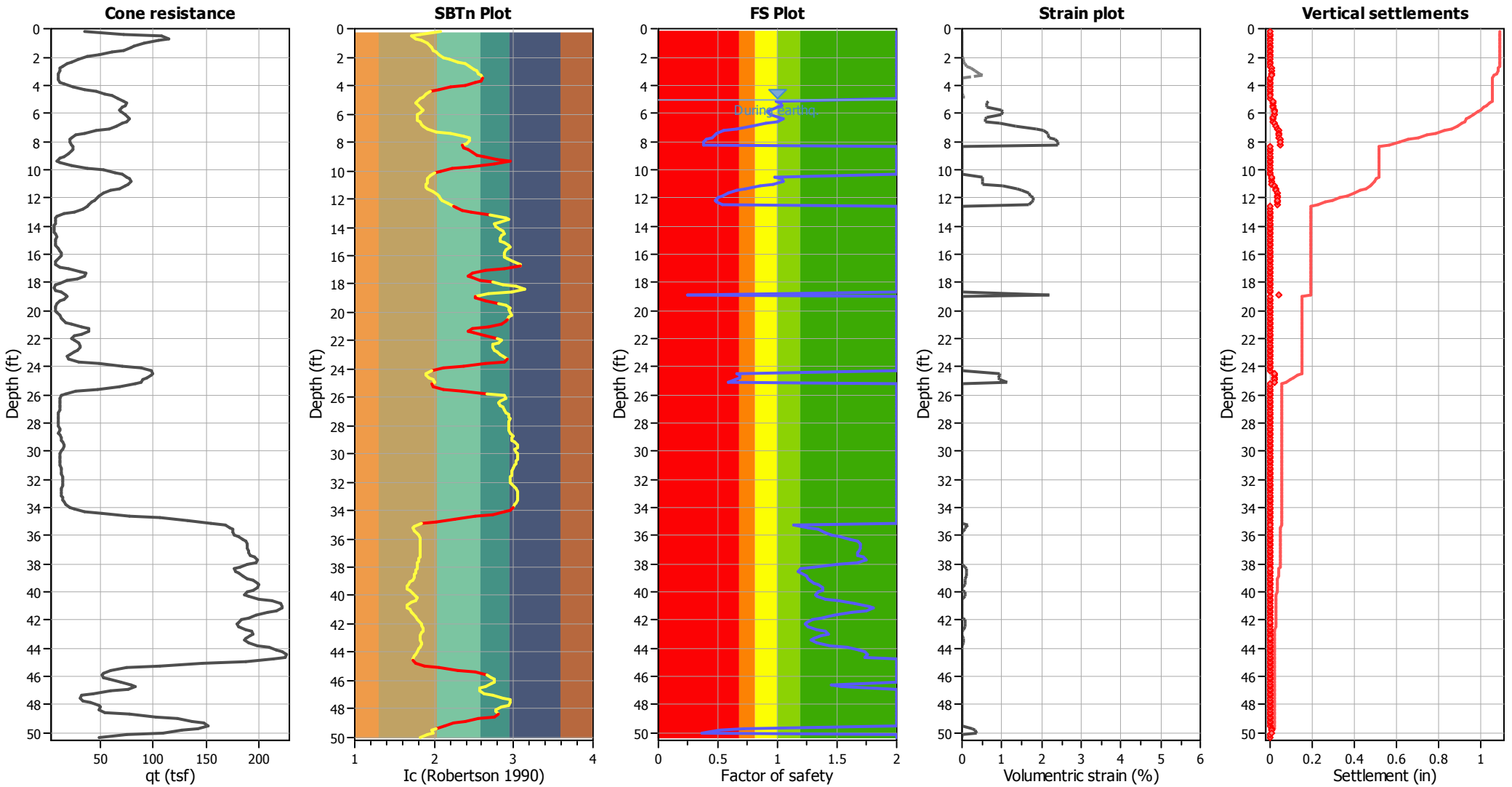




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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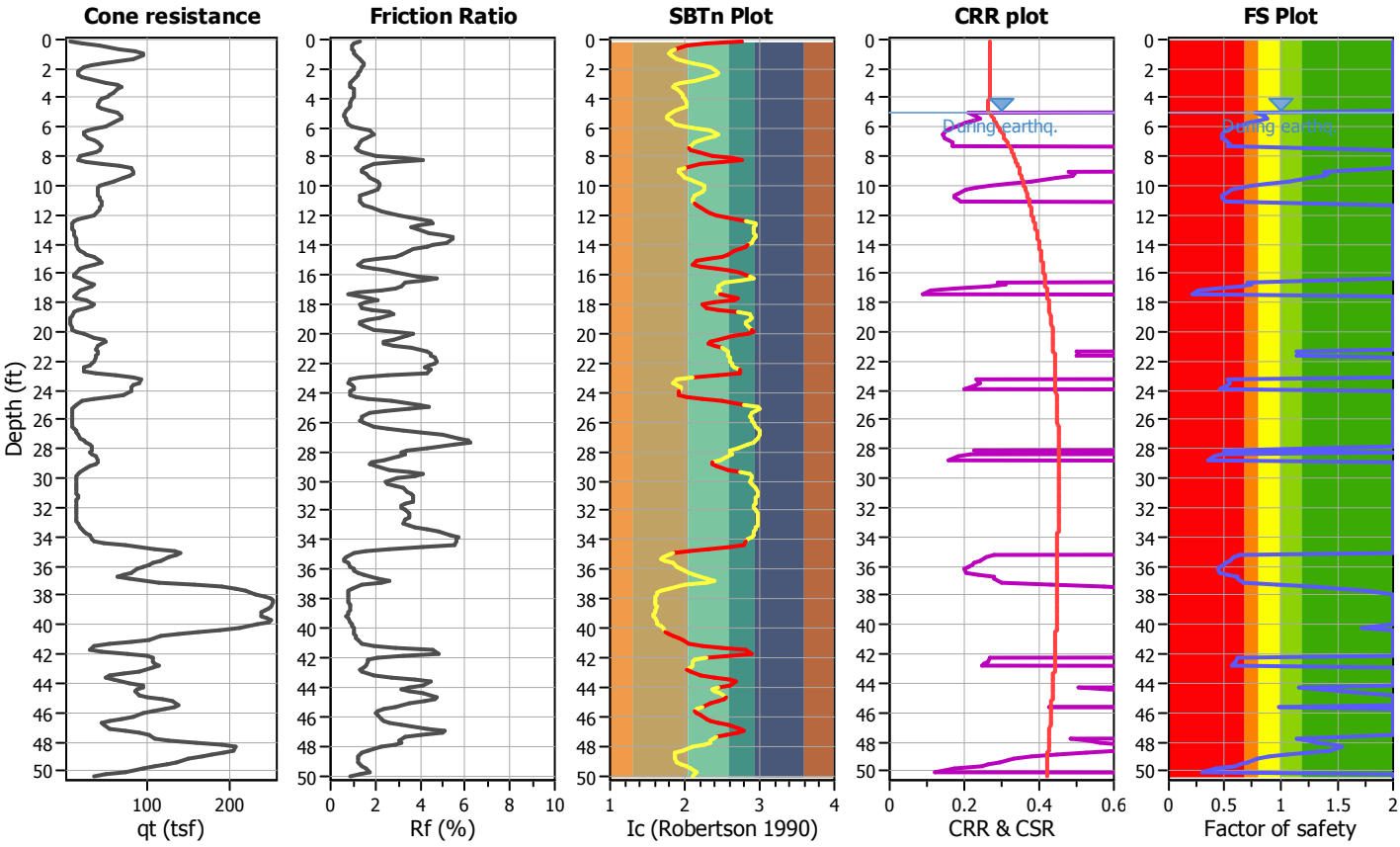
LIQUEFACTION ANALYSIS REPORT

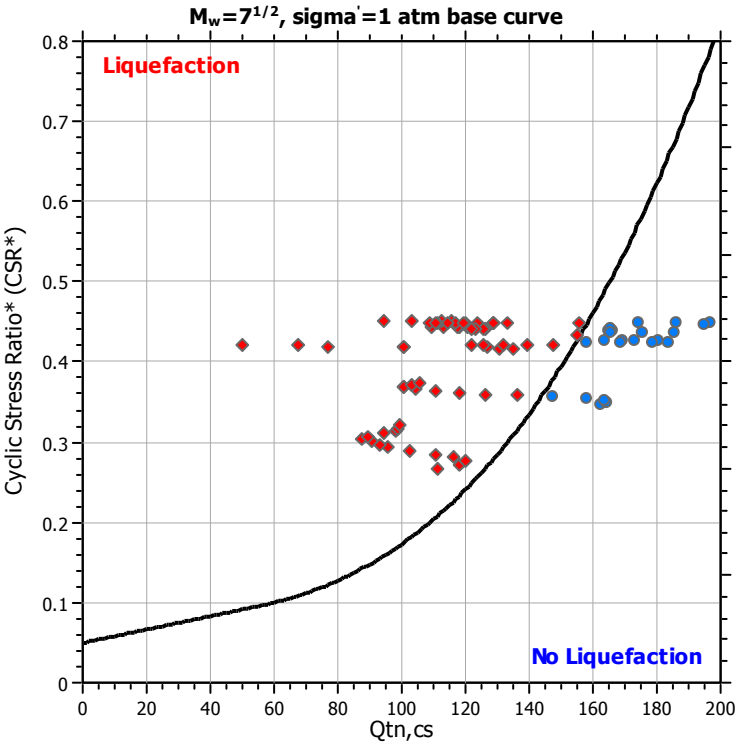
Project title : Shea Properties/Cypress **Location : Cypress, California**

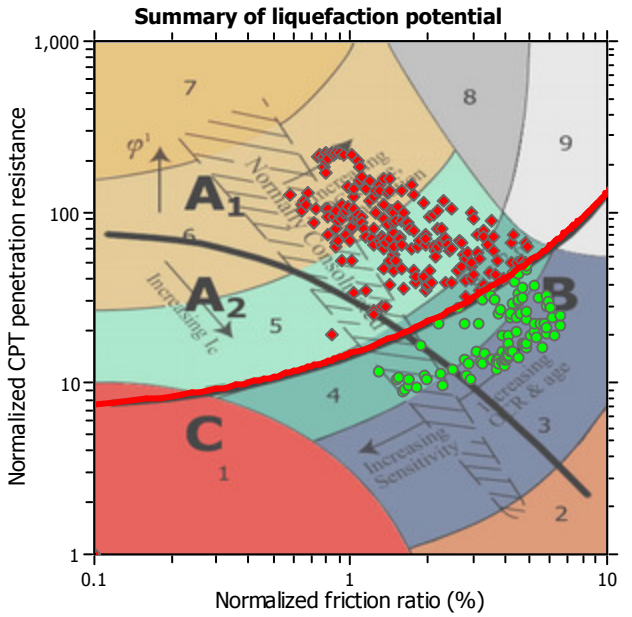
CPT file : CPT- 5

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

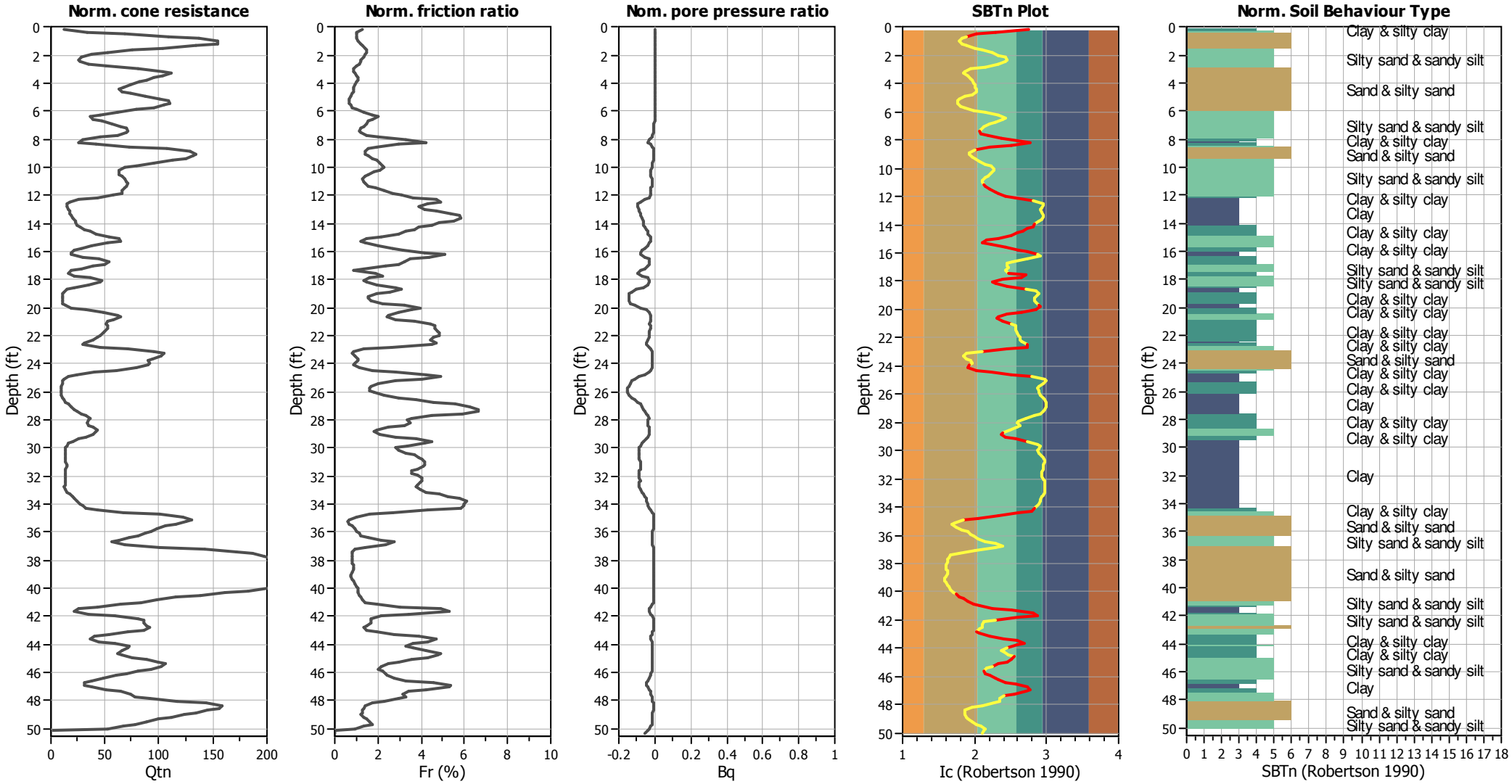






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



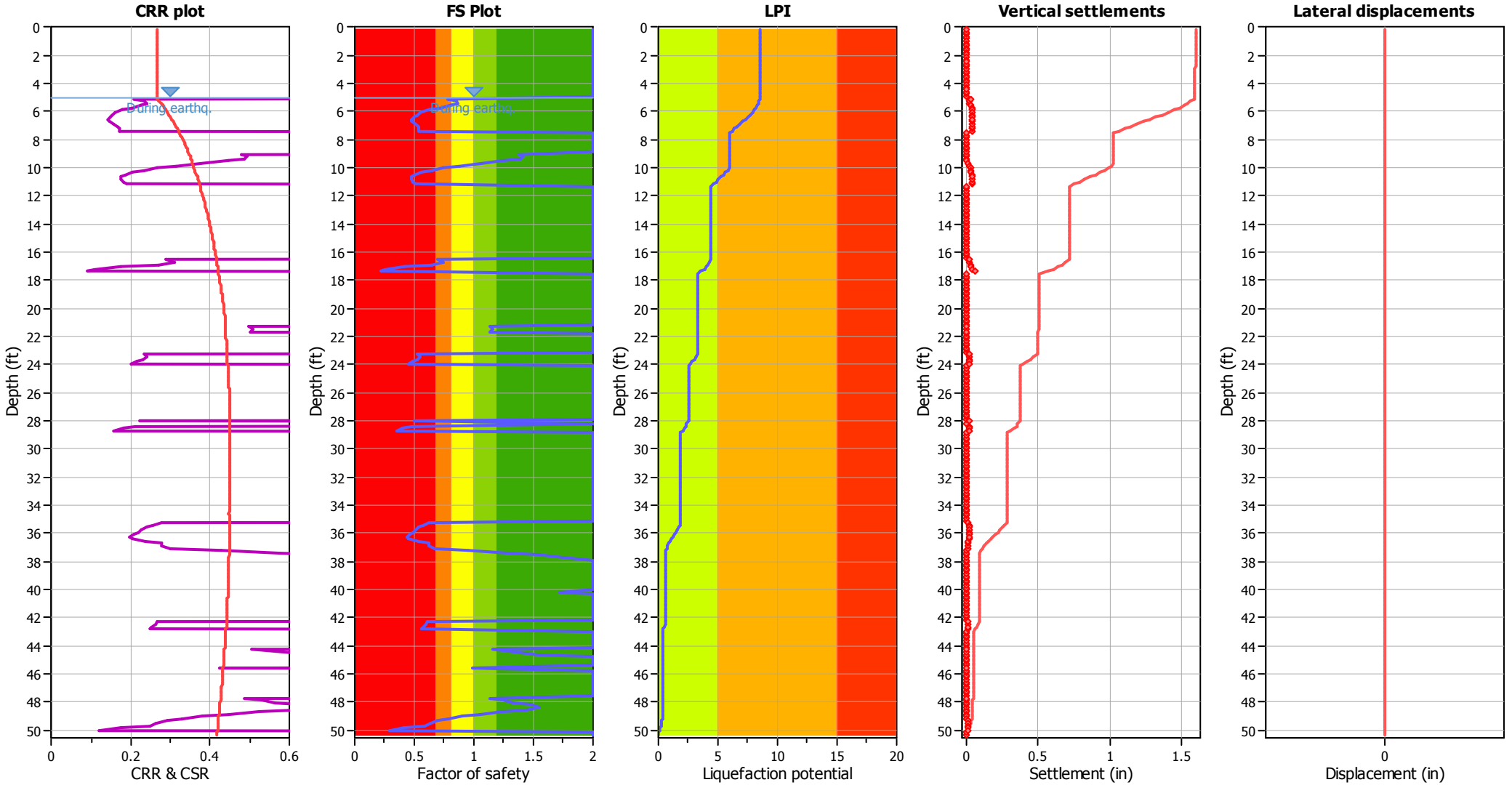
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

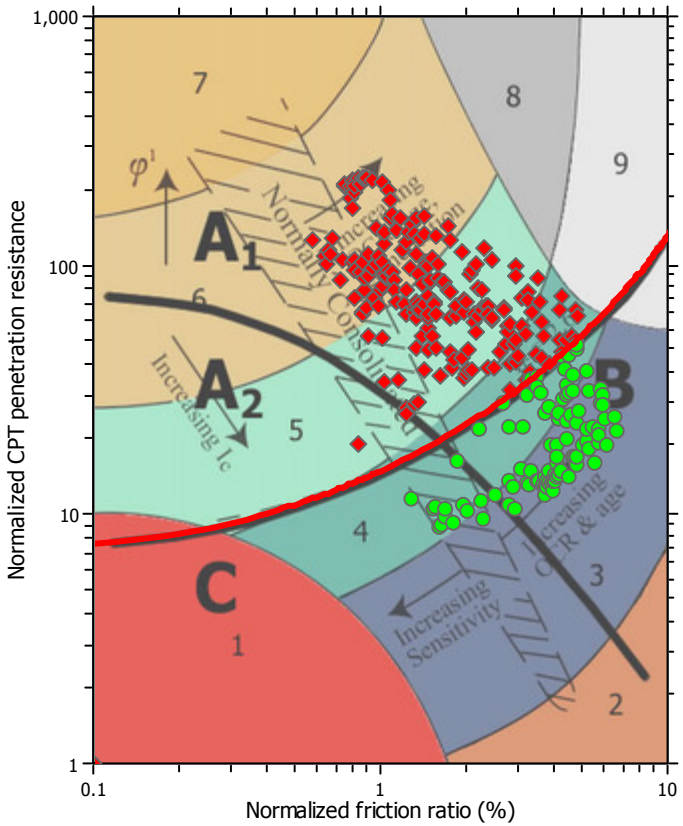
F.S. color scheme

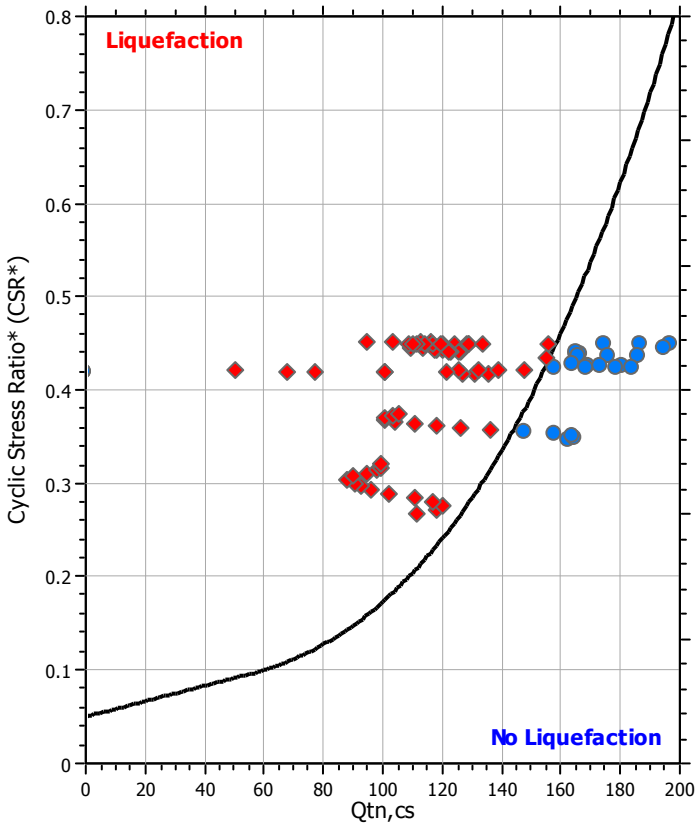
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

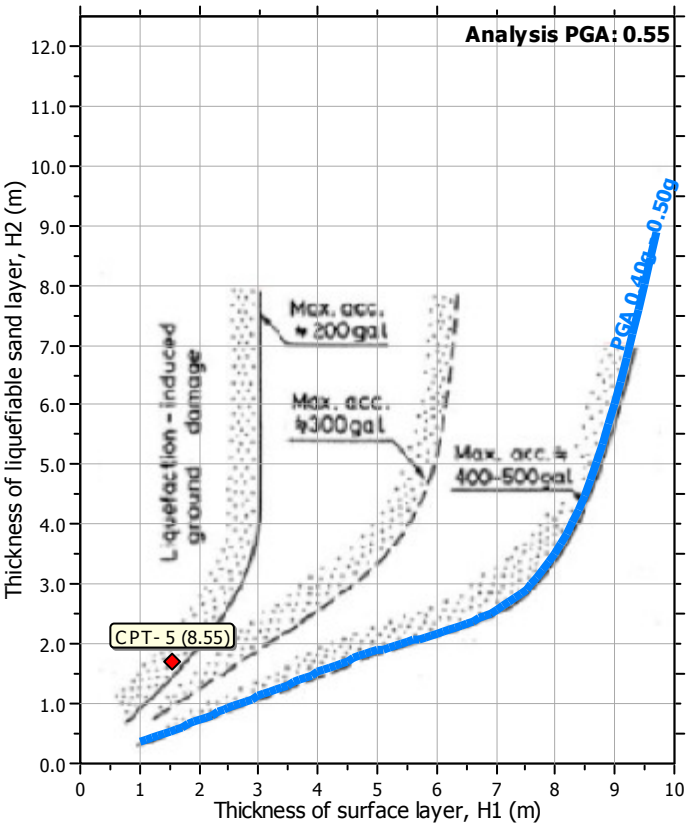
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



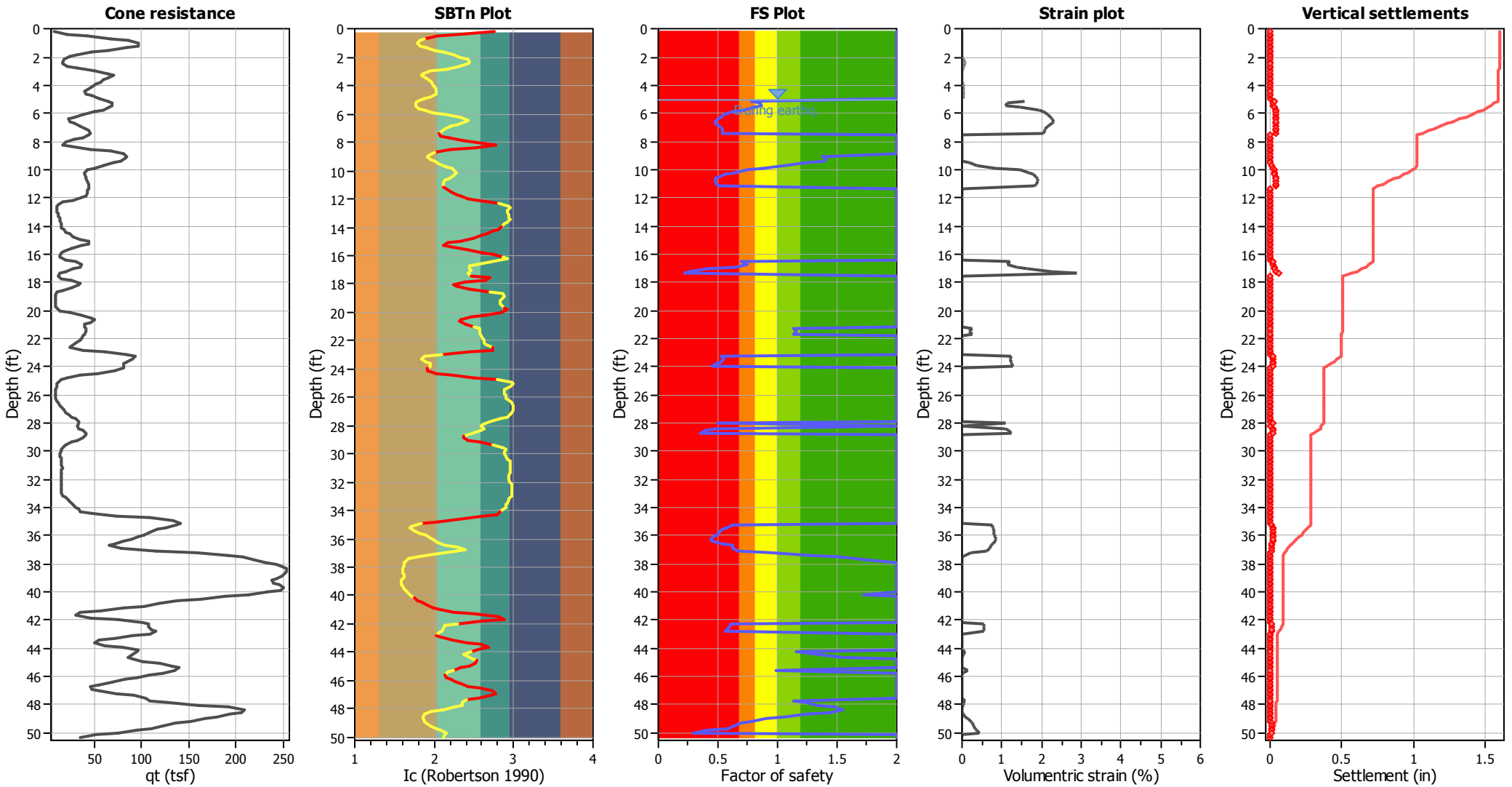




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

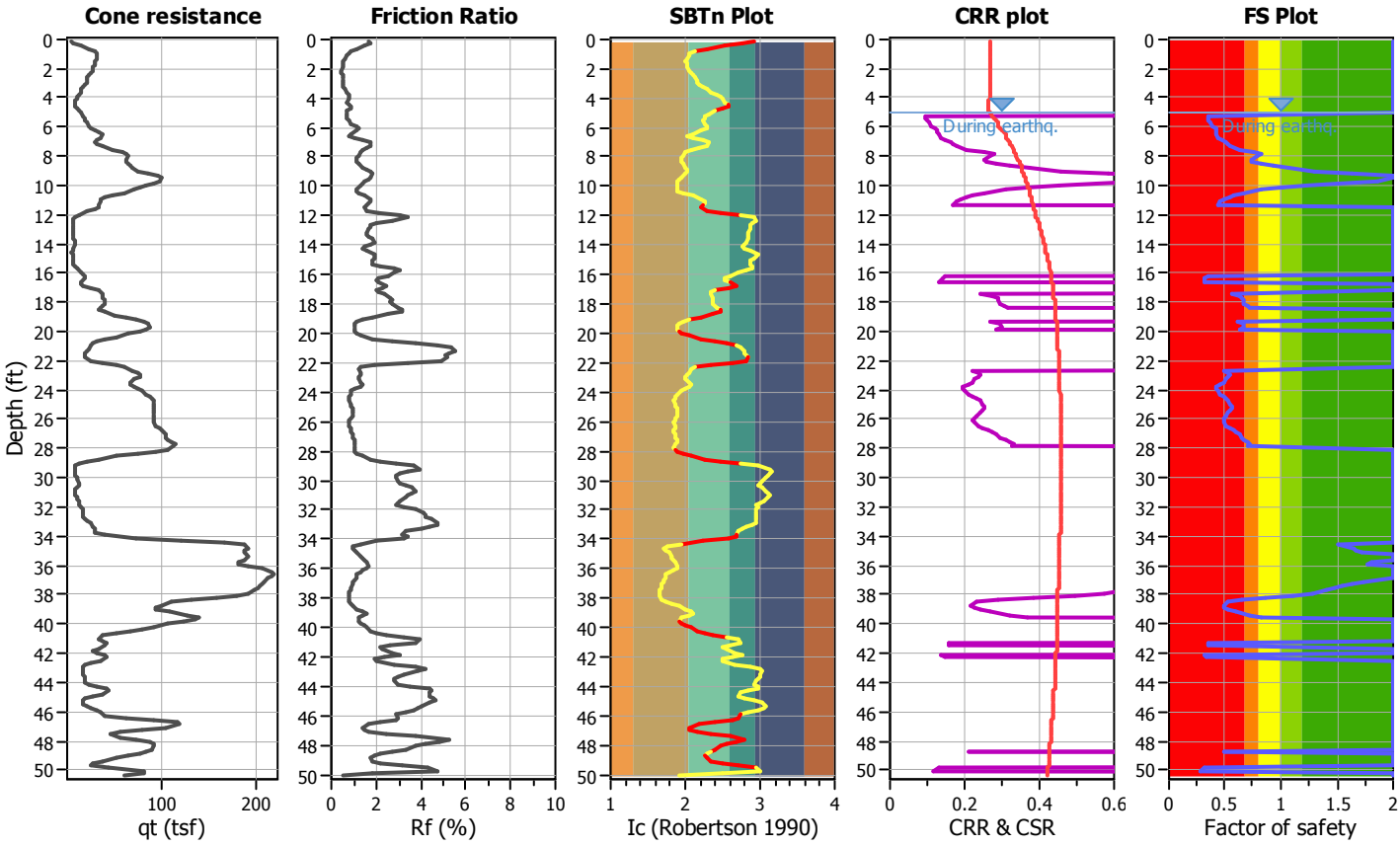
LIQUEFACTION ANALYSIS REPORT

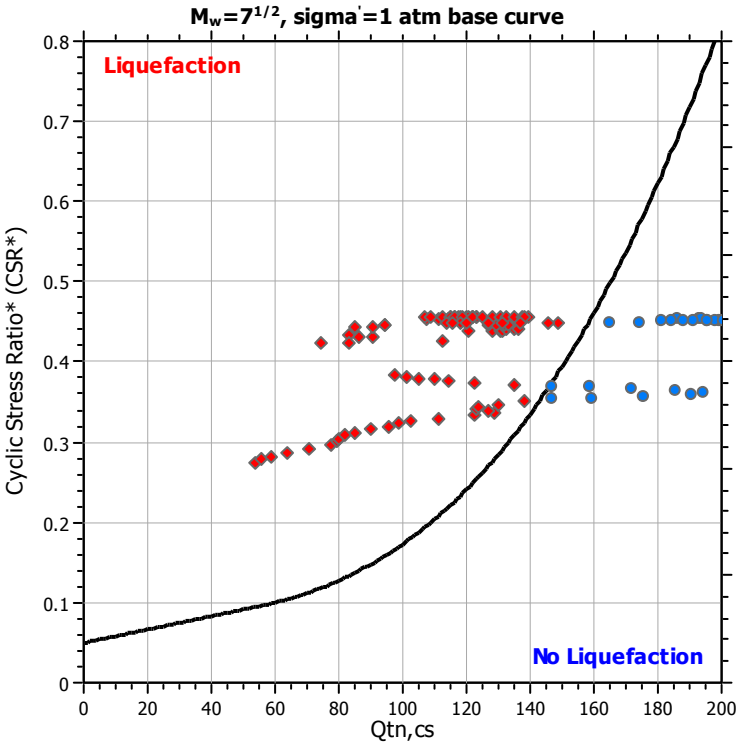
Project title : Shea Properties/Cypress **Location : Cypress, California**

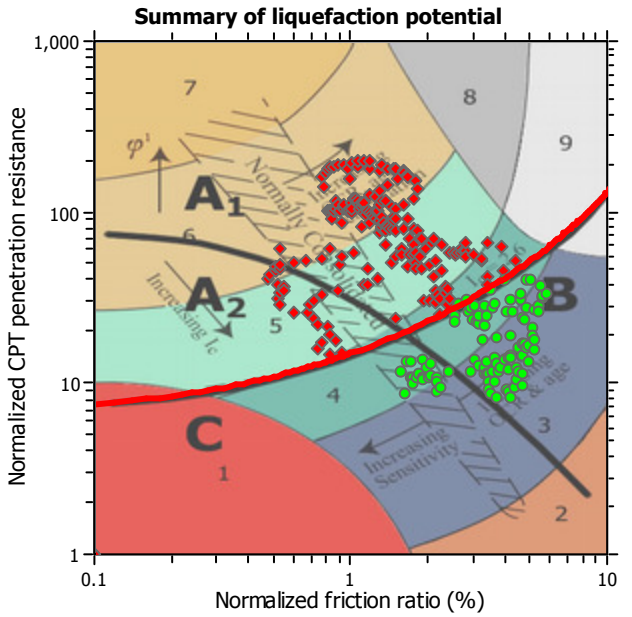
CPT file : CPT- 6

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

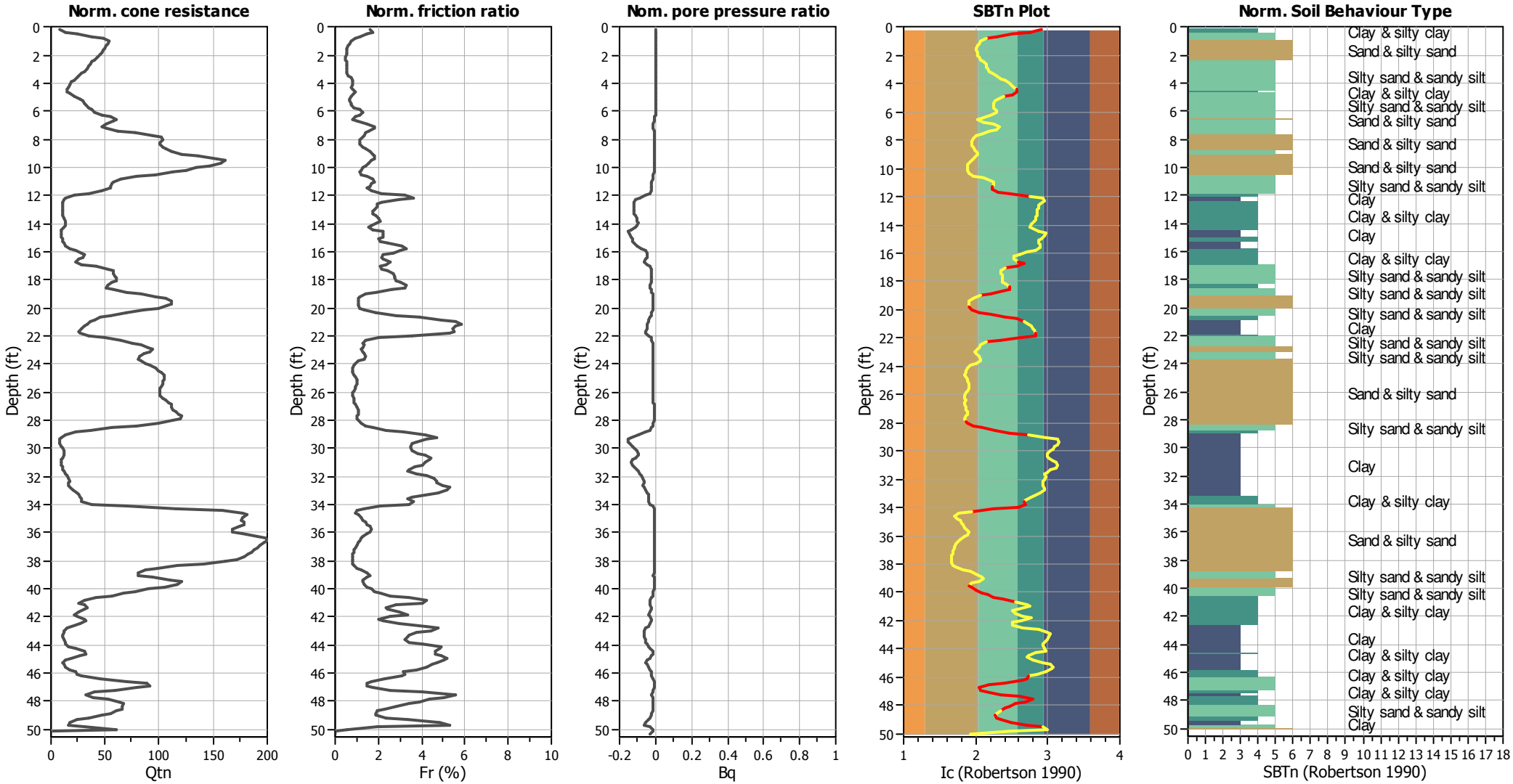






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



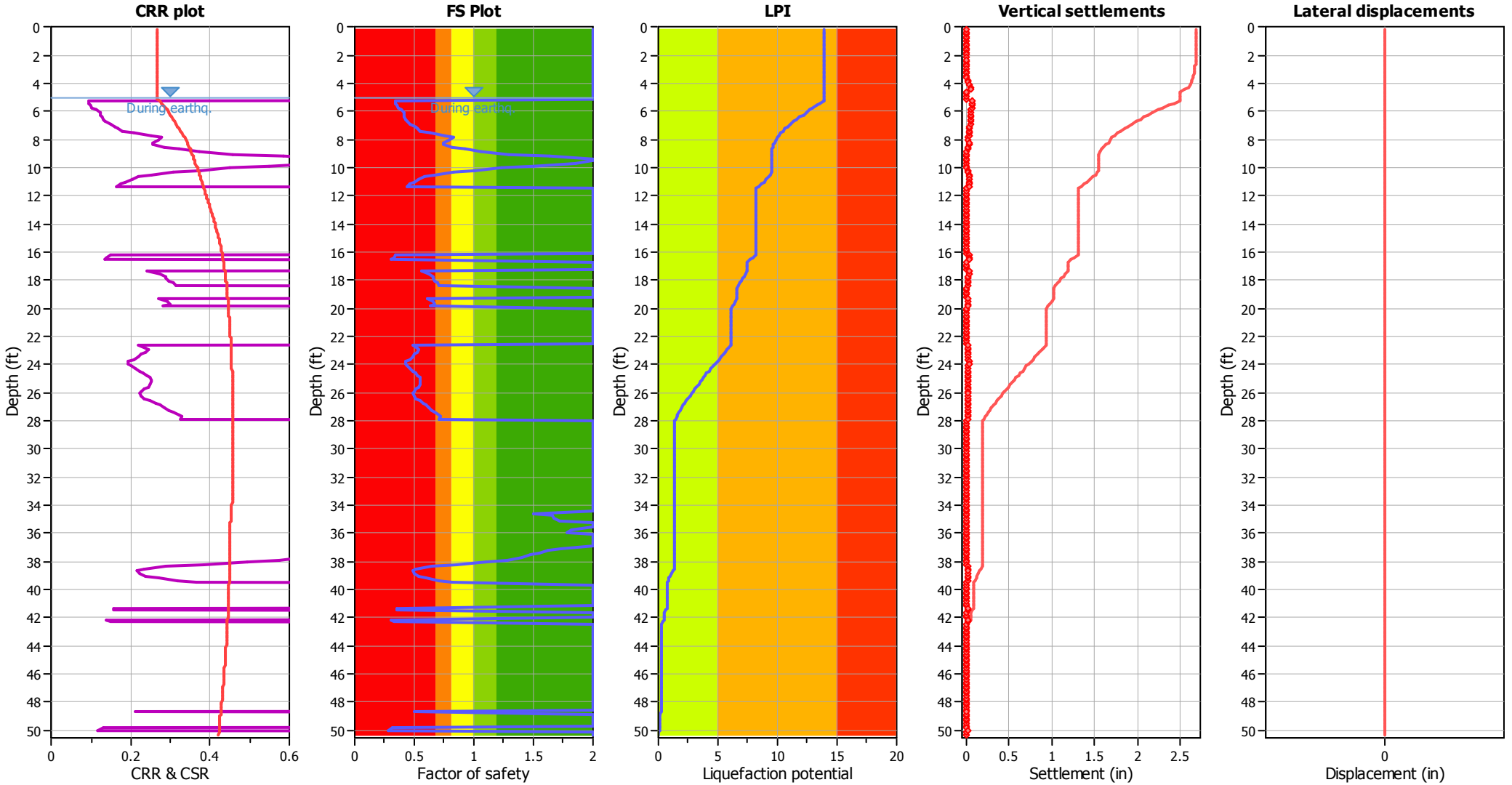
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

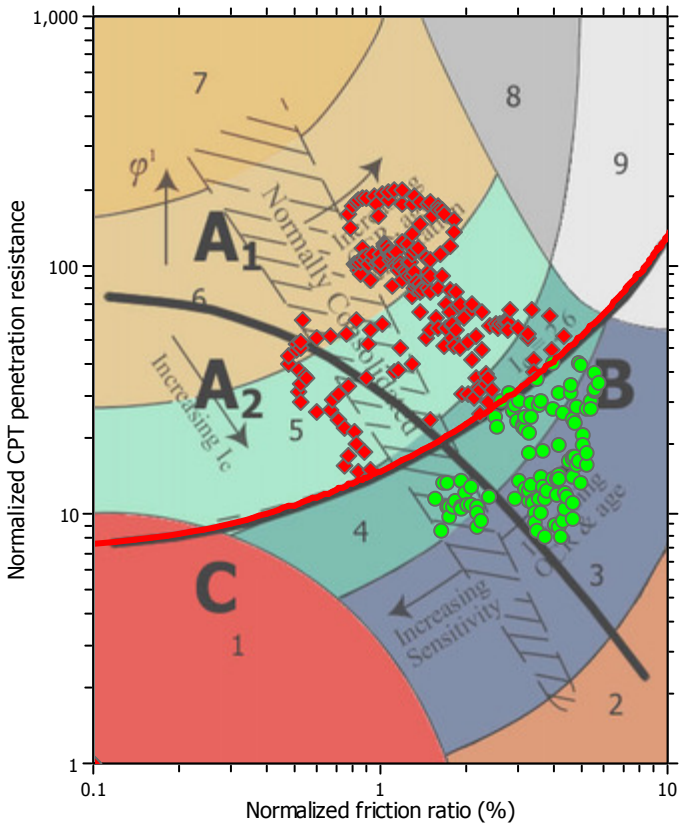
F.S. color scheme

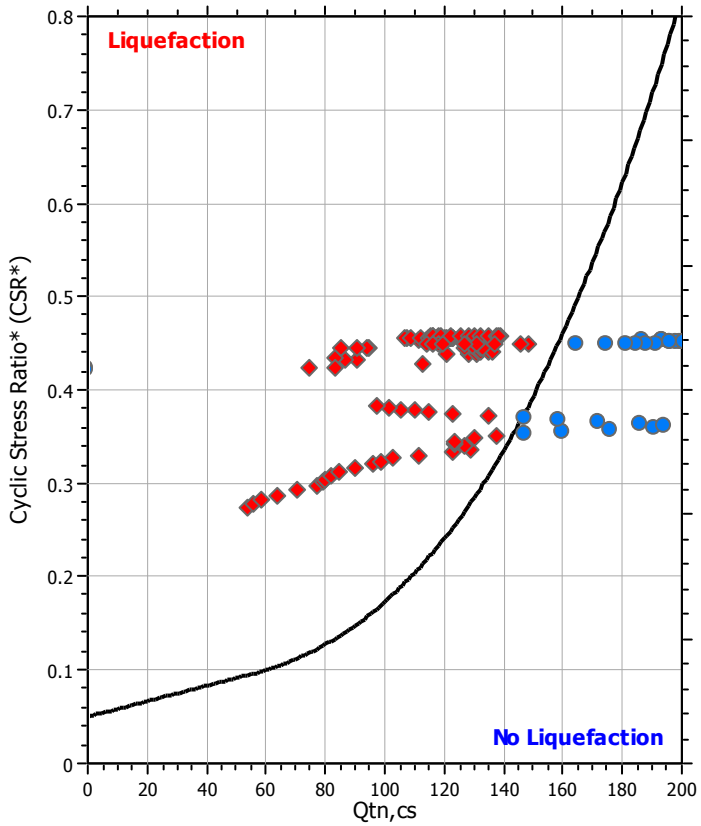
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

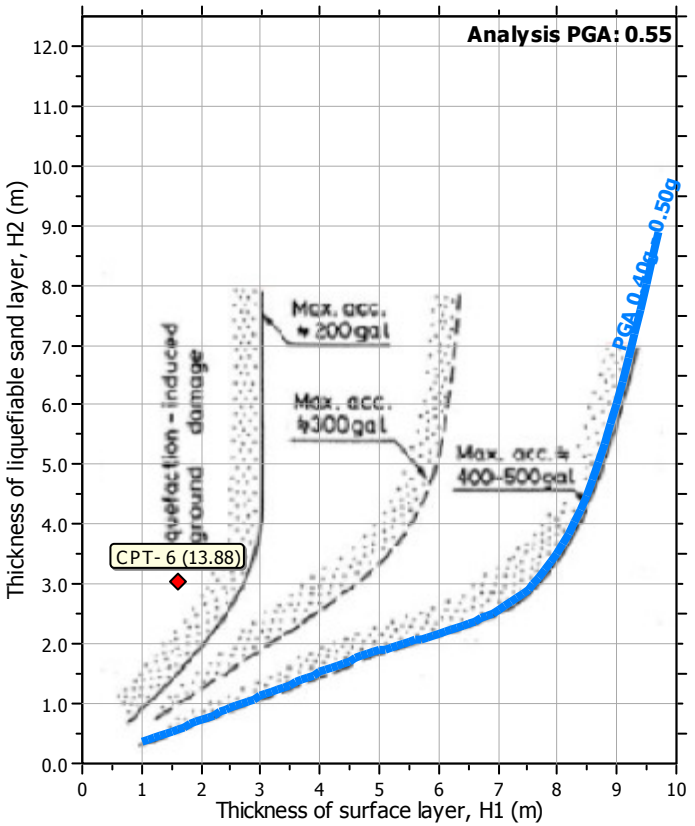
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



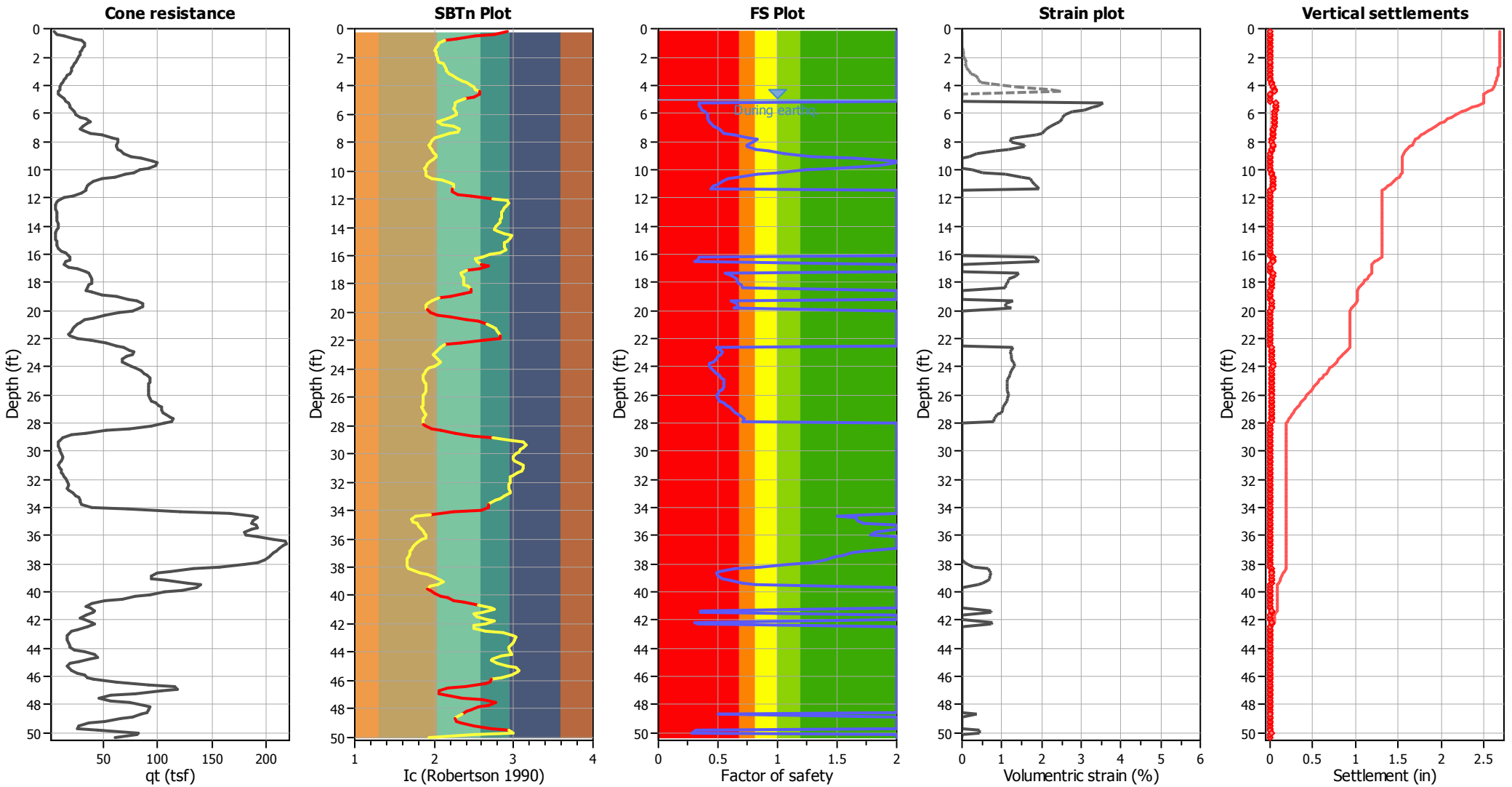




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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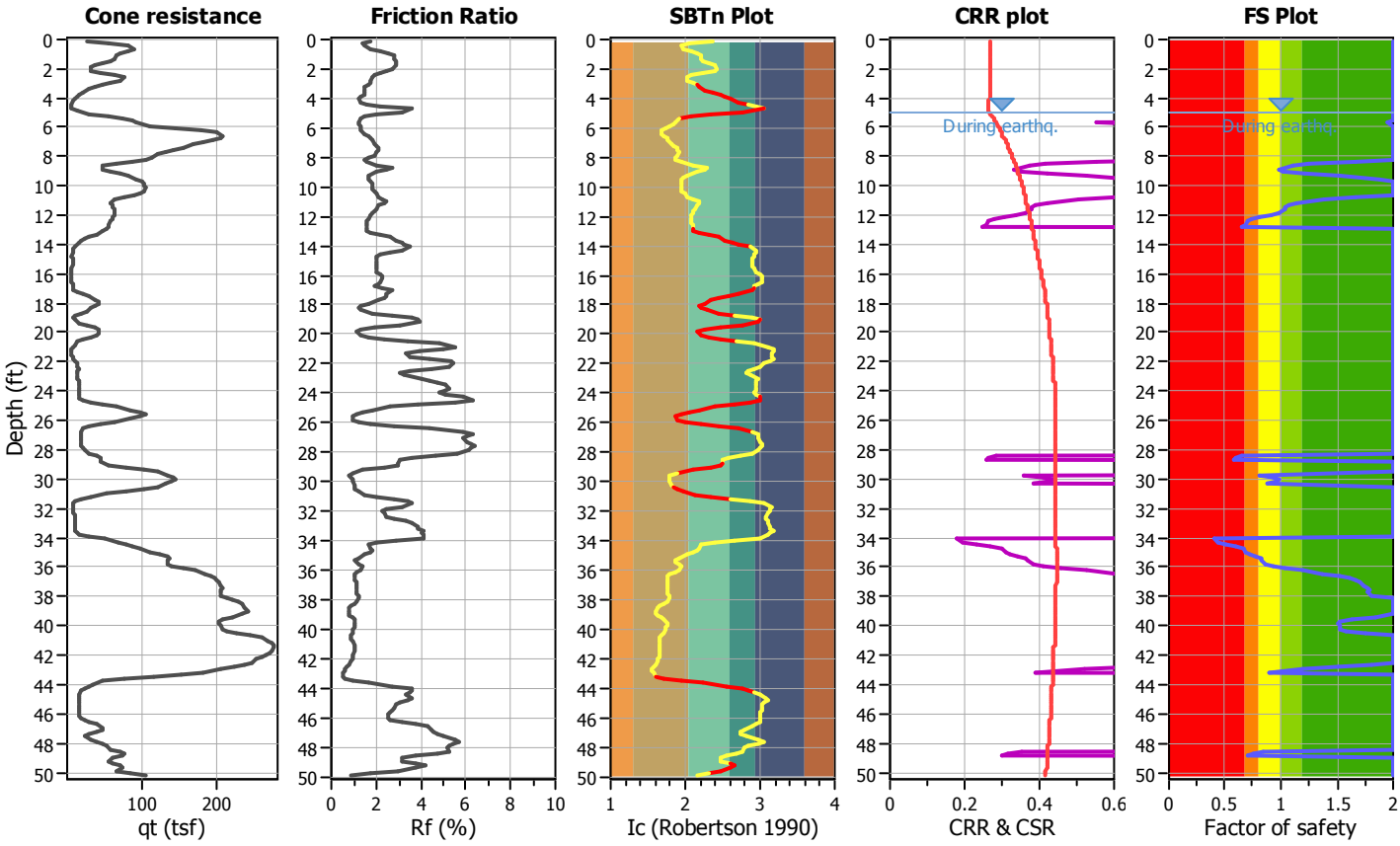
LIQUEFACTION ANALYSIS REPORT

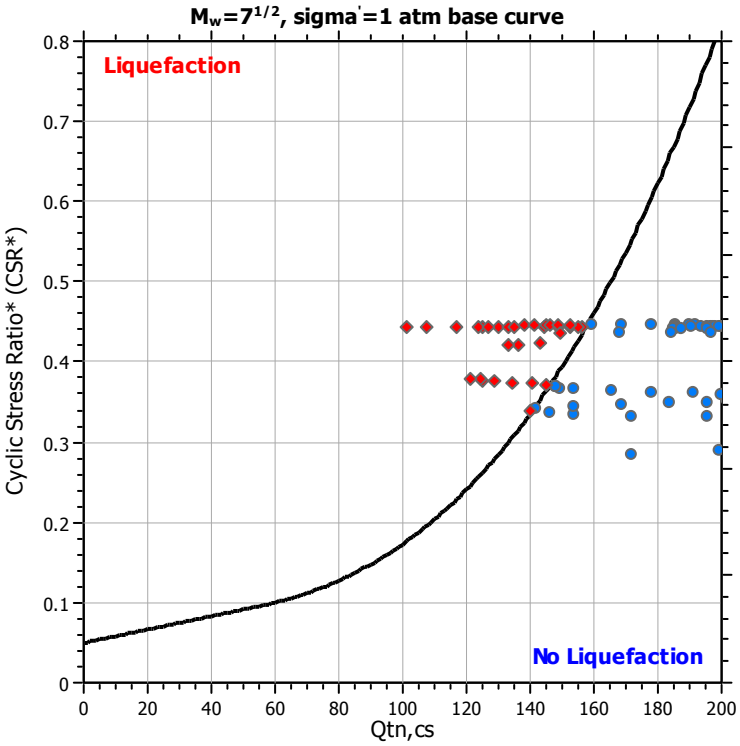
Project title : Shea Properties/Cypress **Location : Cypress, California**

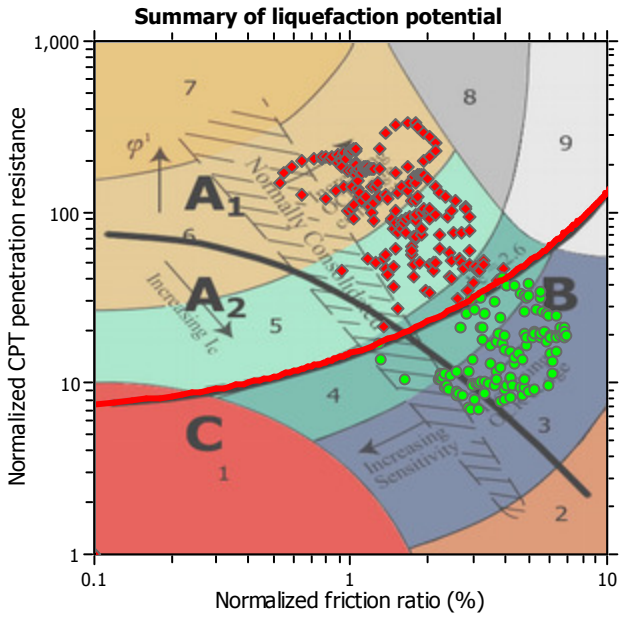
CPT file : CPT- 7

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

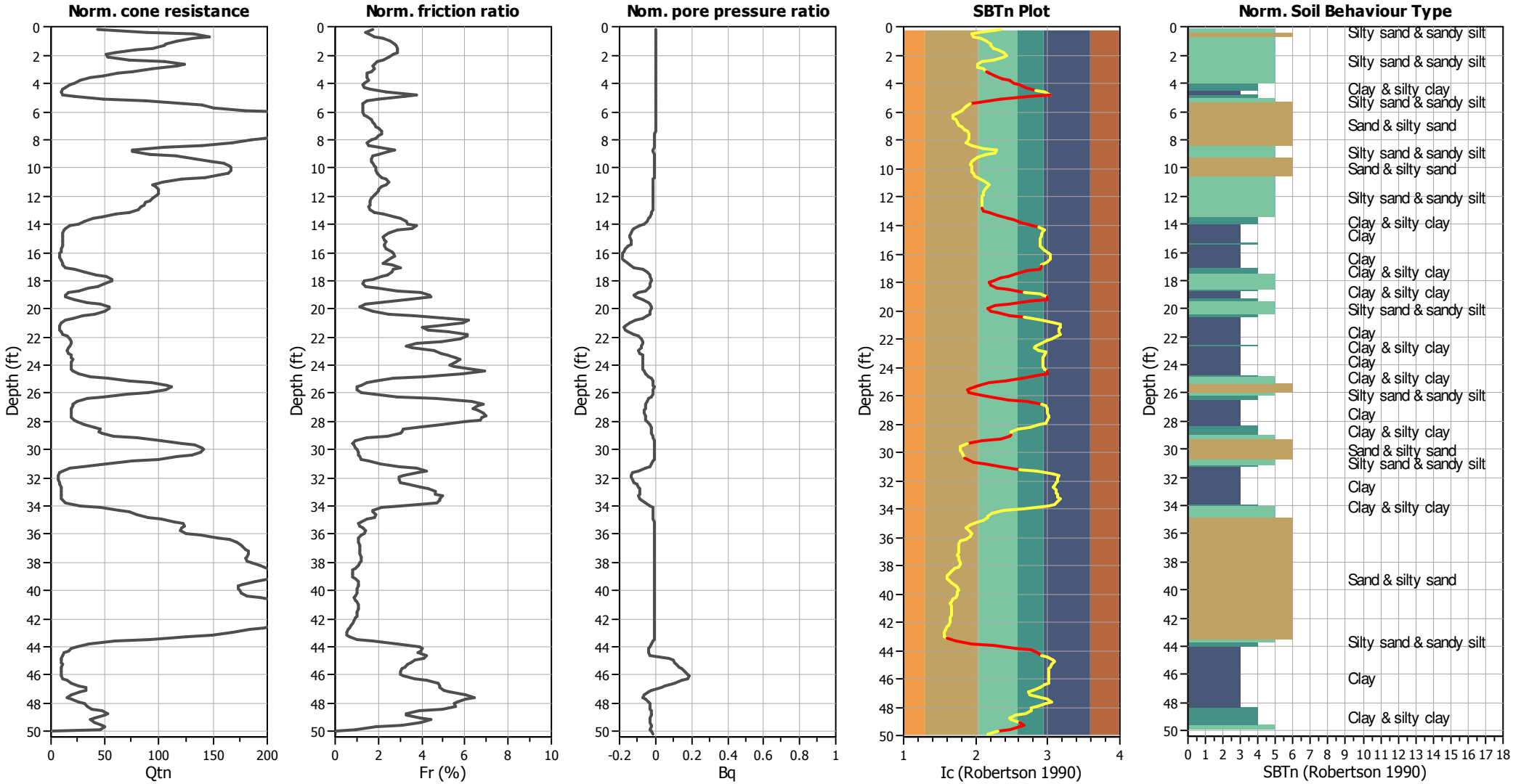






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



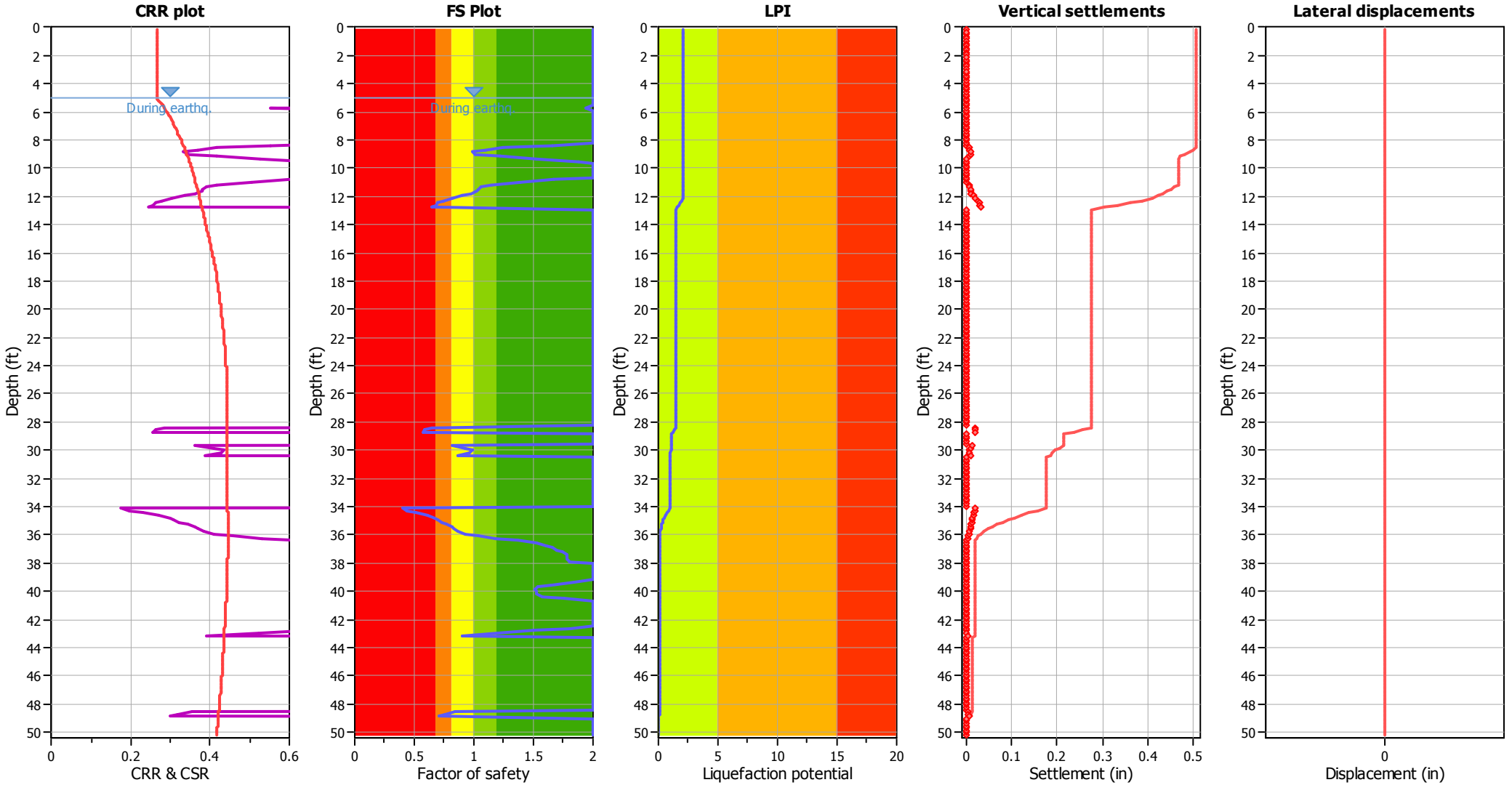
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

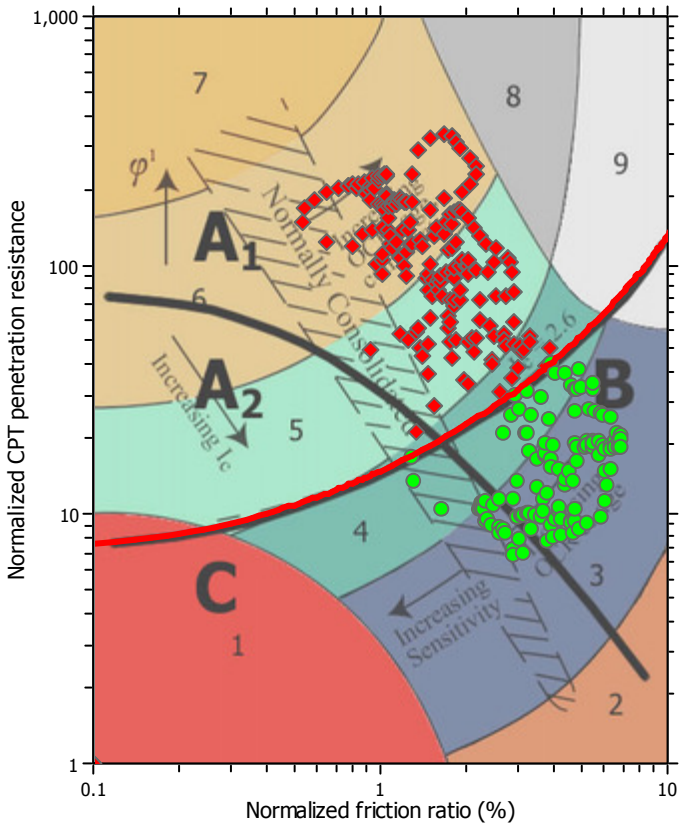
F.S. color scheme

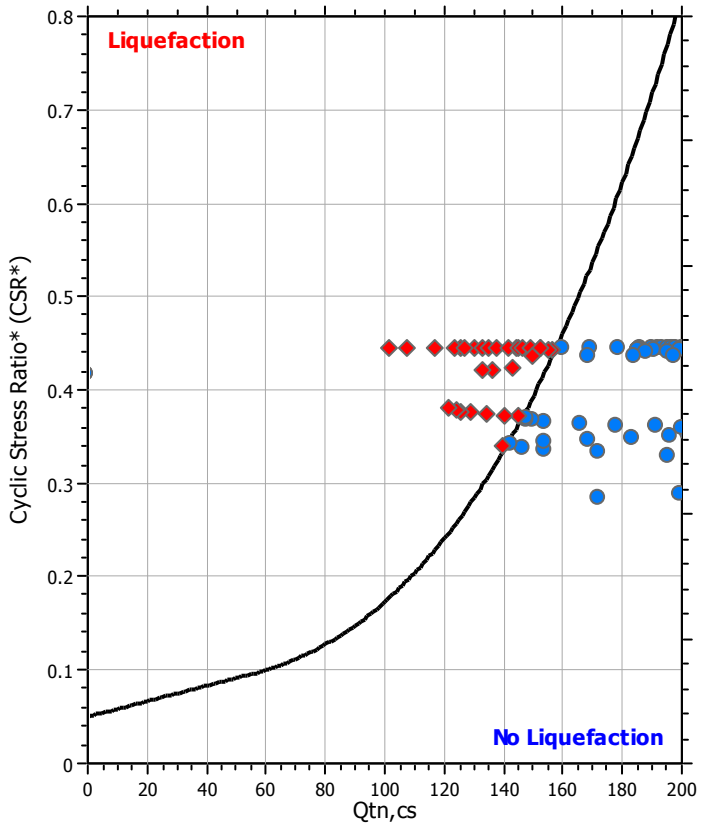
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

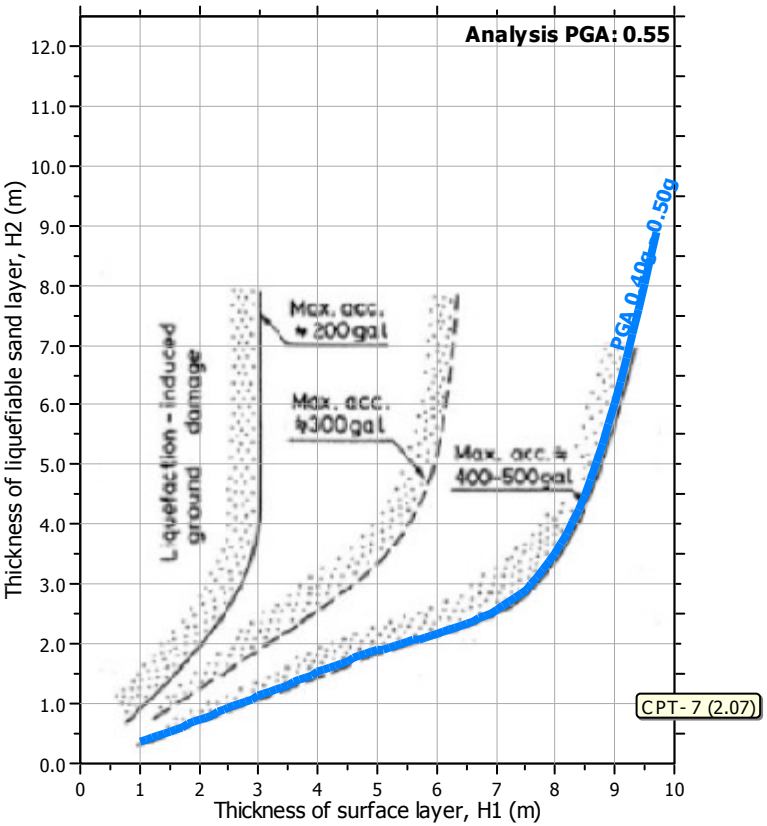
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



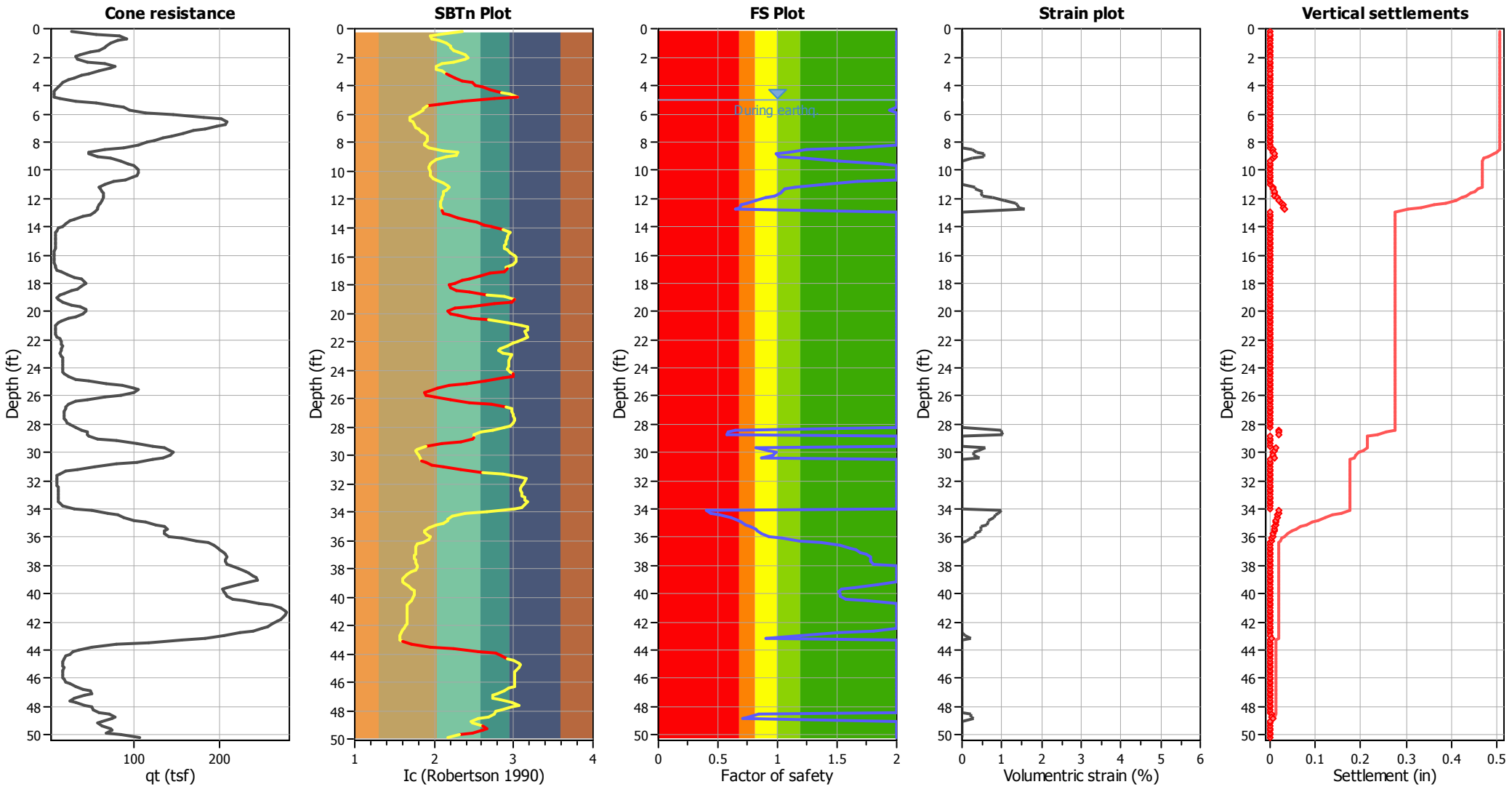




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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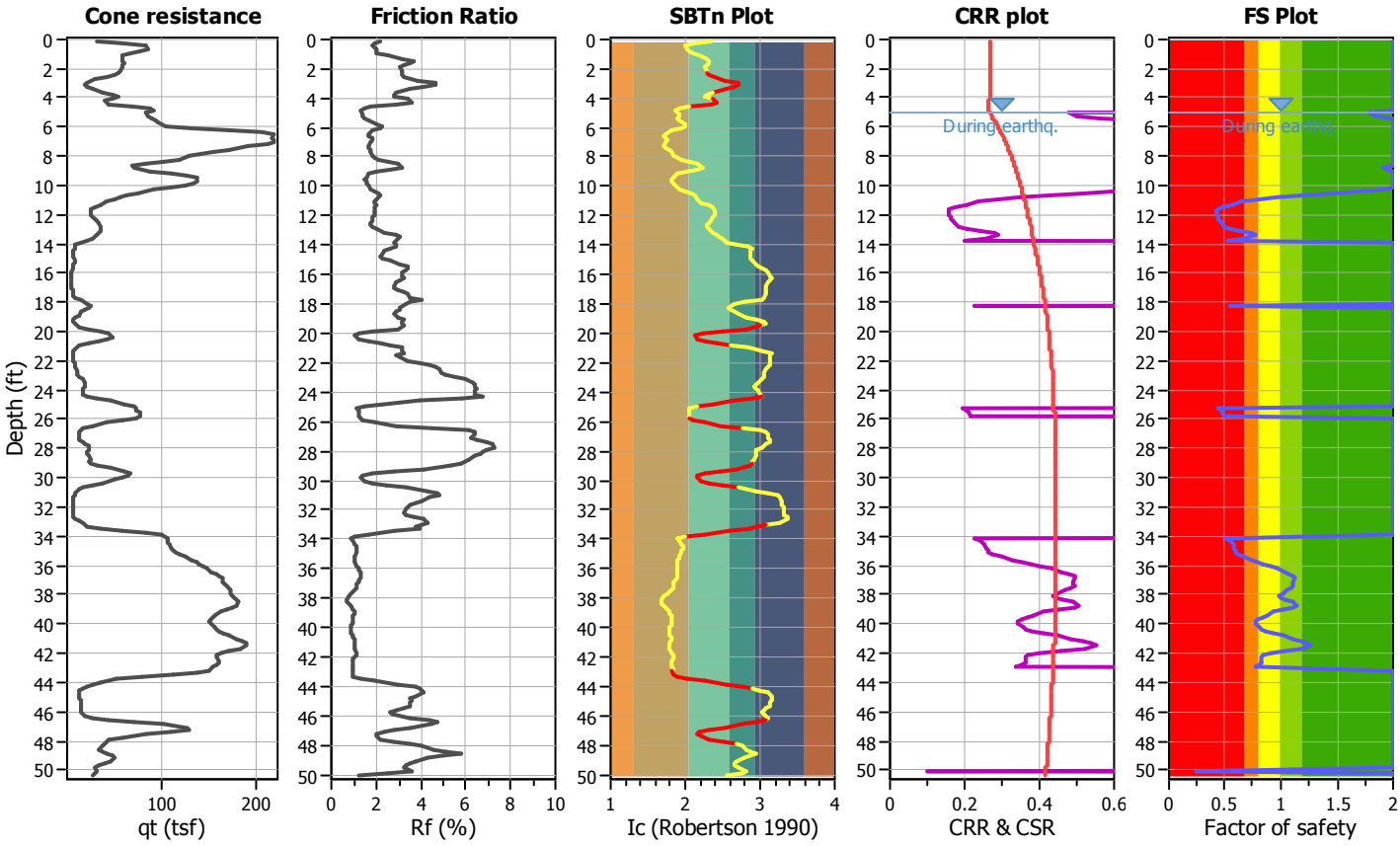
LIQUEFACTION ANALYSIS REPORT

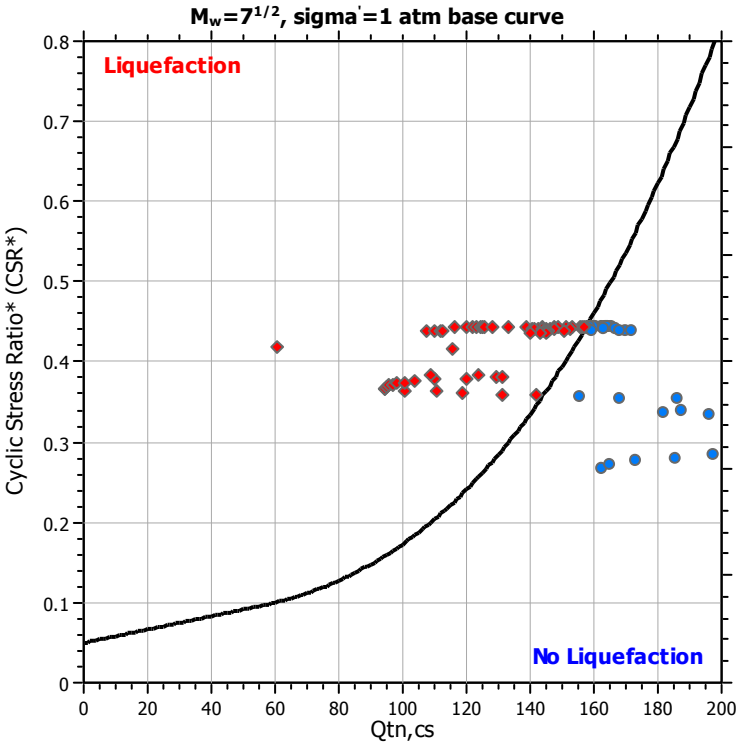
Project title : Shea Properties/Cypress **Location : Cypress, California**

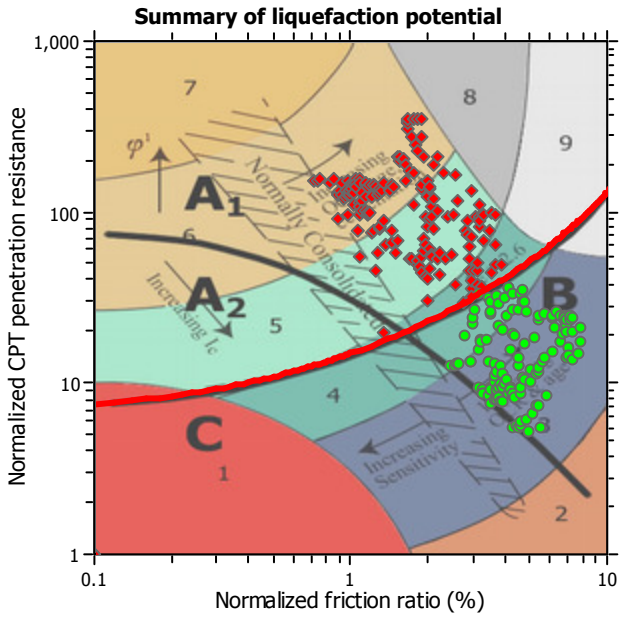
CPT file : CPT- 8

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

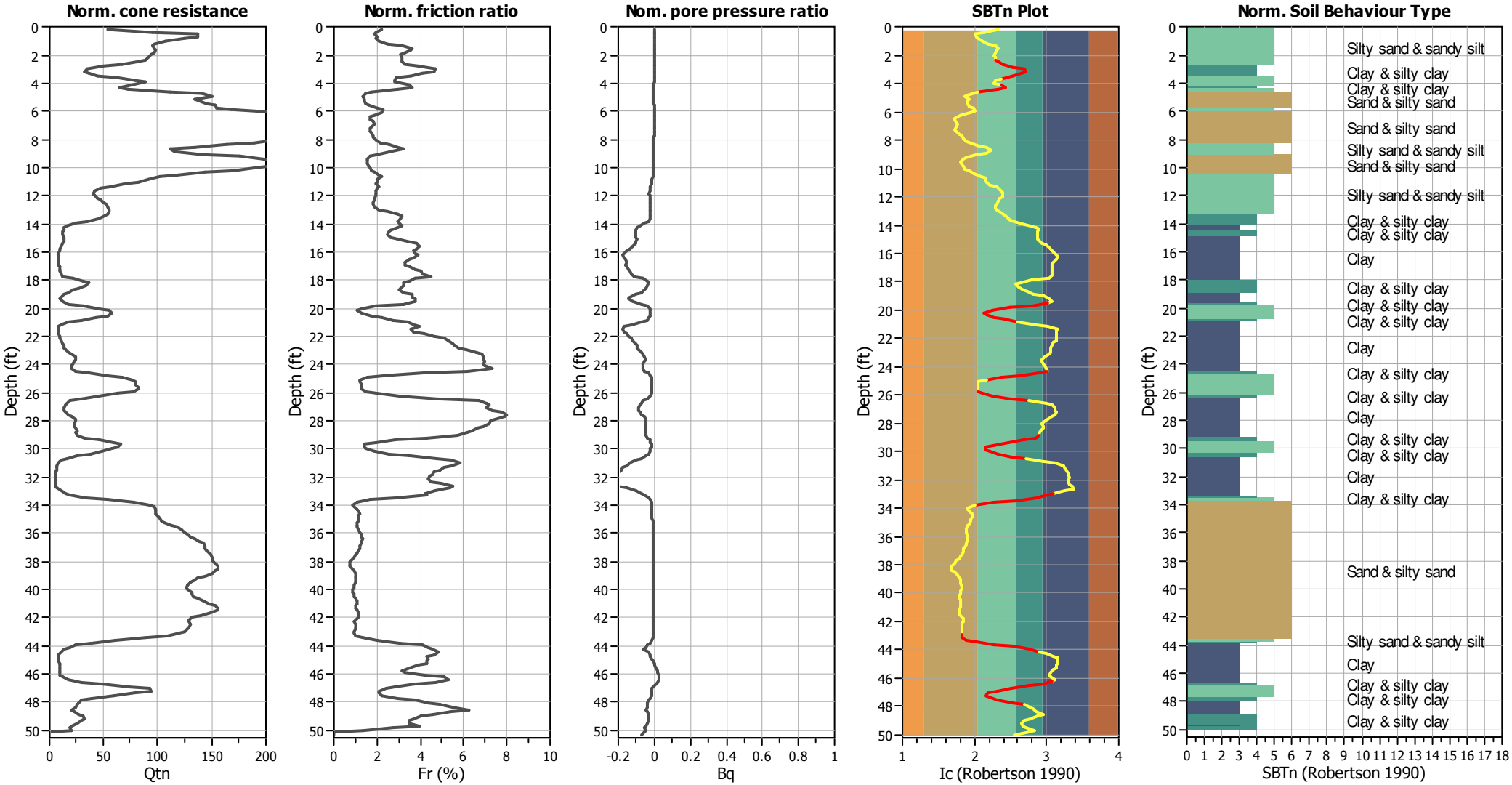






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



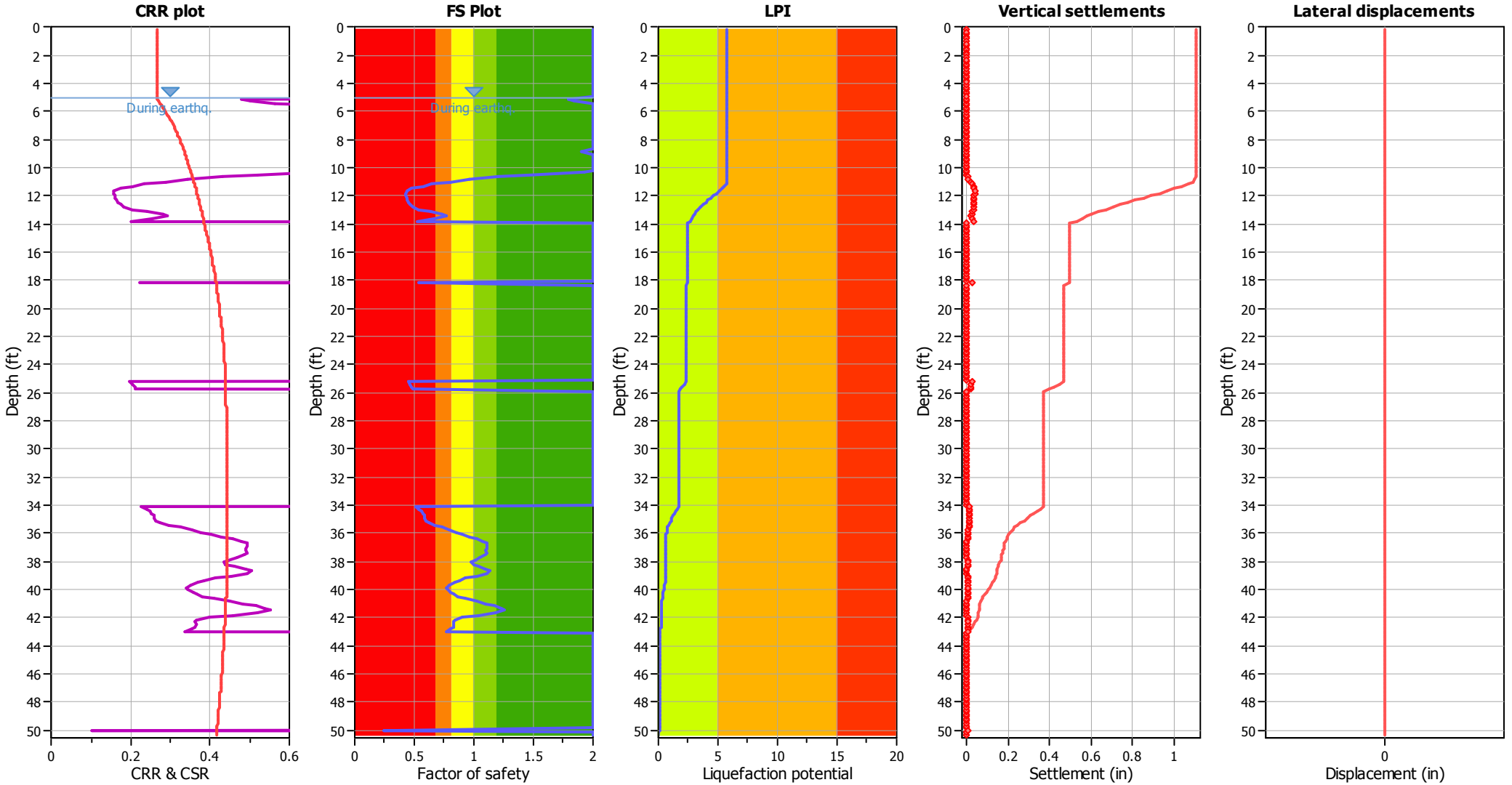
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

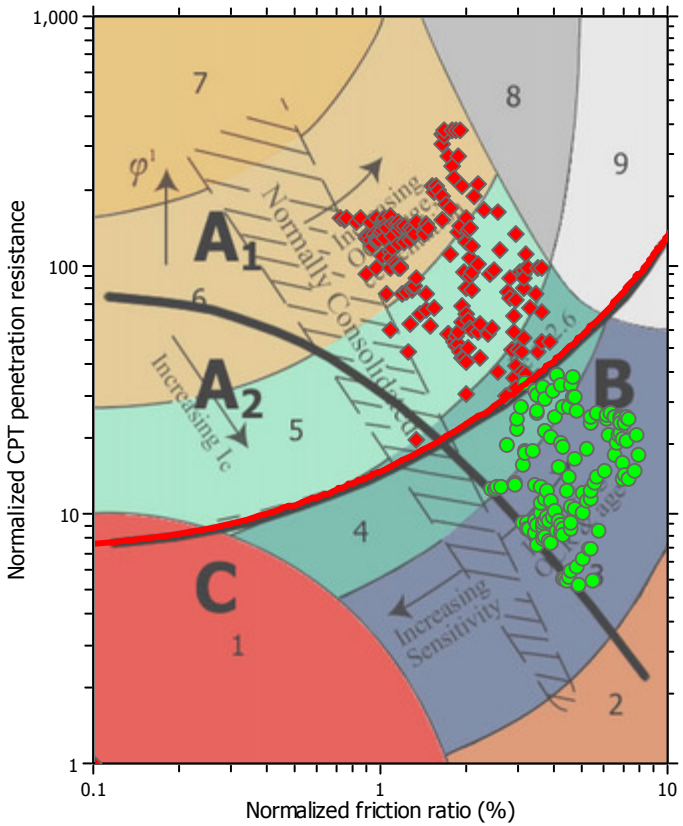
F.S. color scheme

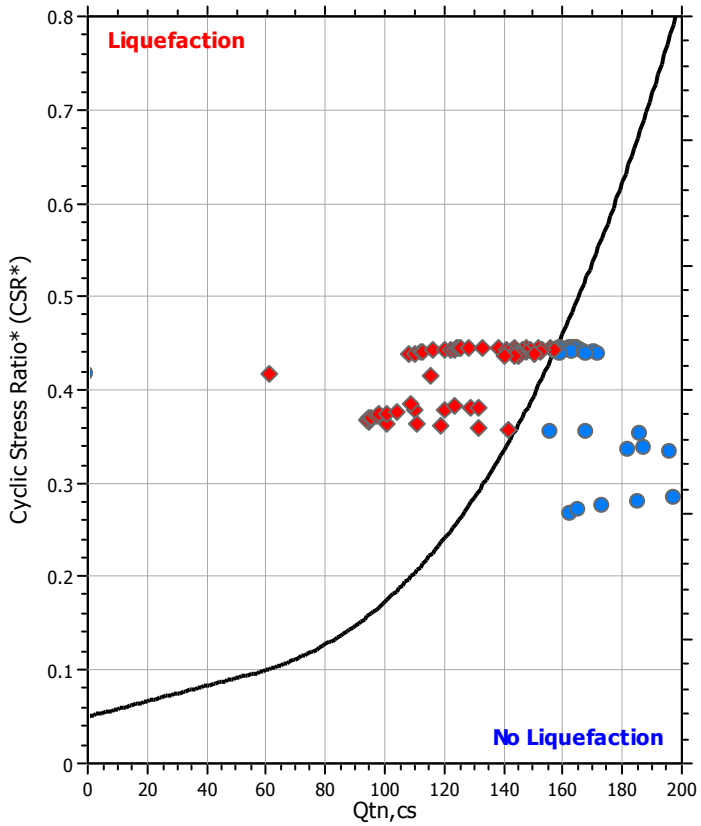
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

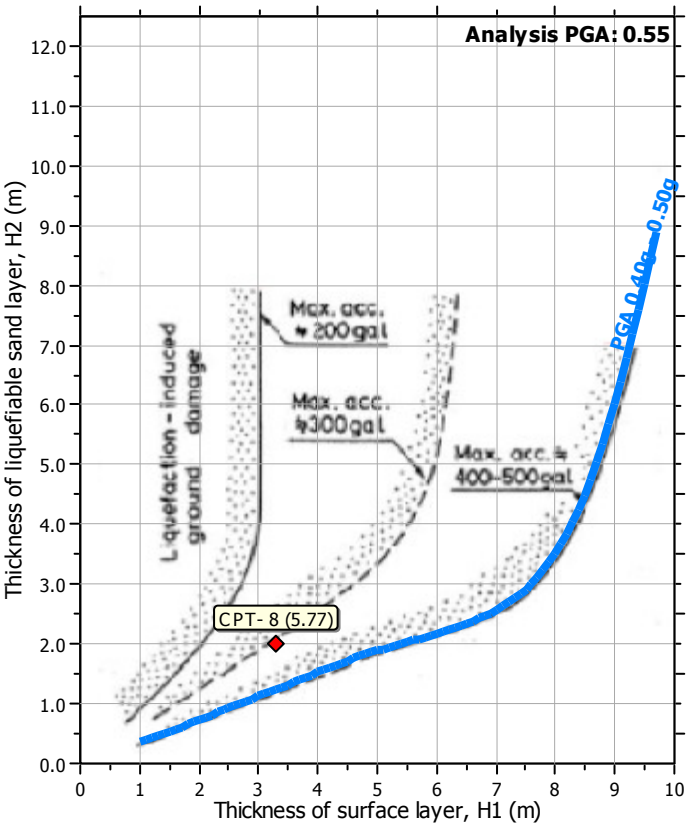
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



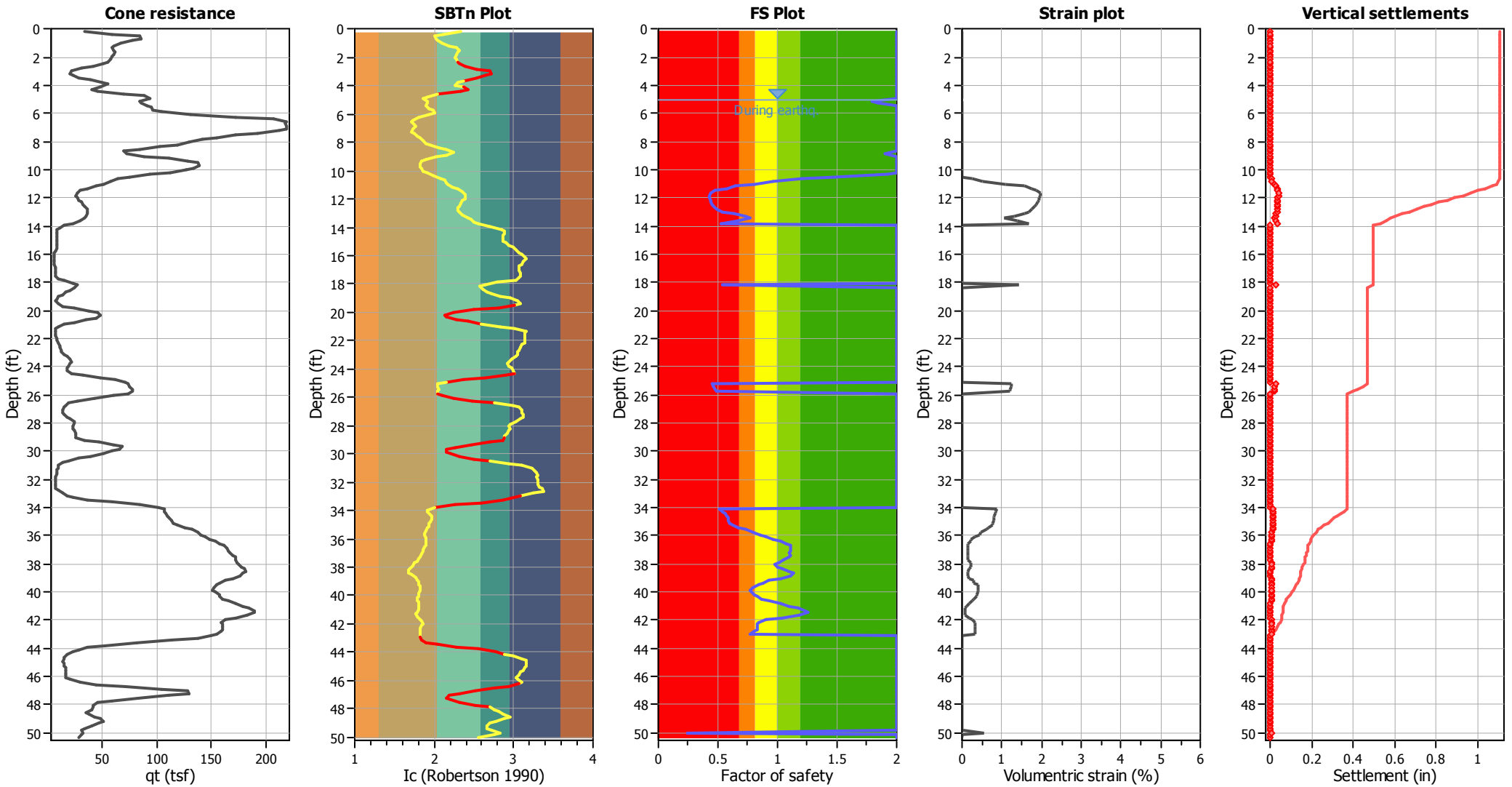




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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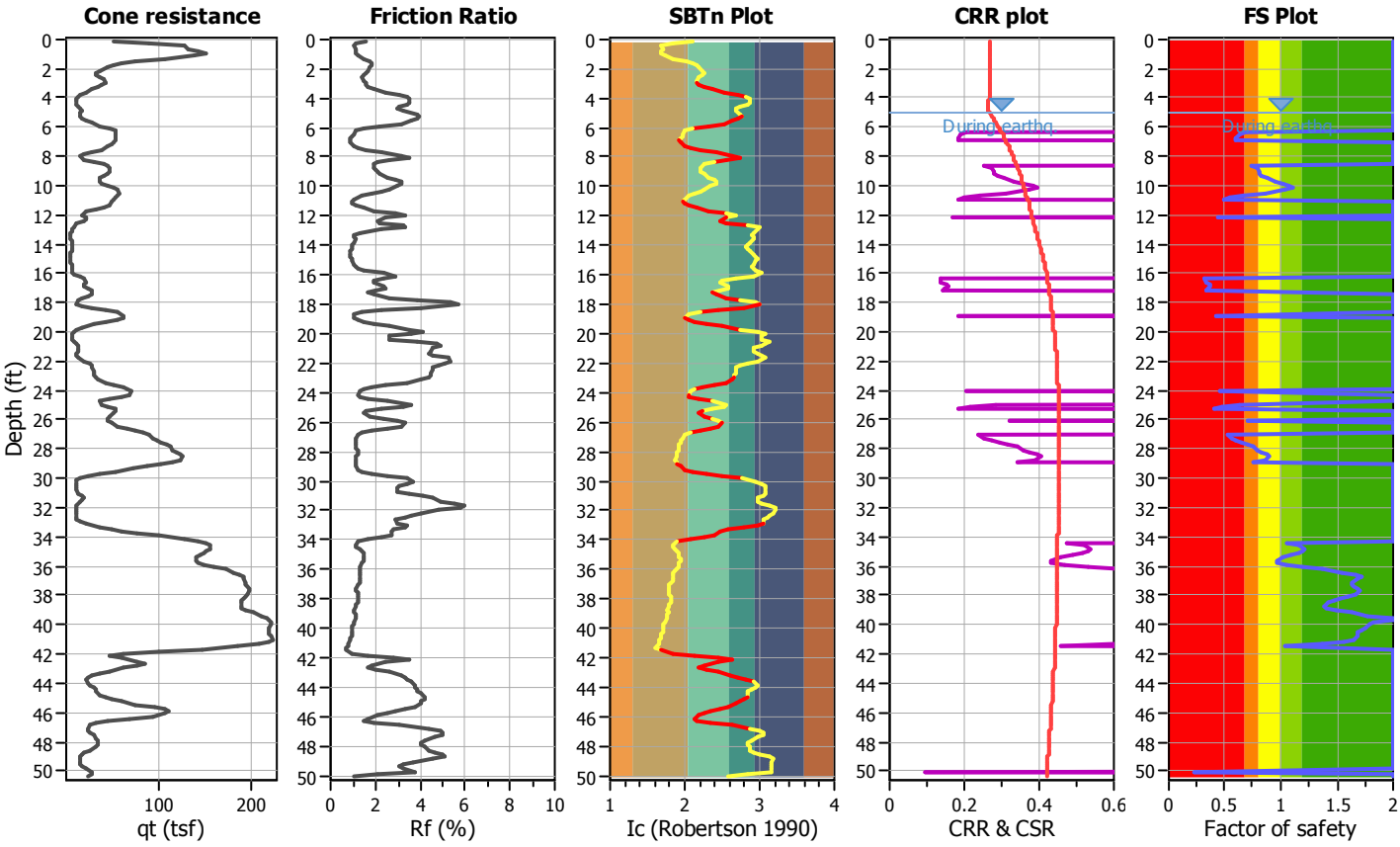
LIQUEFACTION ANALYSIS REPORT

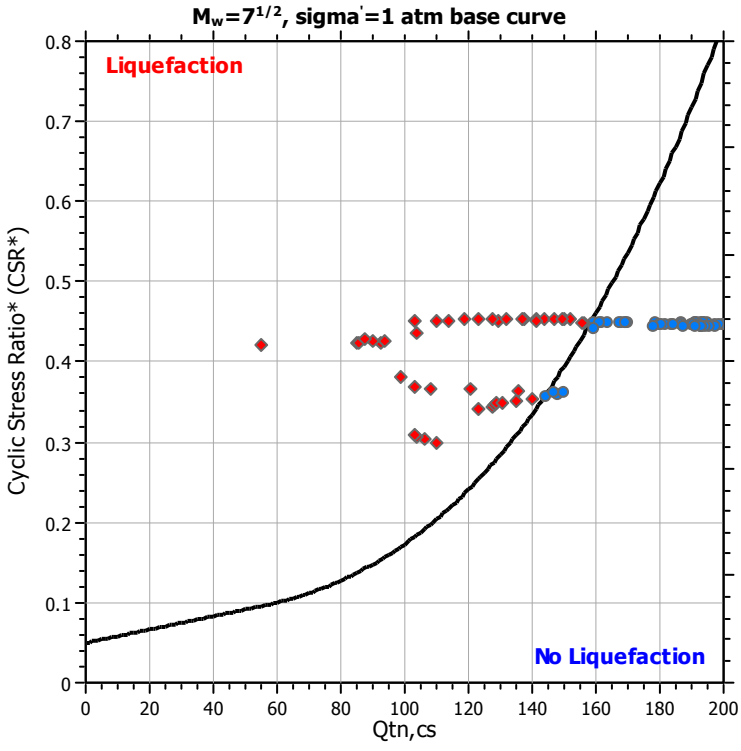
Project title : Shea Properties/Cypress **Location : Cypress, California**

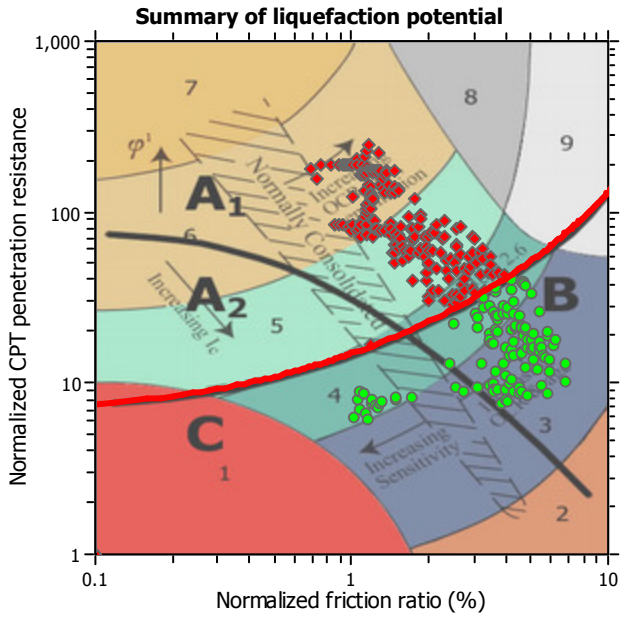
CPT file : CPT- 9

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

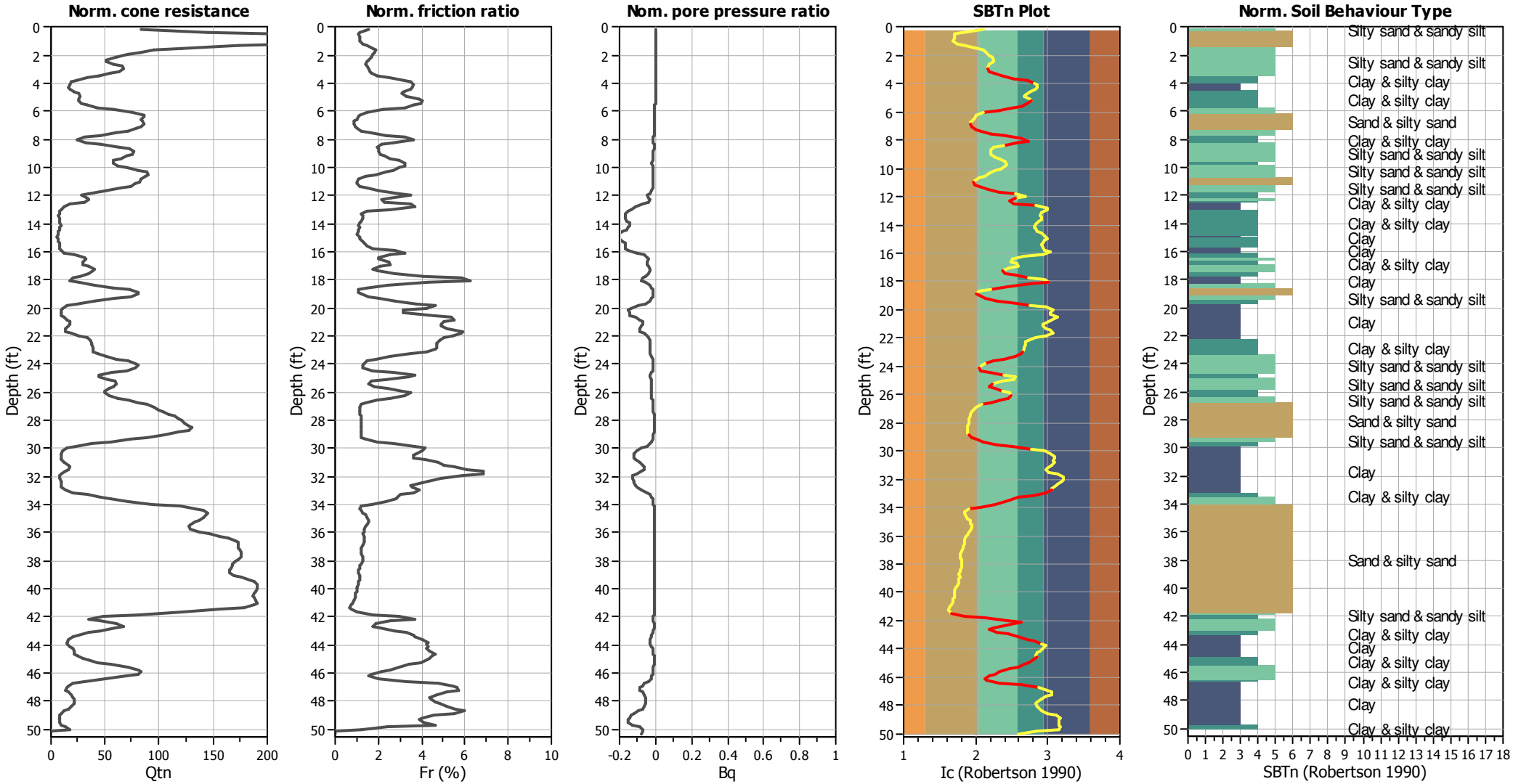






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



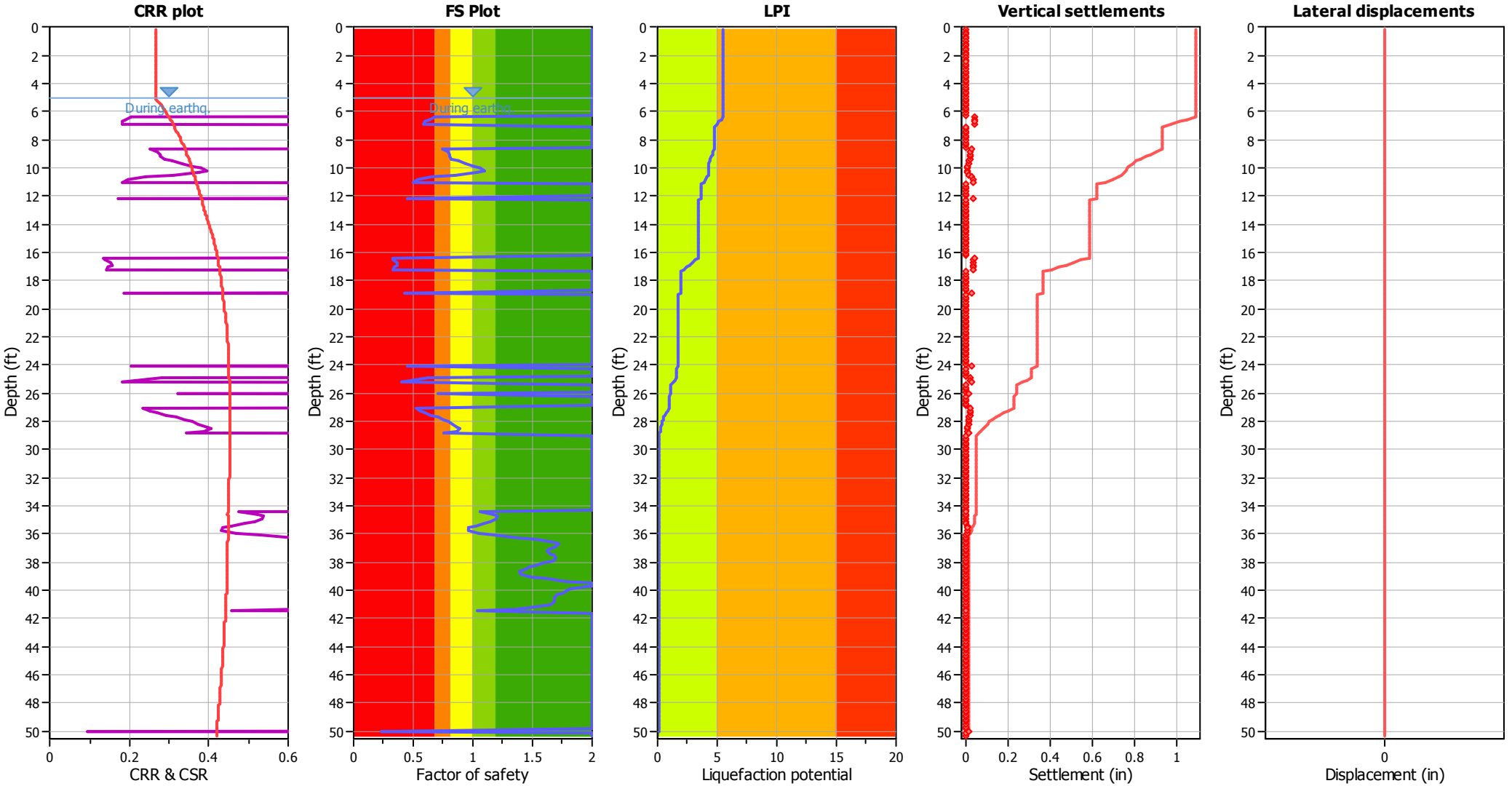
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

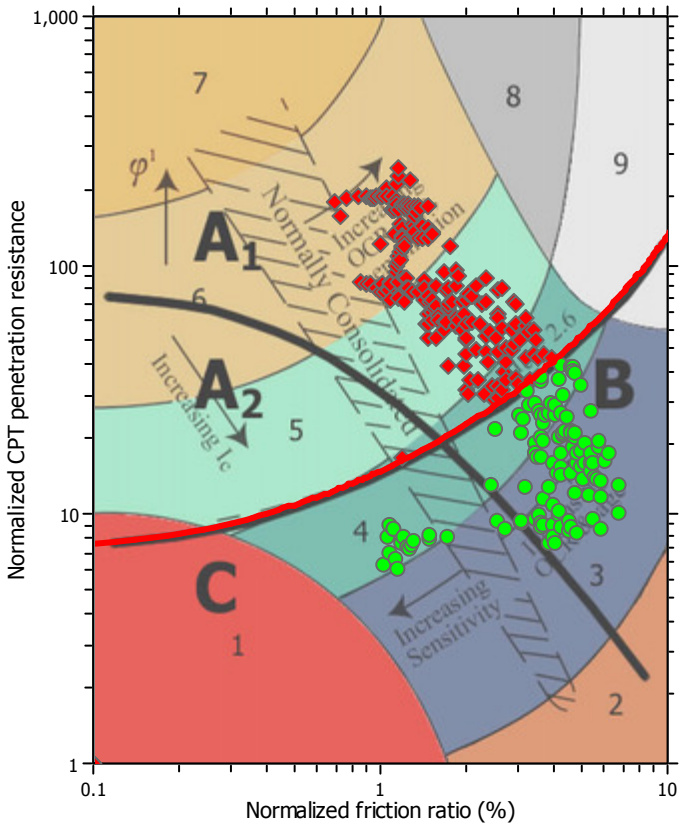
F.S. color scheme

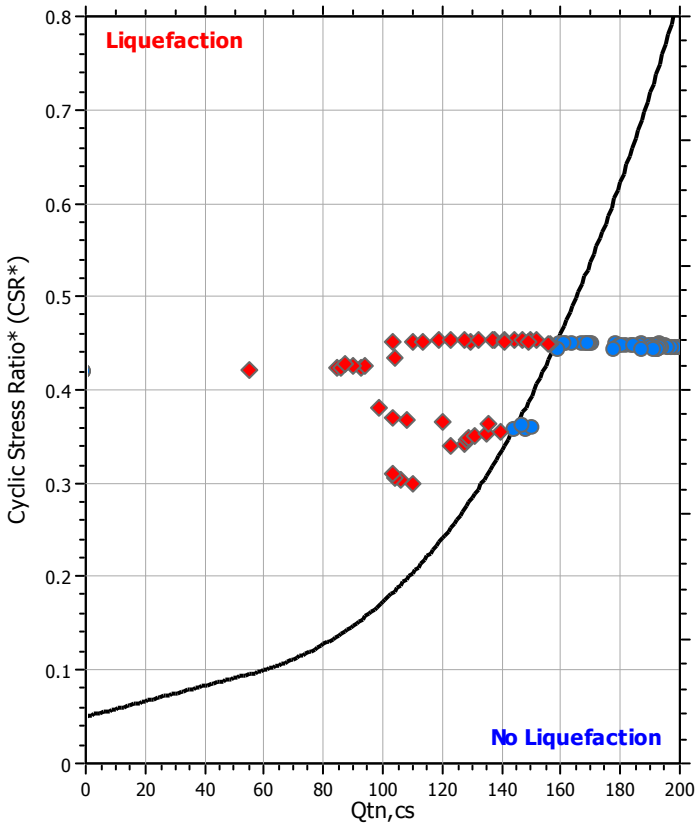
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

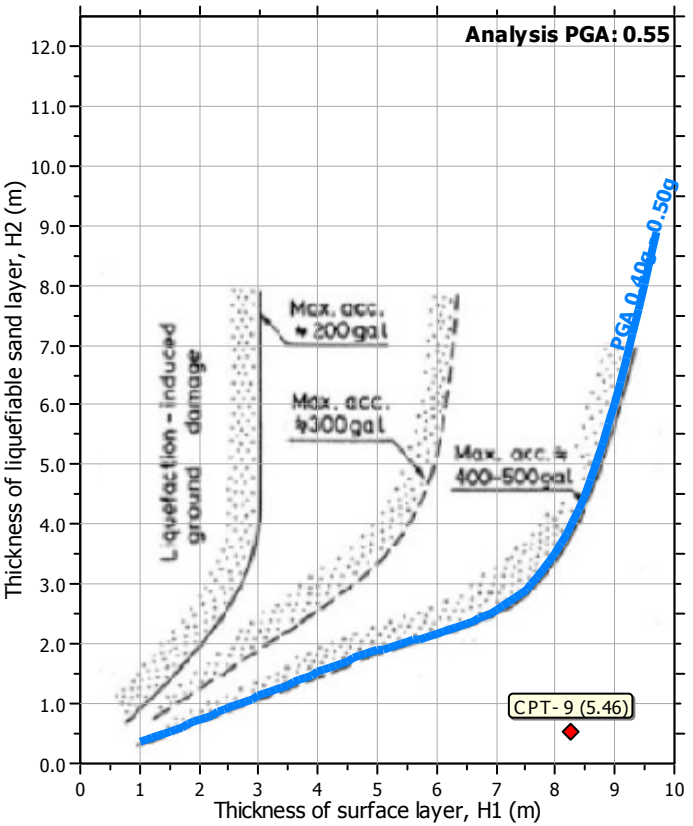
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



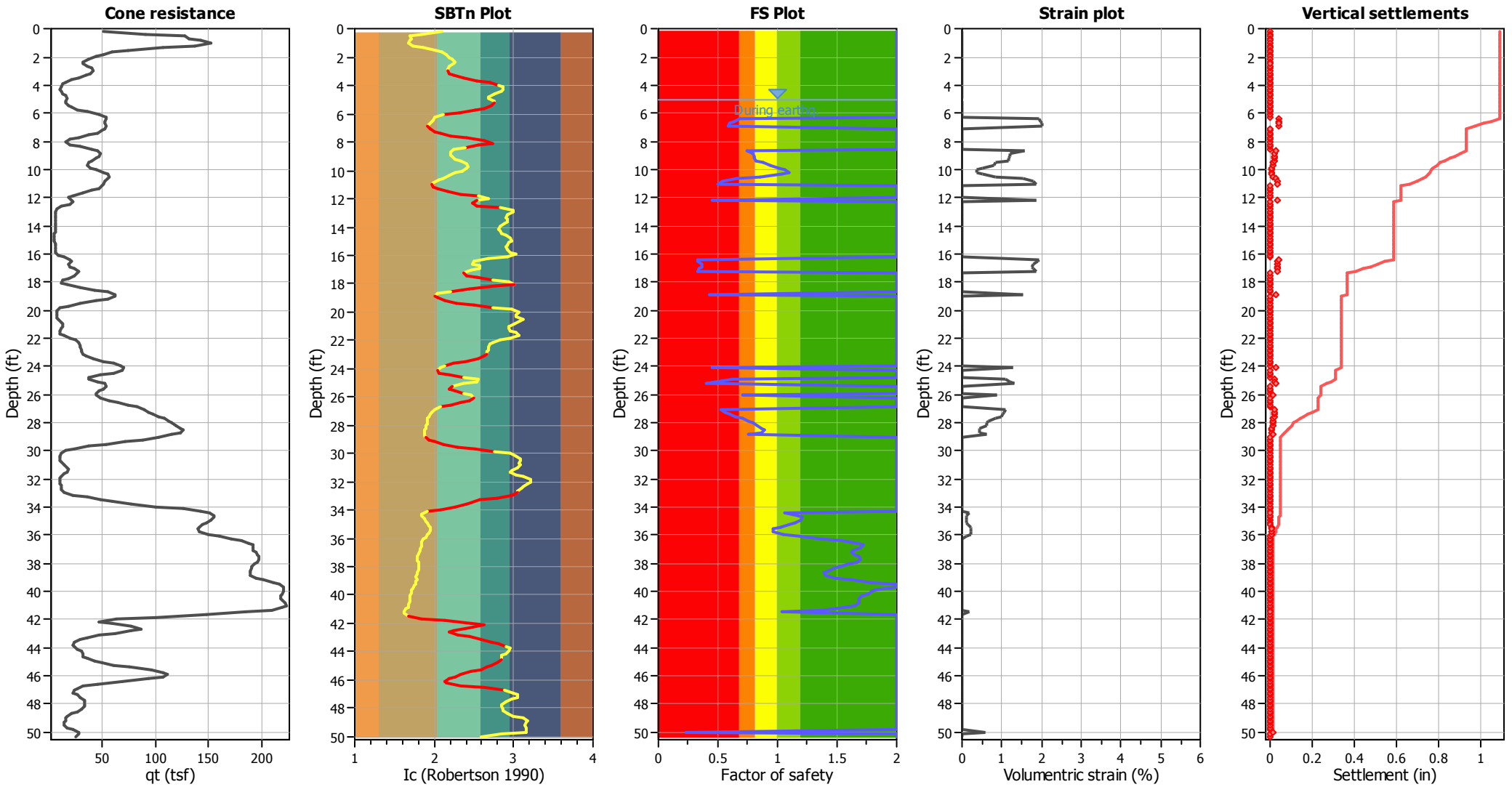




Input parameters and analysis data

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_σ 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)
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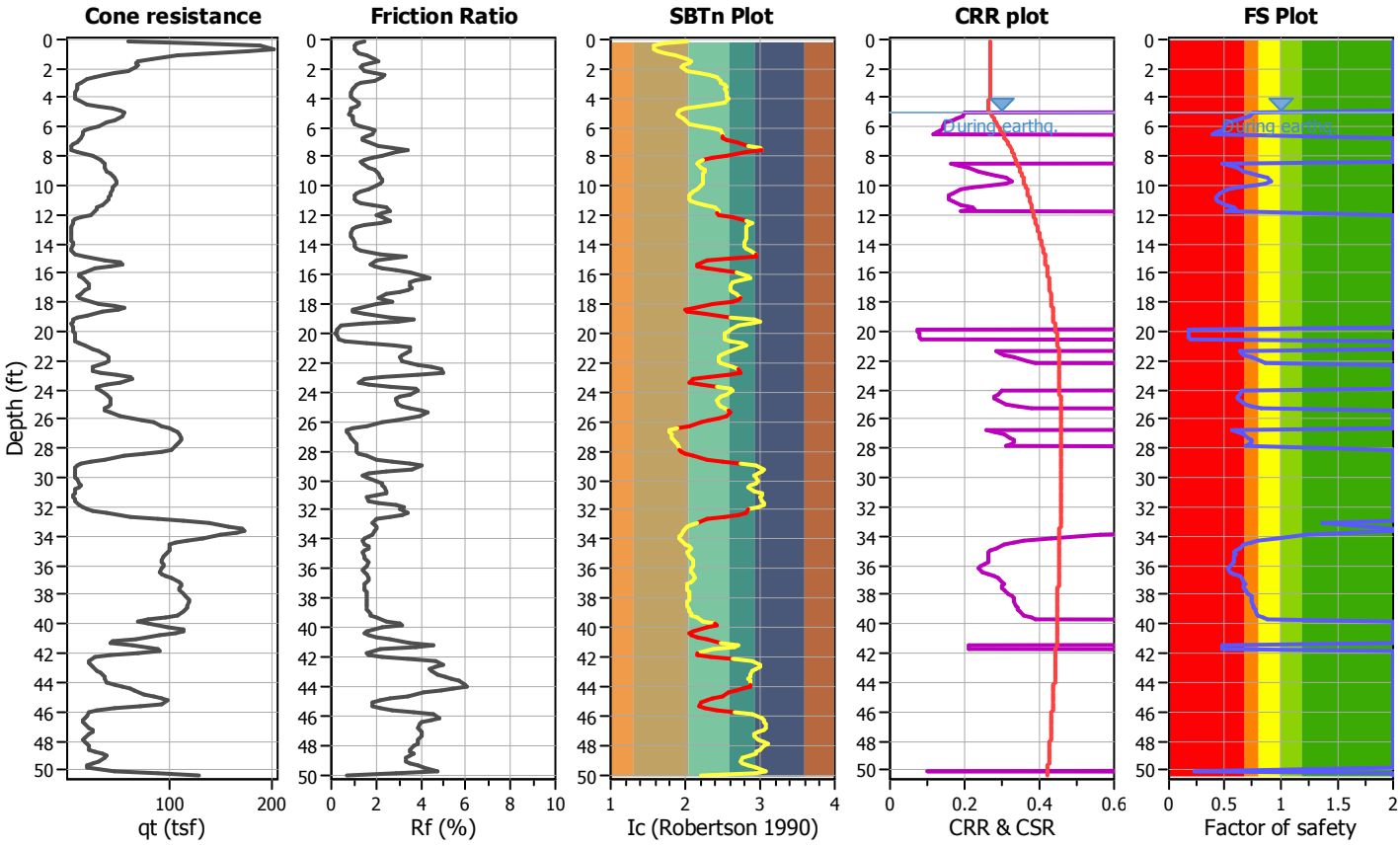
LIQUEFACTION ANALYSIS REPORT

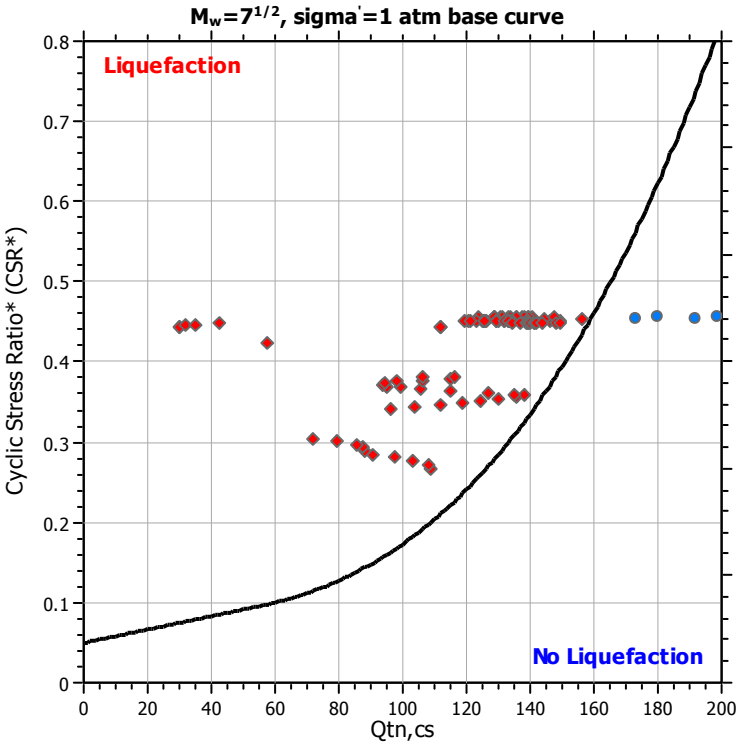
Project title : Shea Properties/Cypress **Location : Cypress, California**

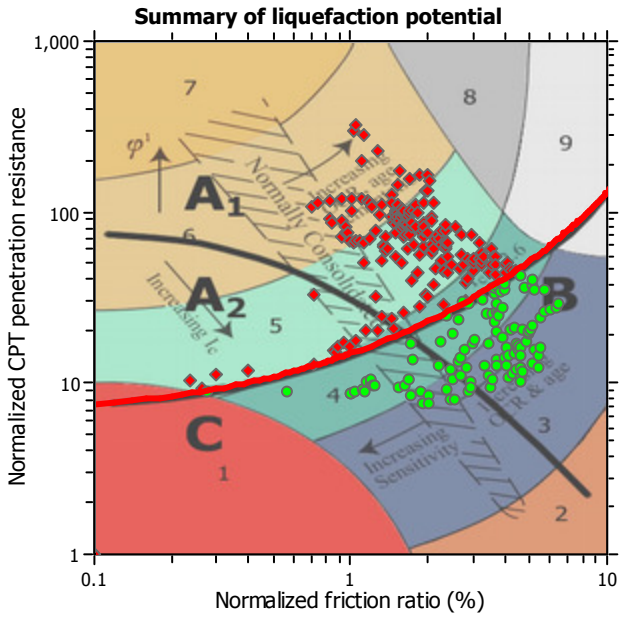
CPT file : CPT-10

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

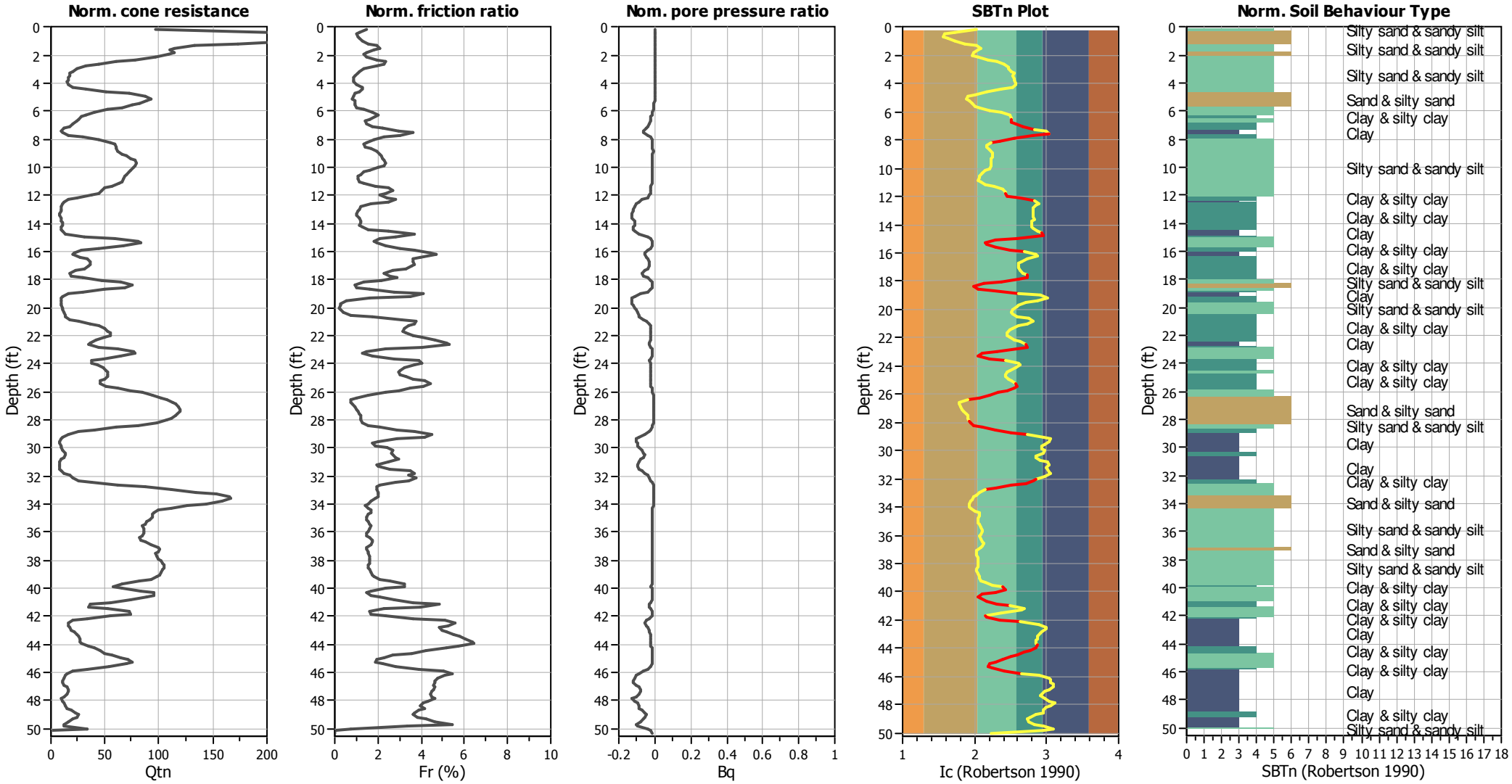






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



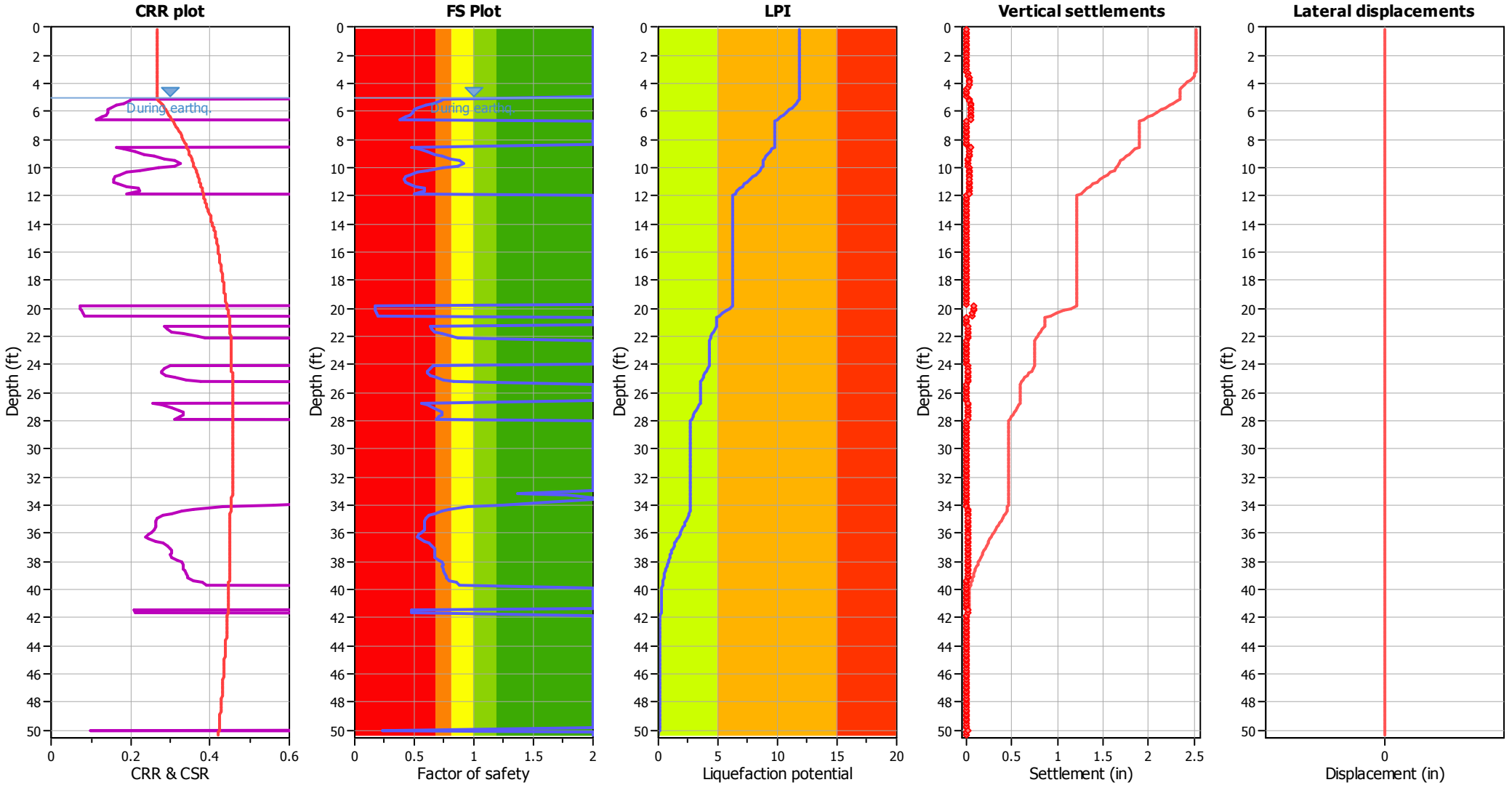
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

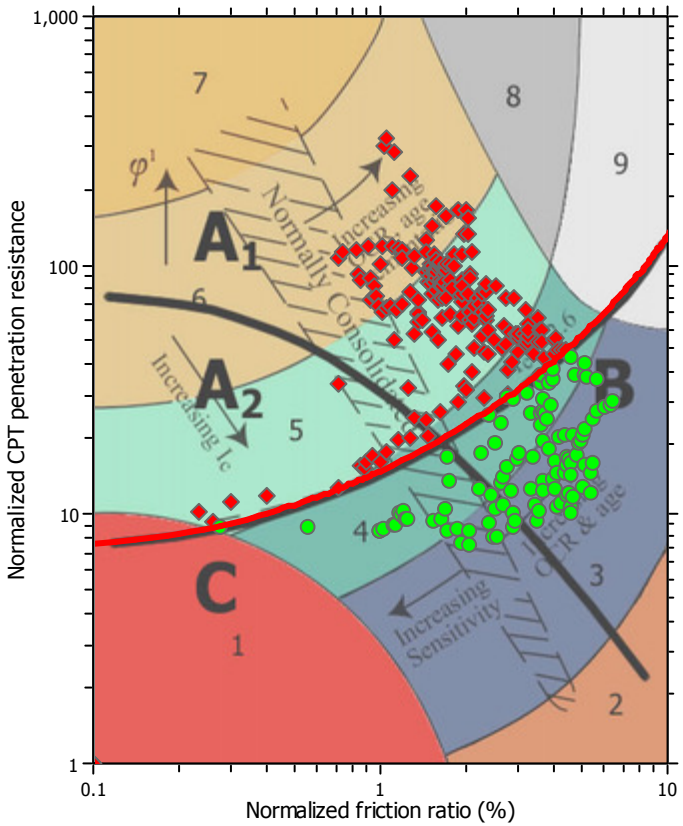
F.S. color scheme

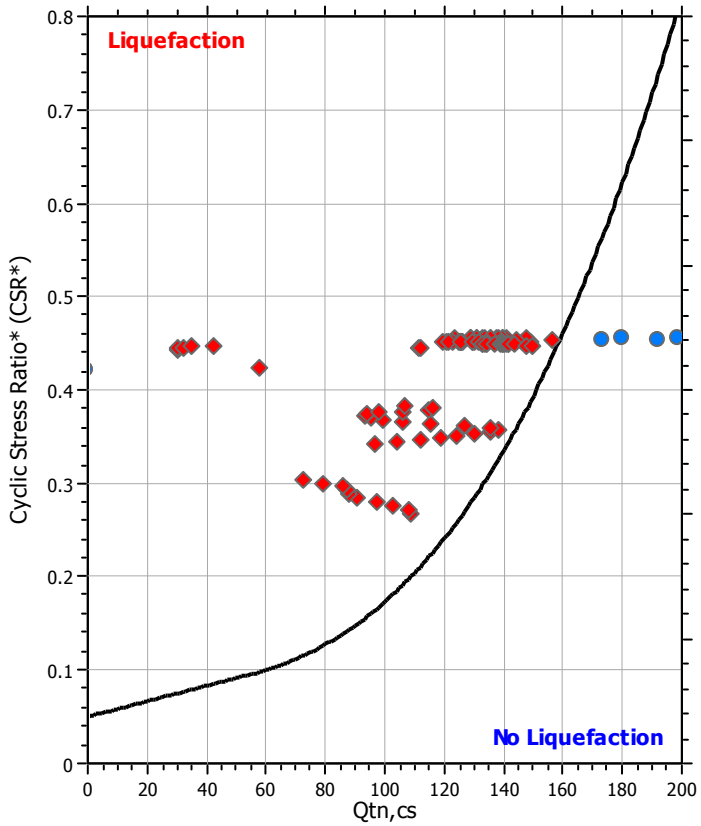
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

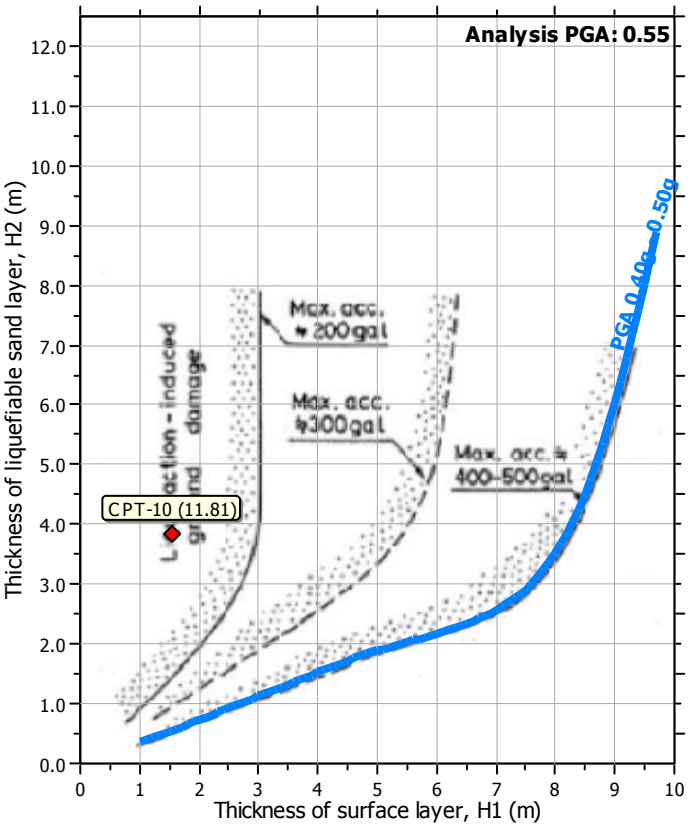
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



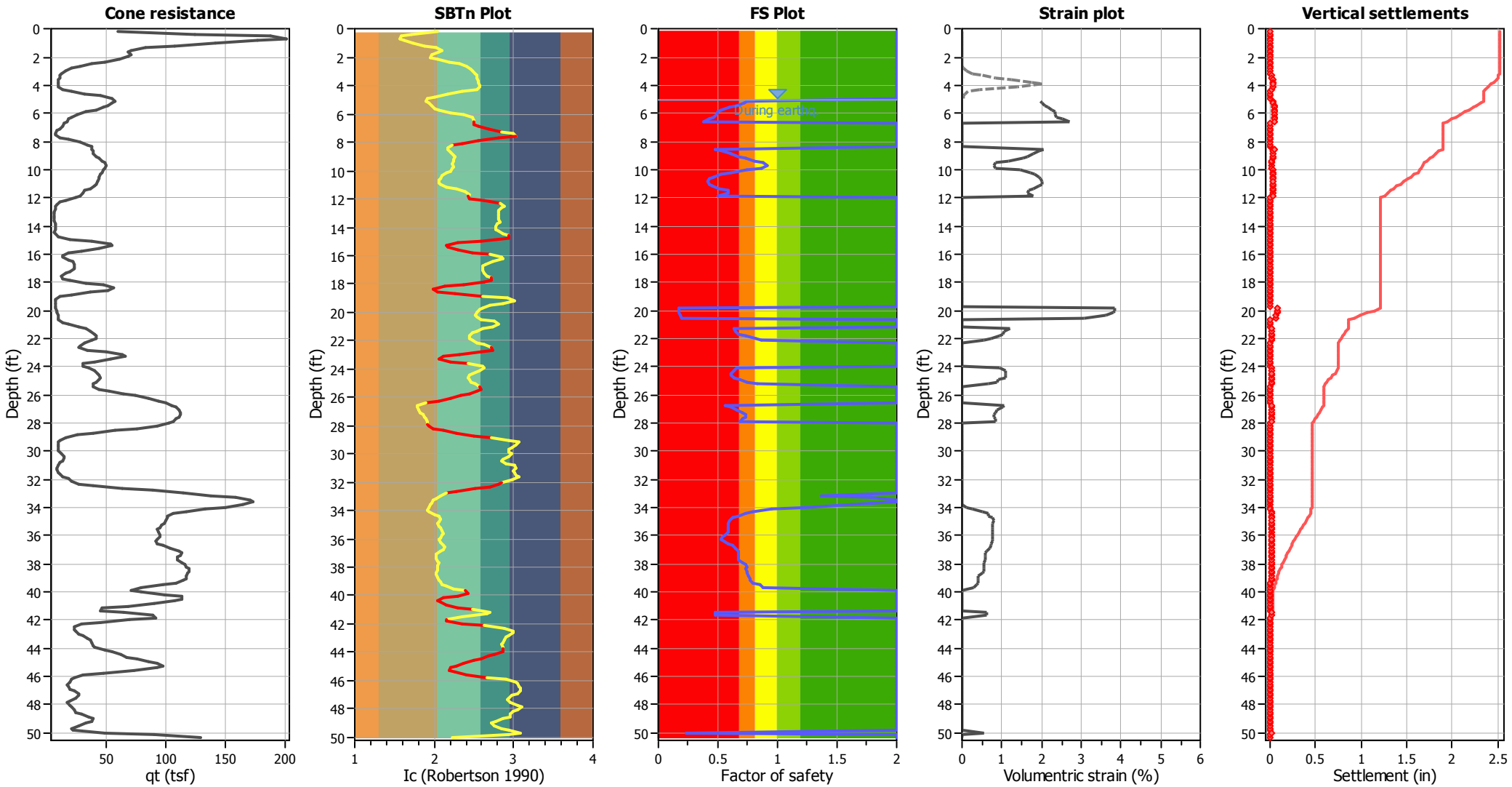




Input parameters and analysis data

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_σ 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
Volumentric strain:	Post-liquefaction volumentric strain

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Irvine, CA 92614

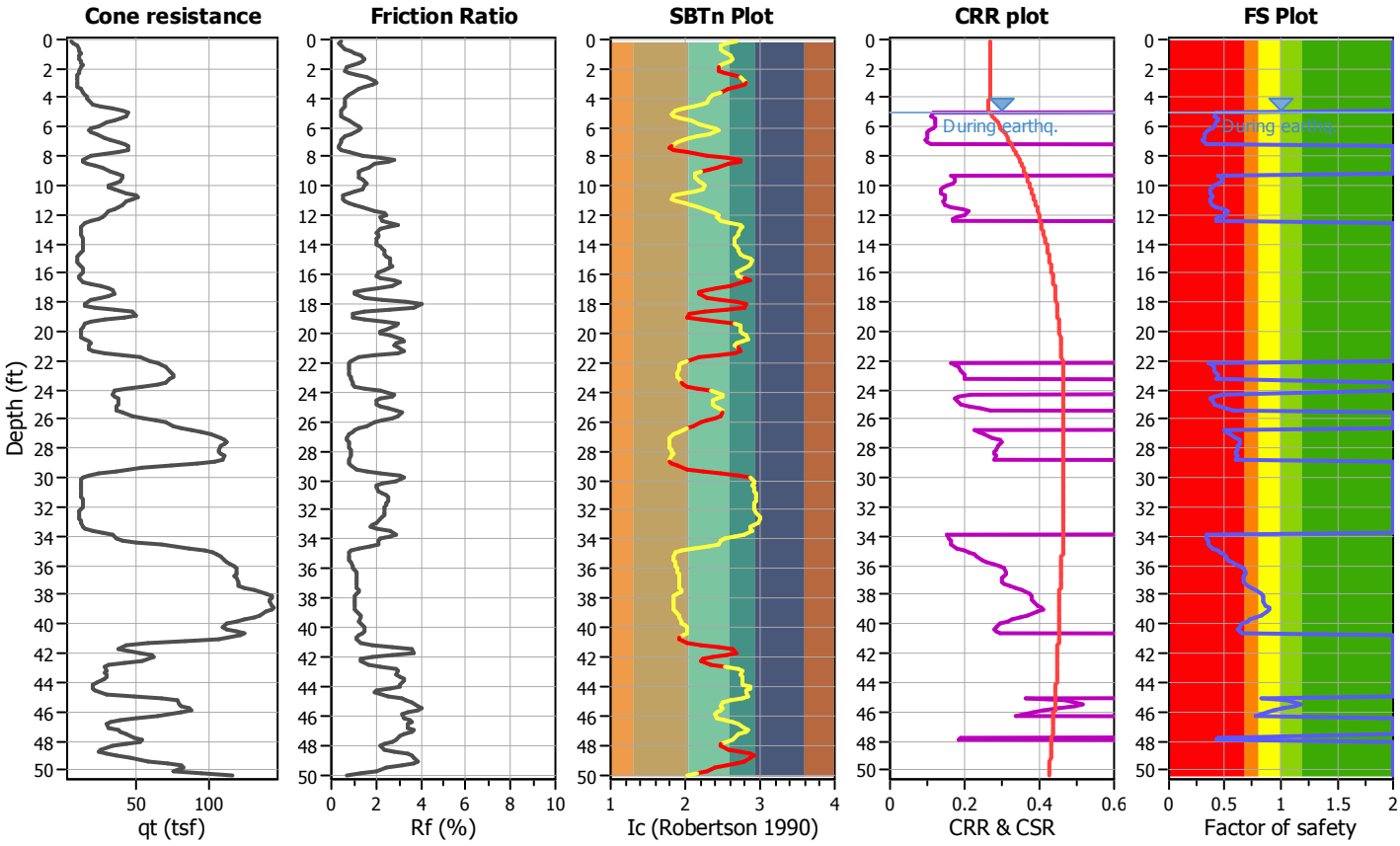
LIQUEFACTION ANALYSIS REPORT

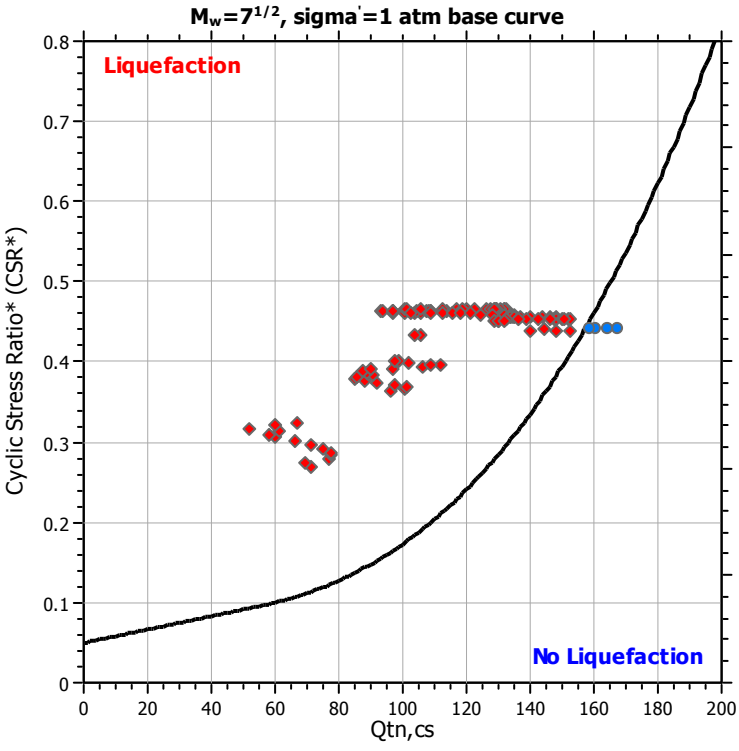
Project title : Shea Properties/Cypress **Location : Cypress, California**

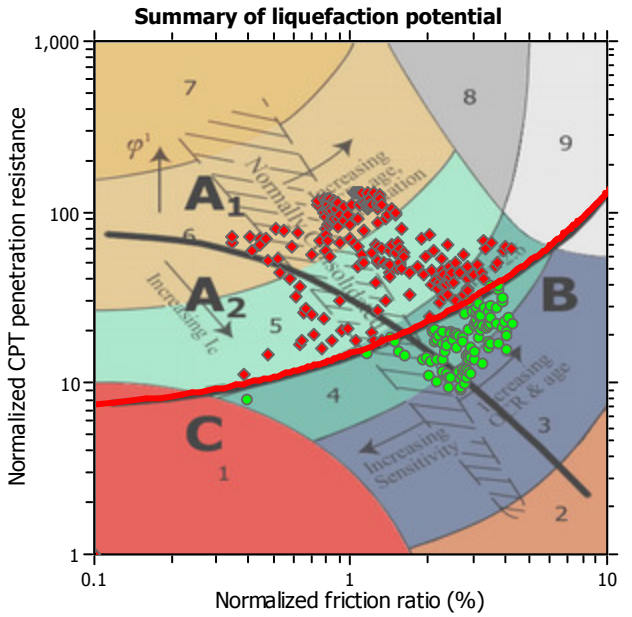
CPT file : CPT-11

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

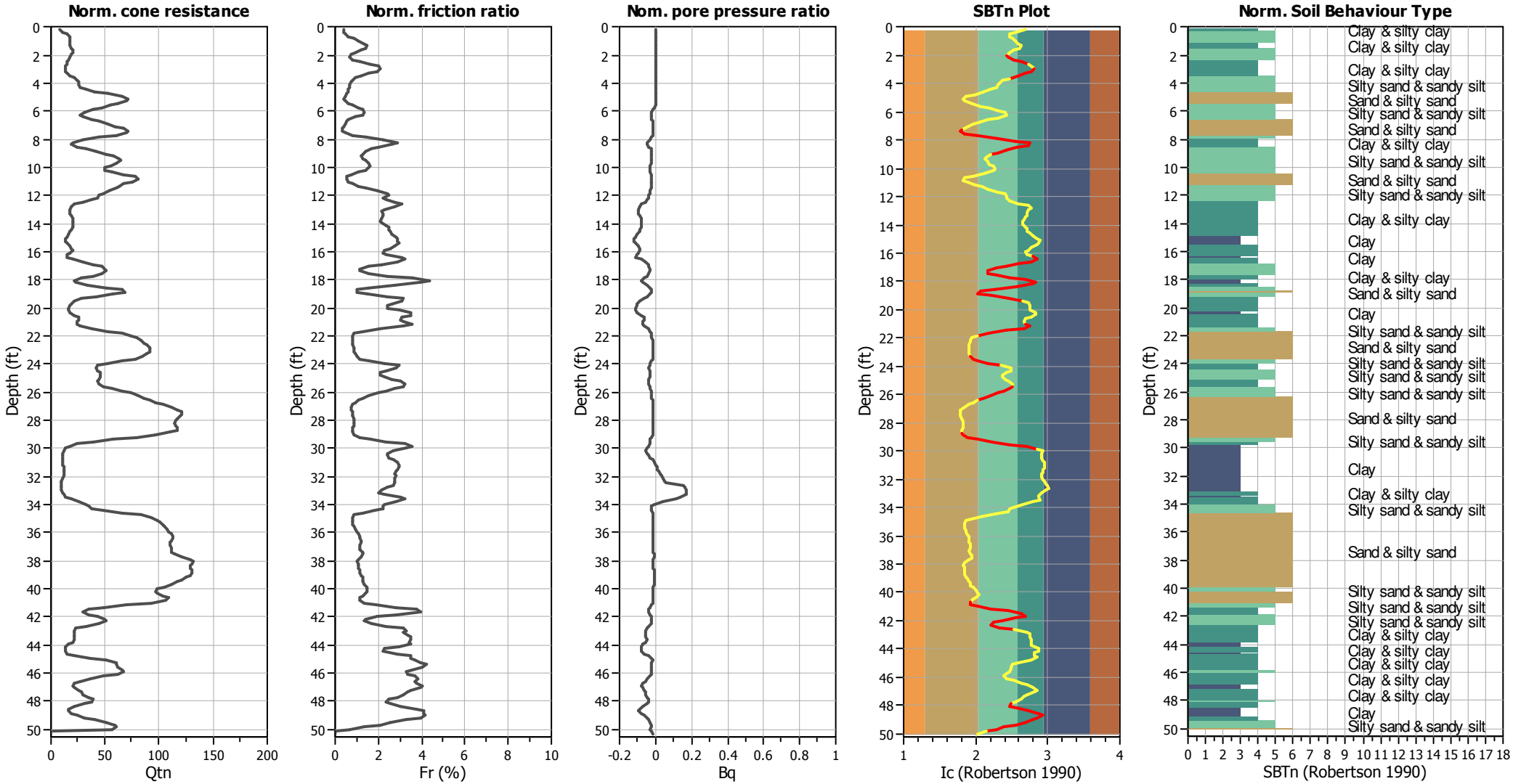






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



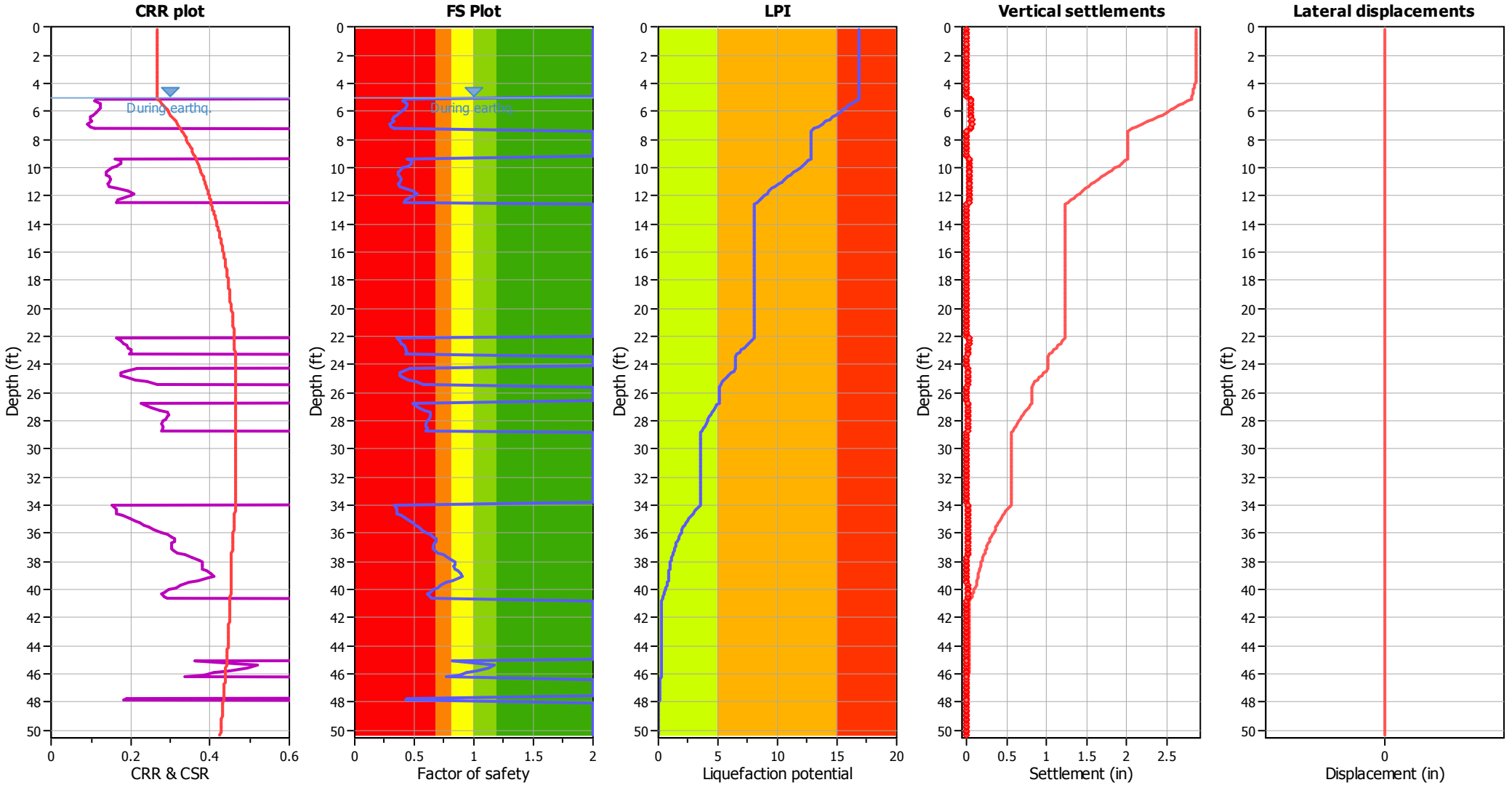
Input parameters and analysis data

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_σ 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

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall 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_σ 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

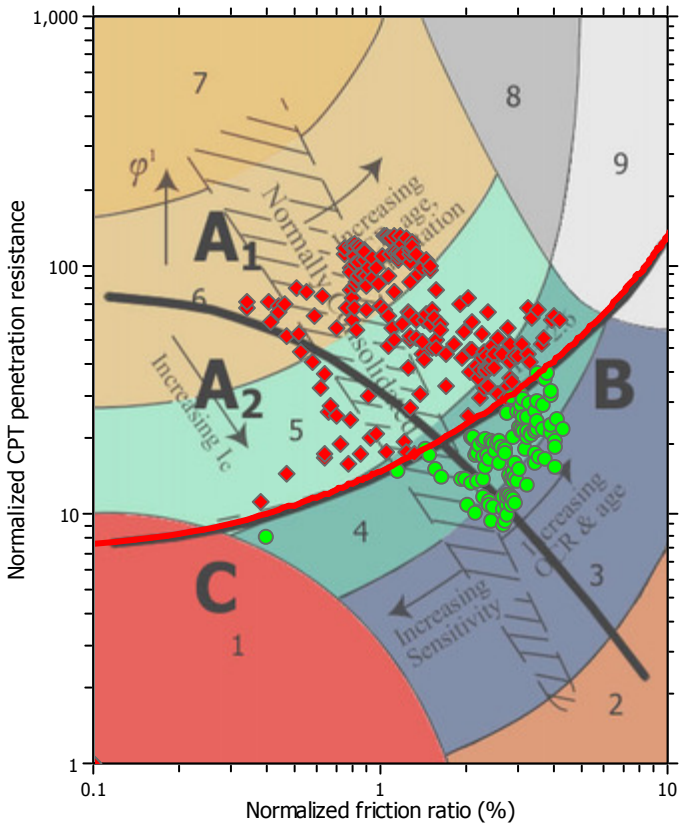
F.S. color scheme

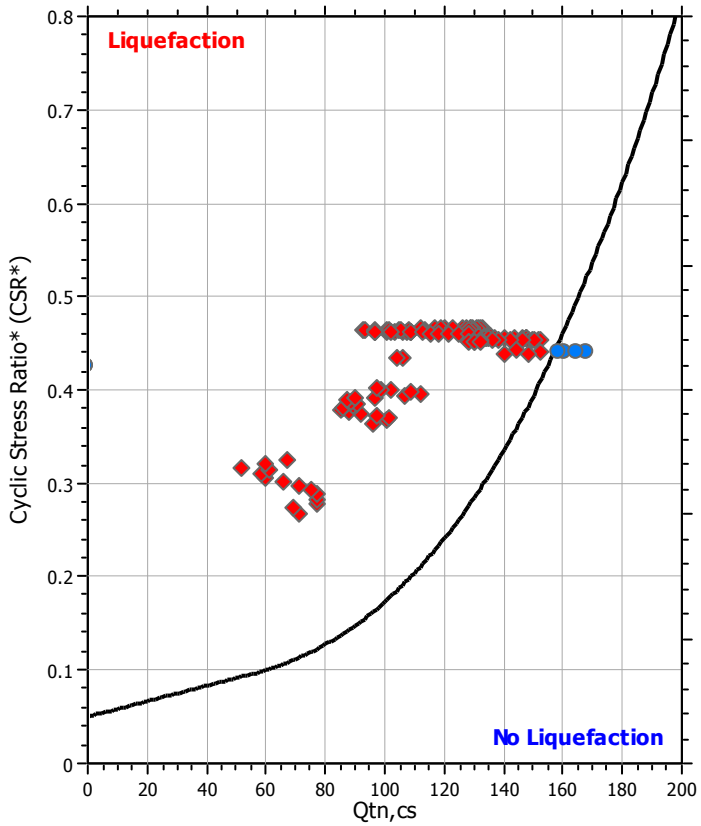
- Almost certain it will liquefy
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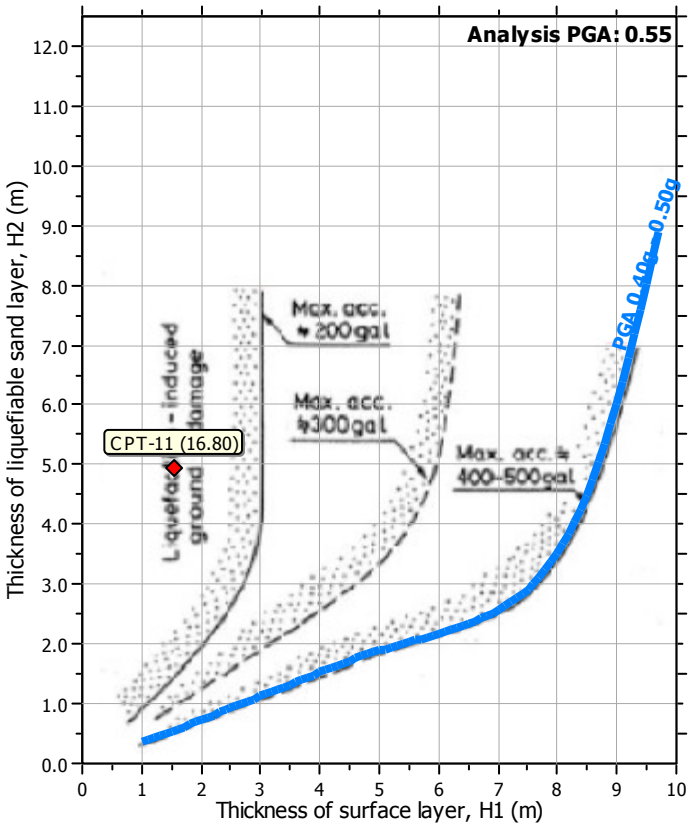
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



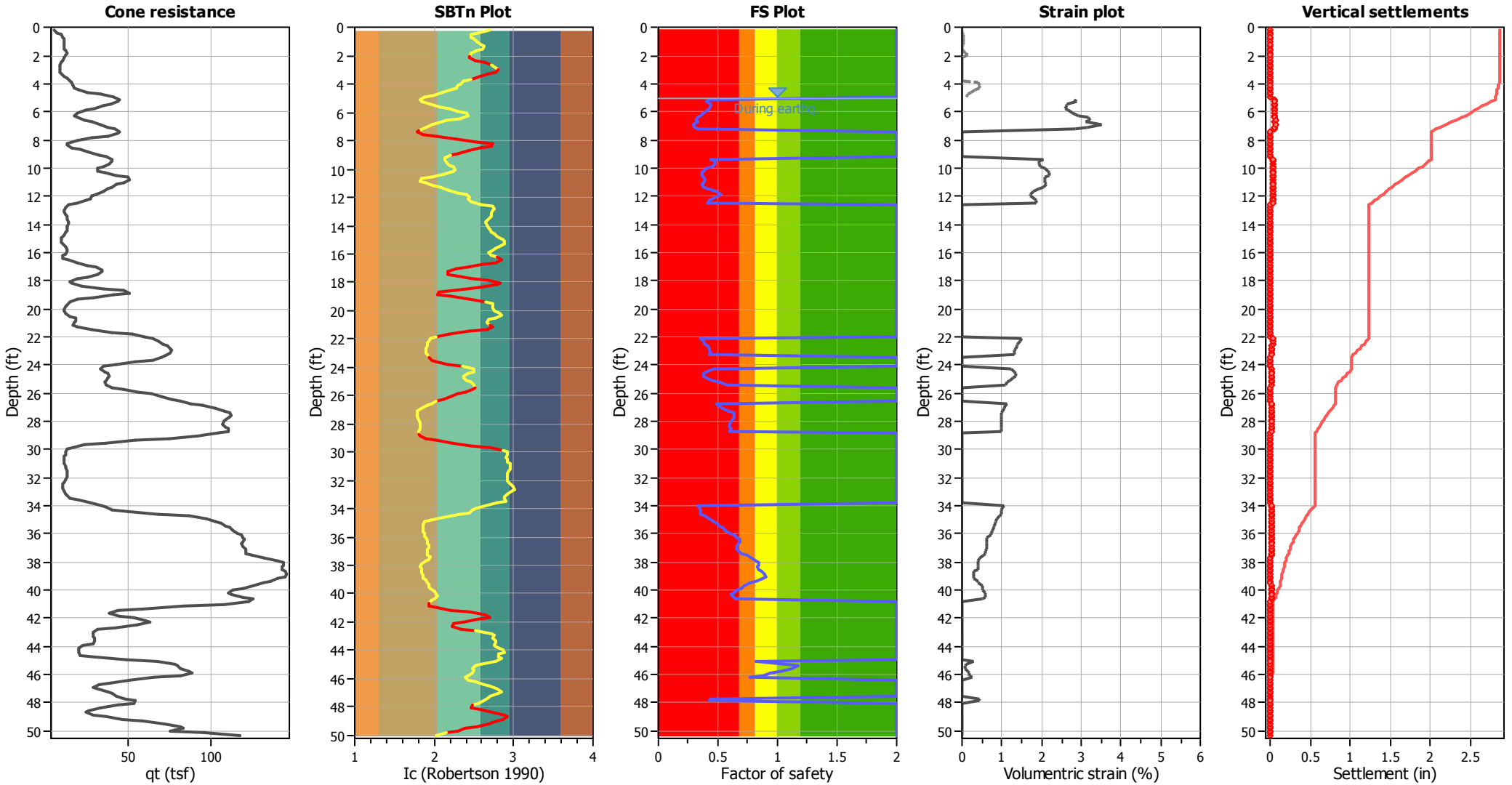




Input parameters and analysis data

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_σ 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)
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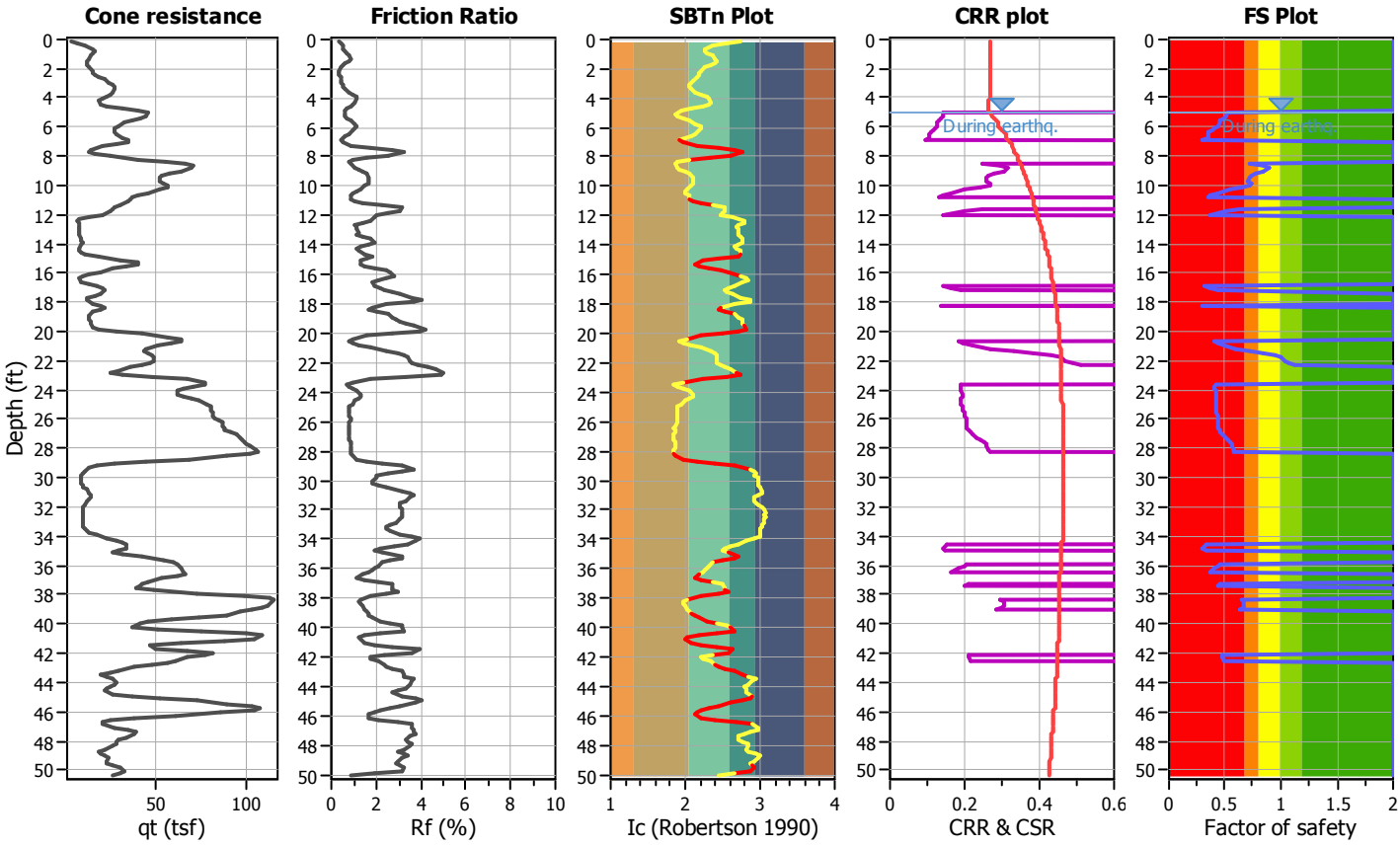
LIQUEFACTION ANALYSIS REPORT

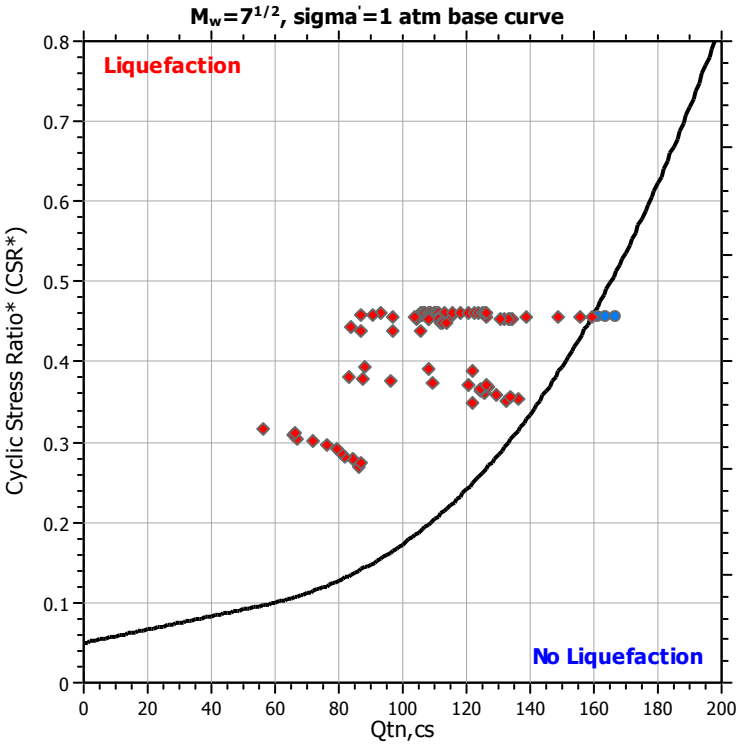
Project title : Shea Properties/Cypress **Location : Cypress, California**

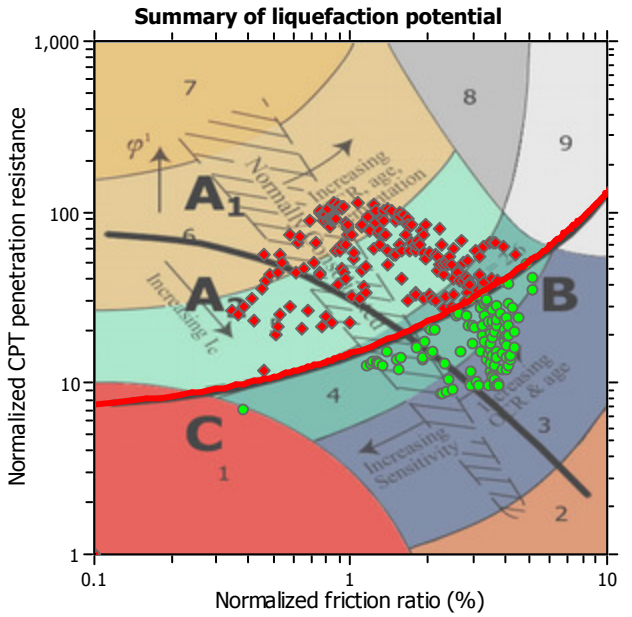
CPT file : CPT-12

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	5.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

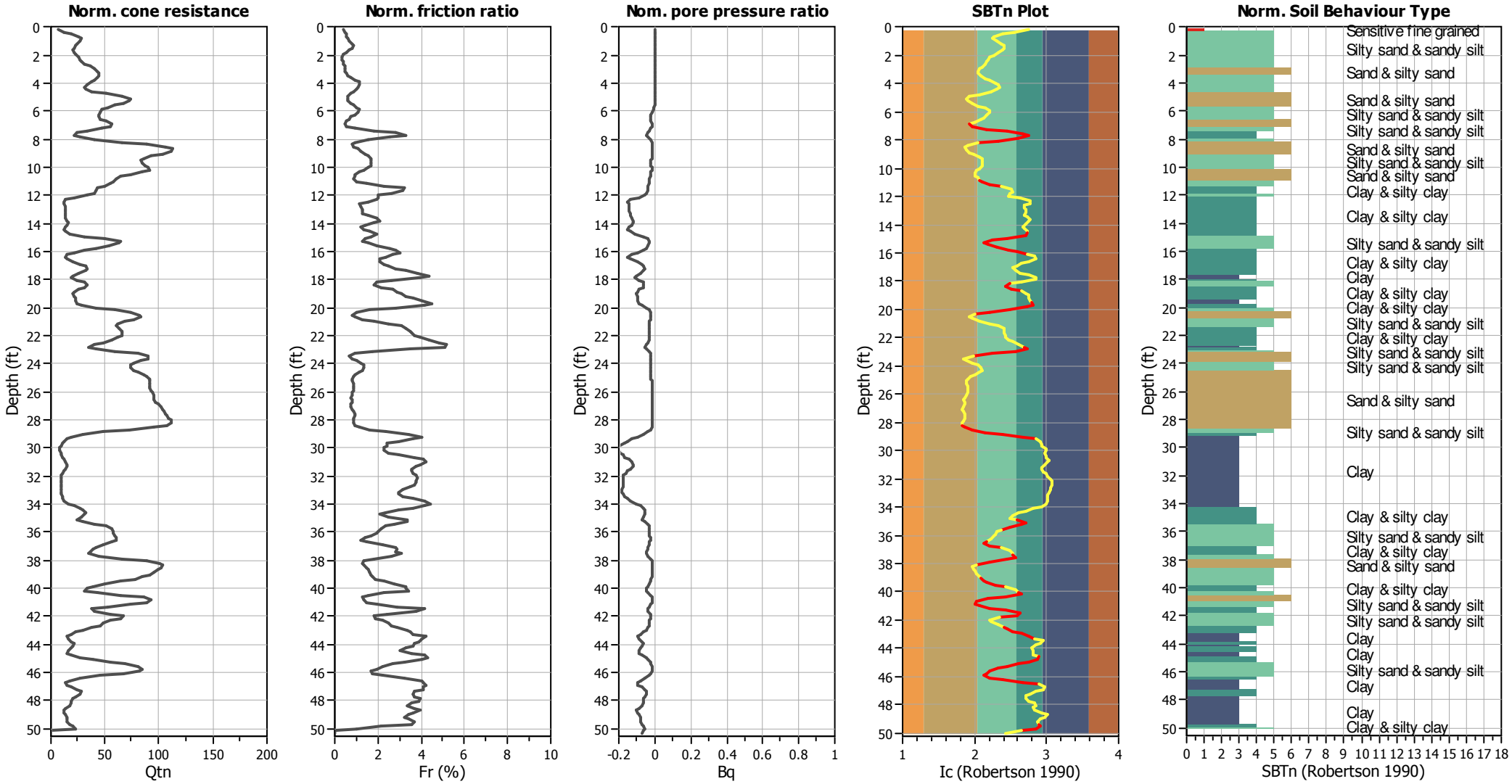






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
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CPT basic interpretation plots (normalized)



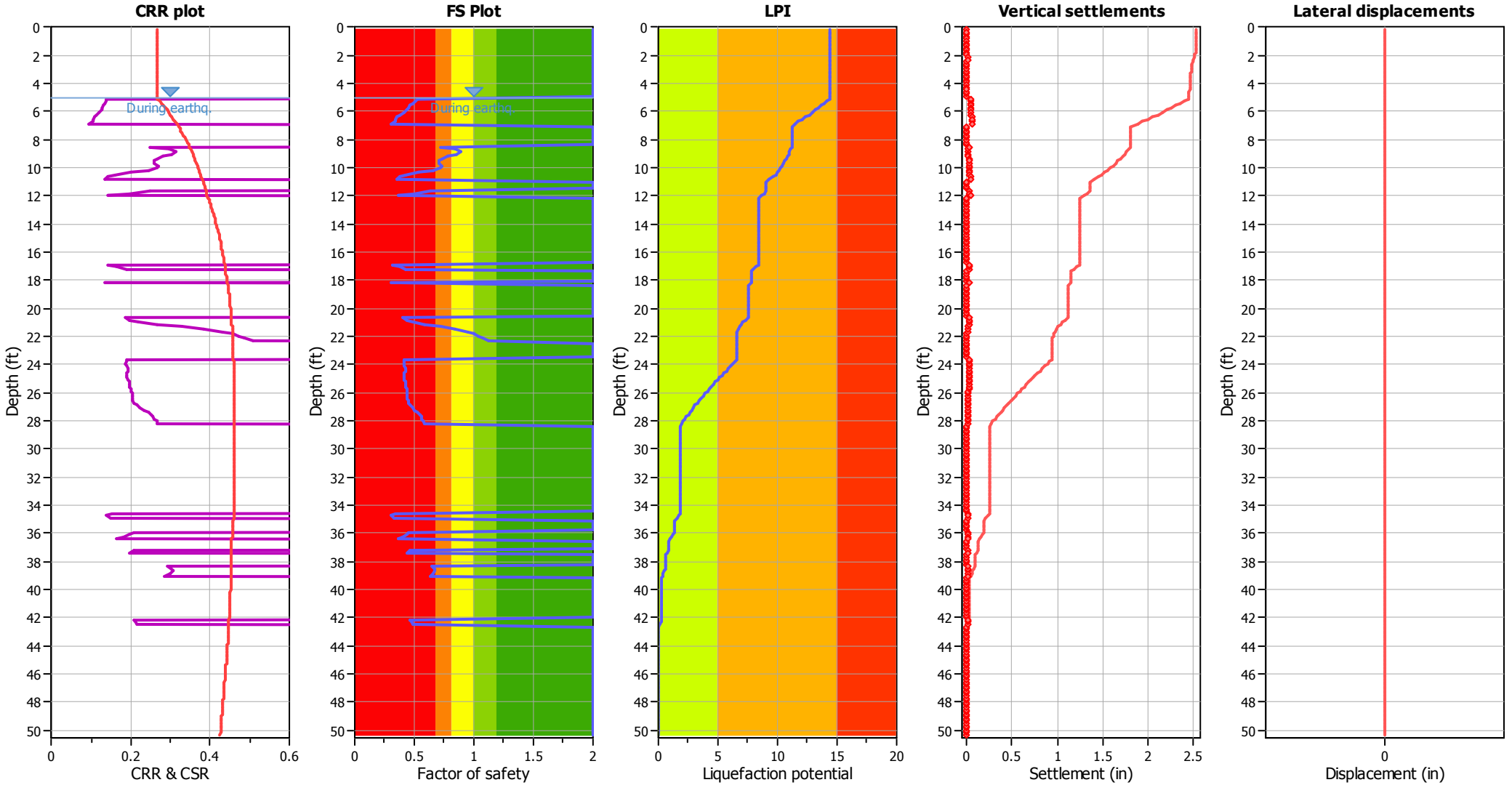
Input parameters and analysis data

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_σ 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
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SBTn legend

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9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

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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_σ 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

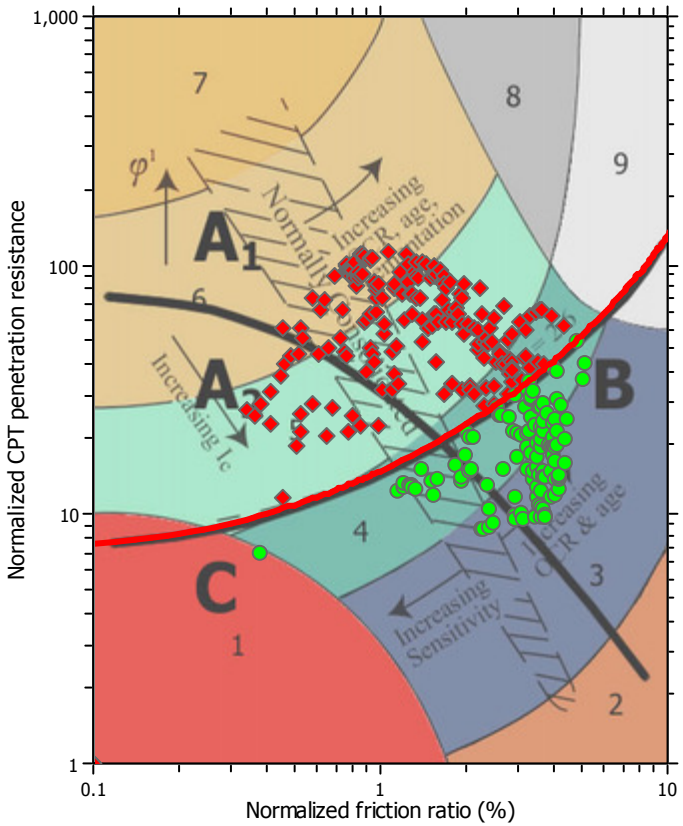
F.S. color scheme

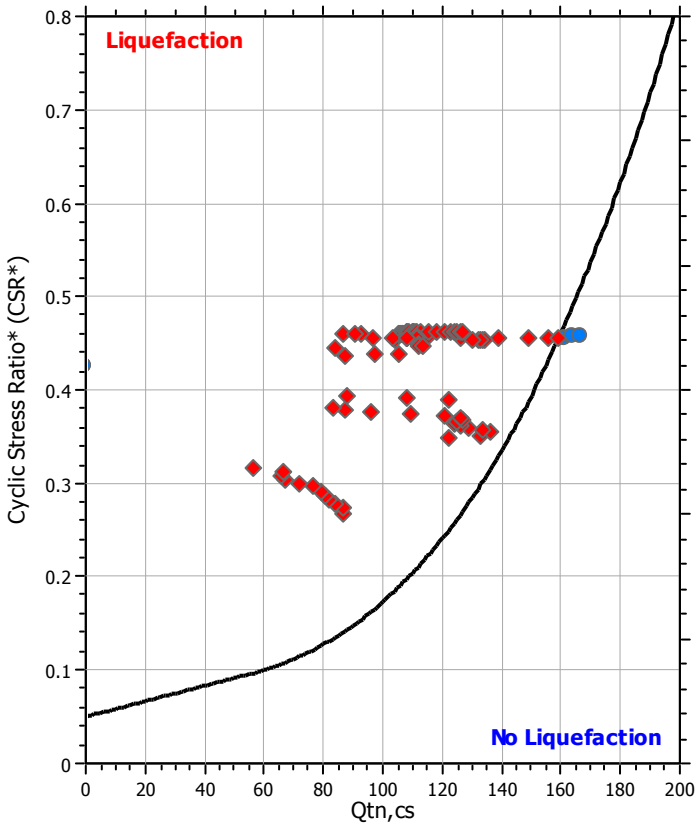
- Almost certain it will liquefy
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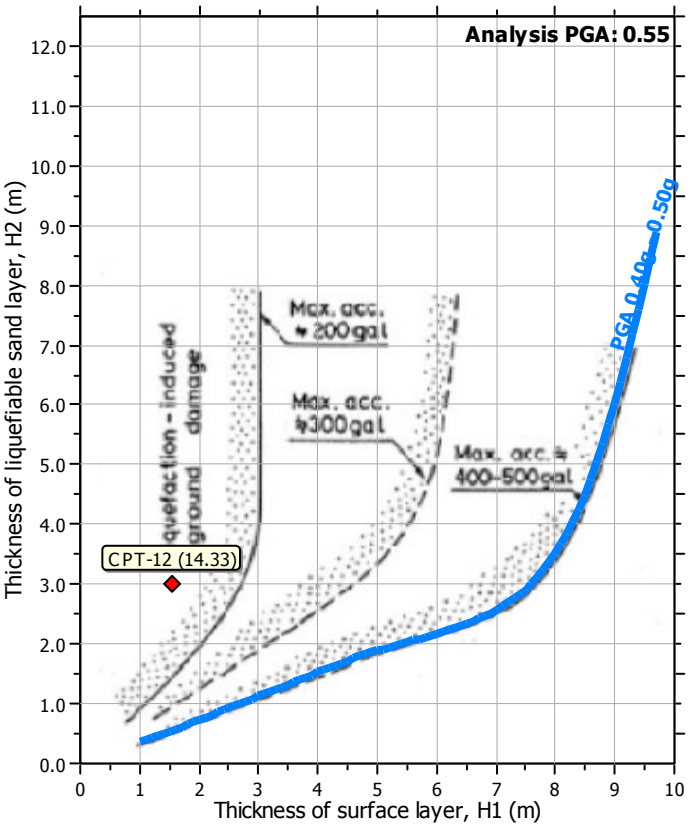
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



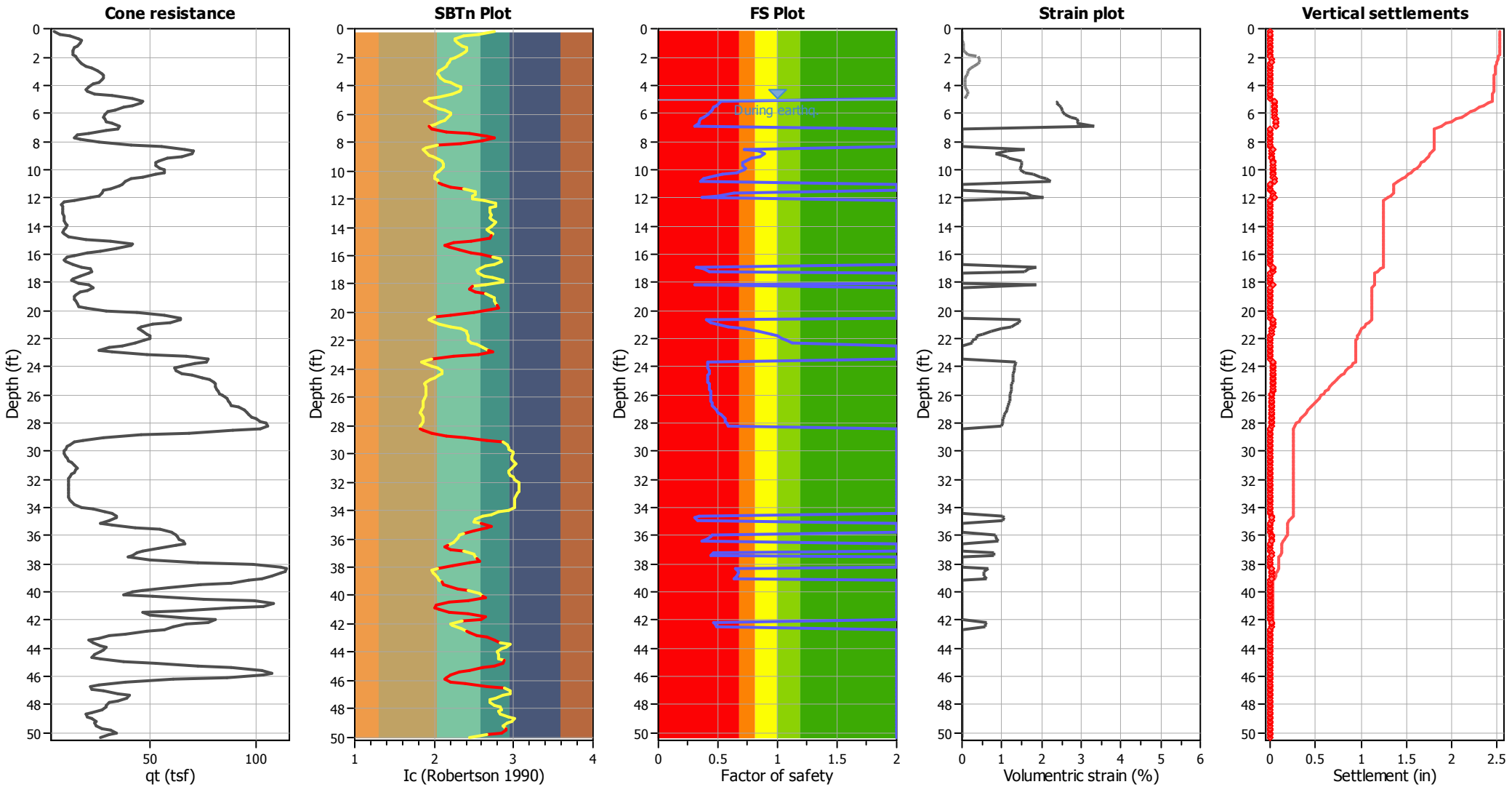




Input parameters and analysis data

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_σ 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

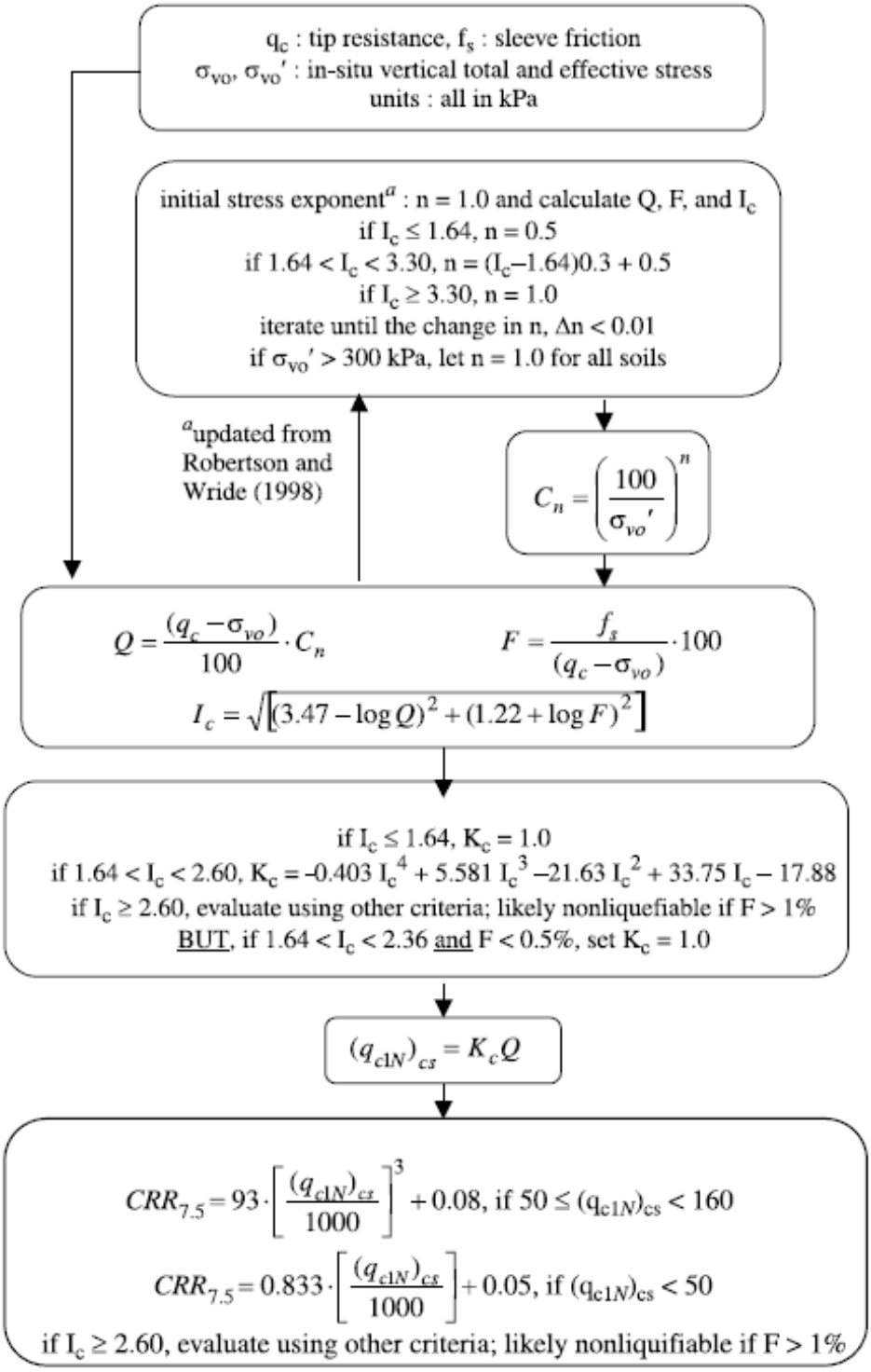


Abbreviations

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
Volumentric strain:	Post-liquefaction volumentric strain

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

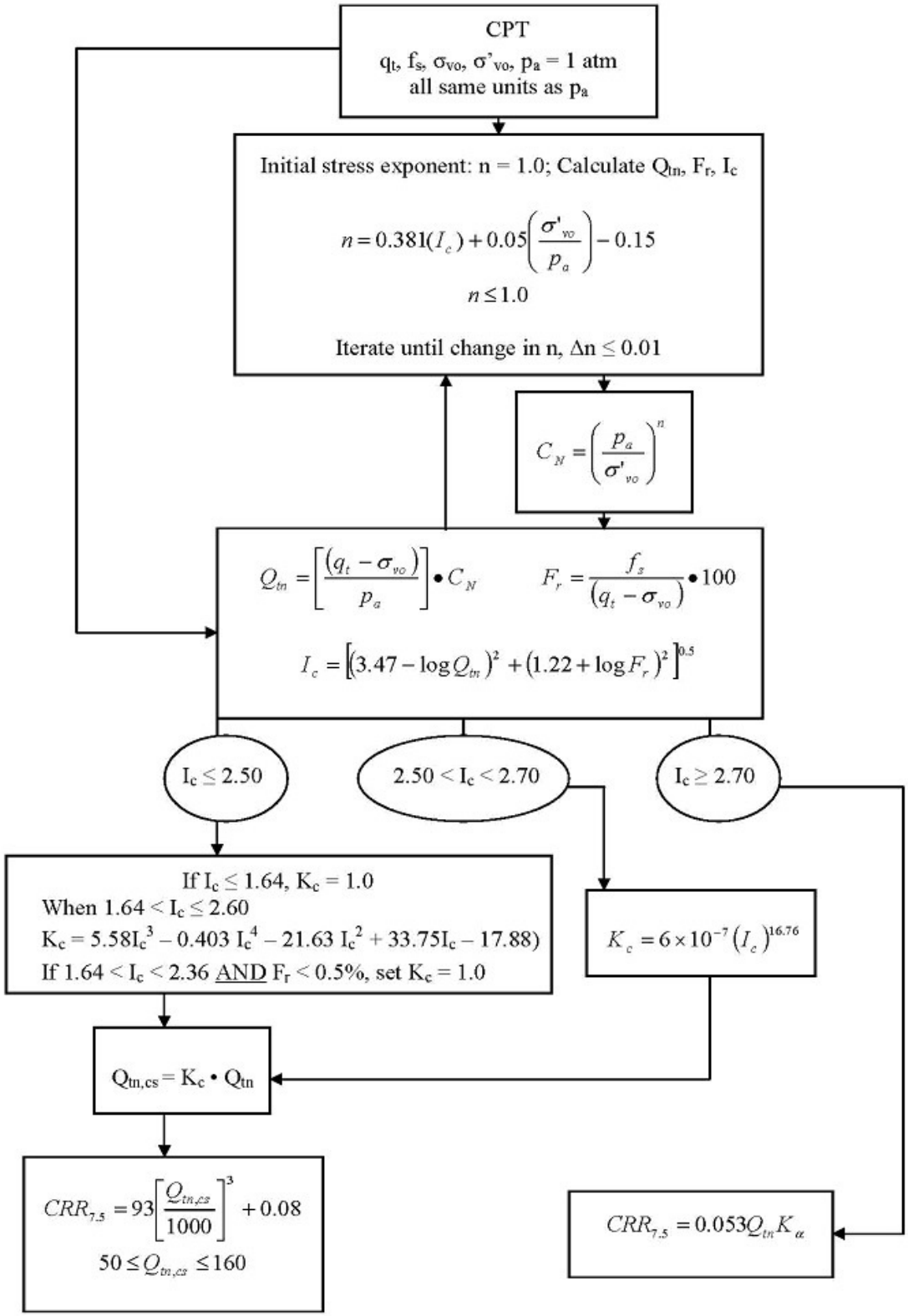
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

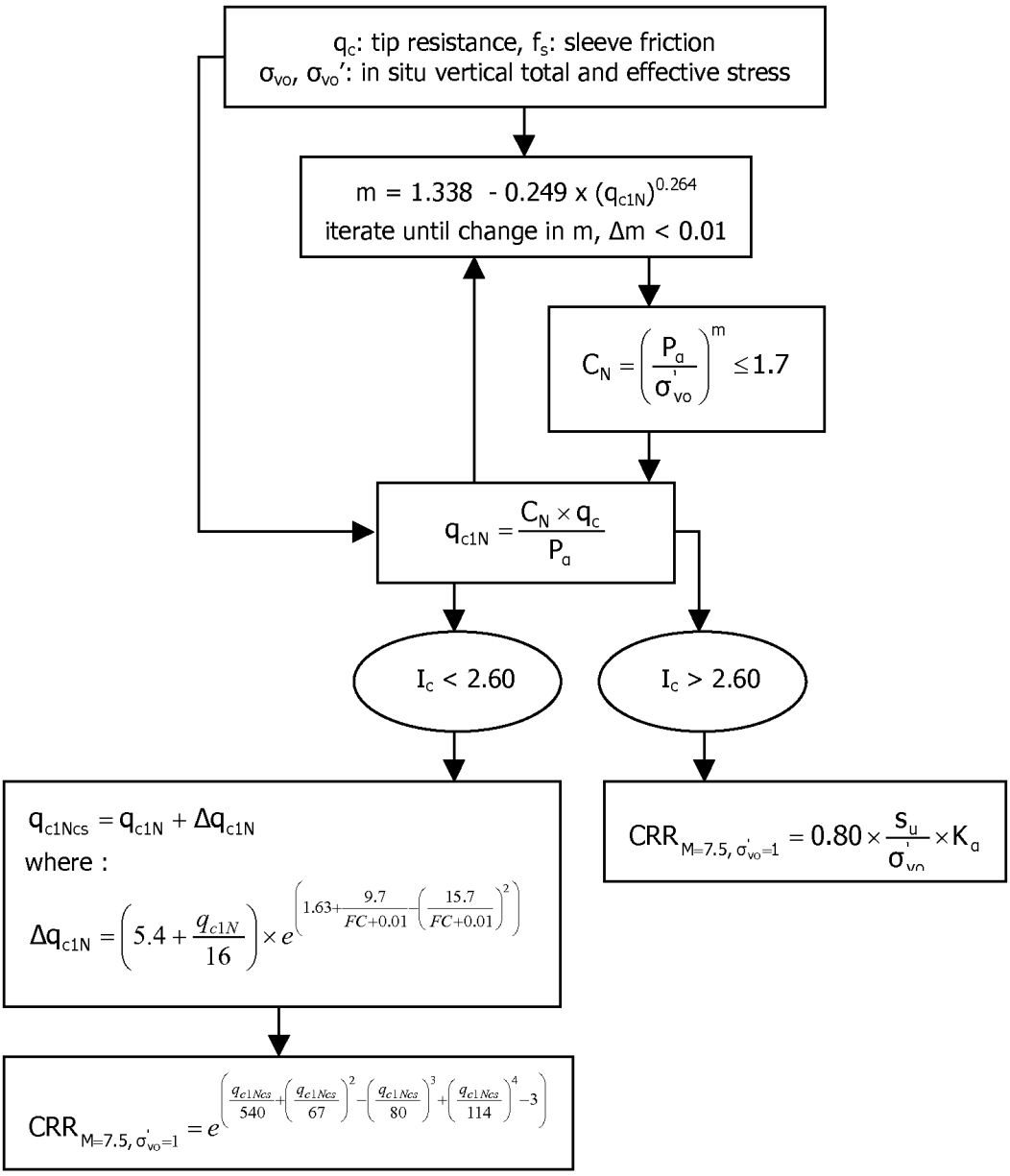
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

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[1]:

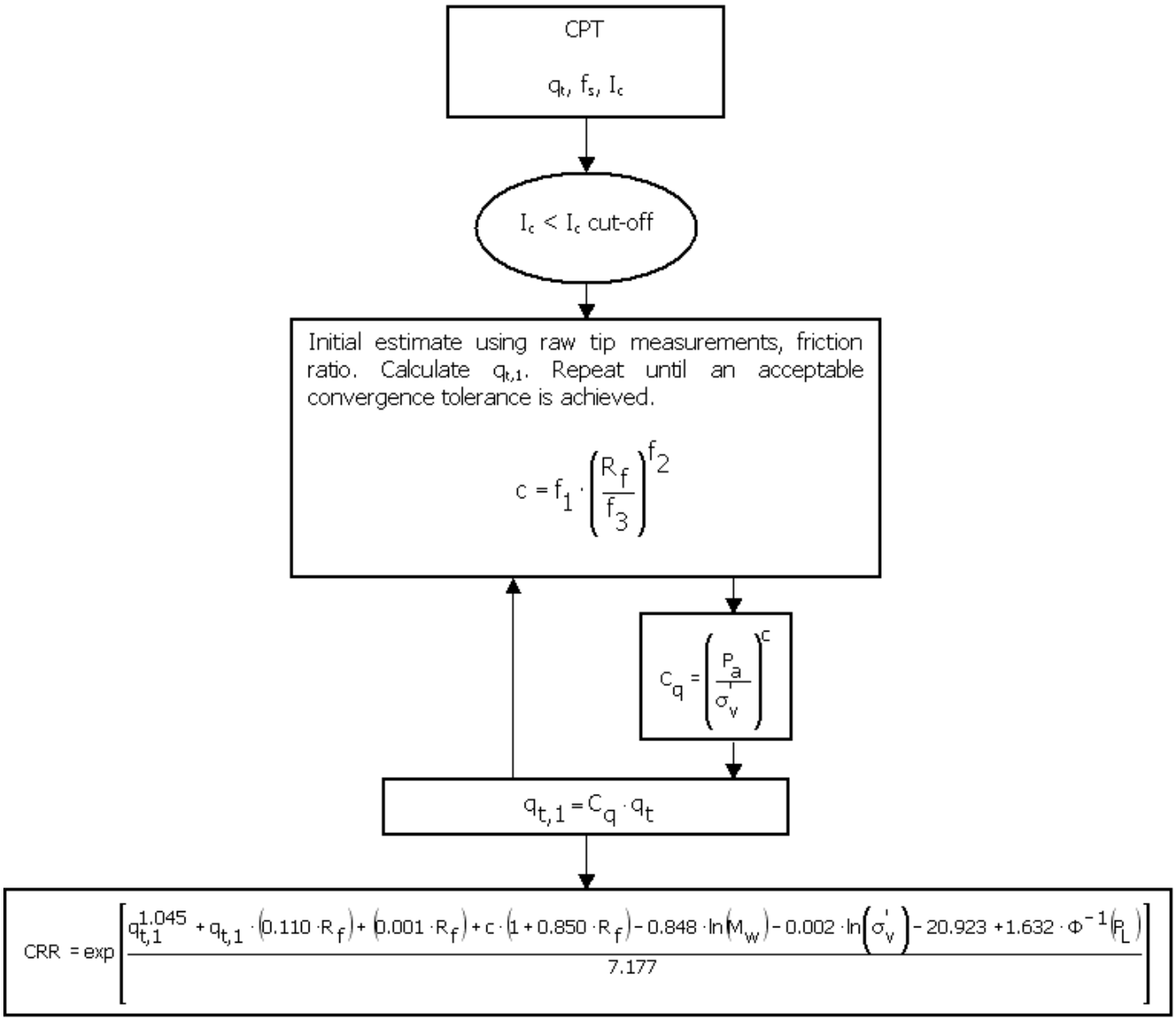


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

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)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{c1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

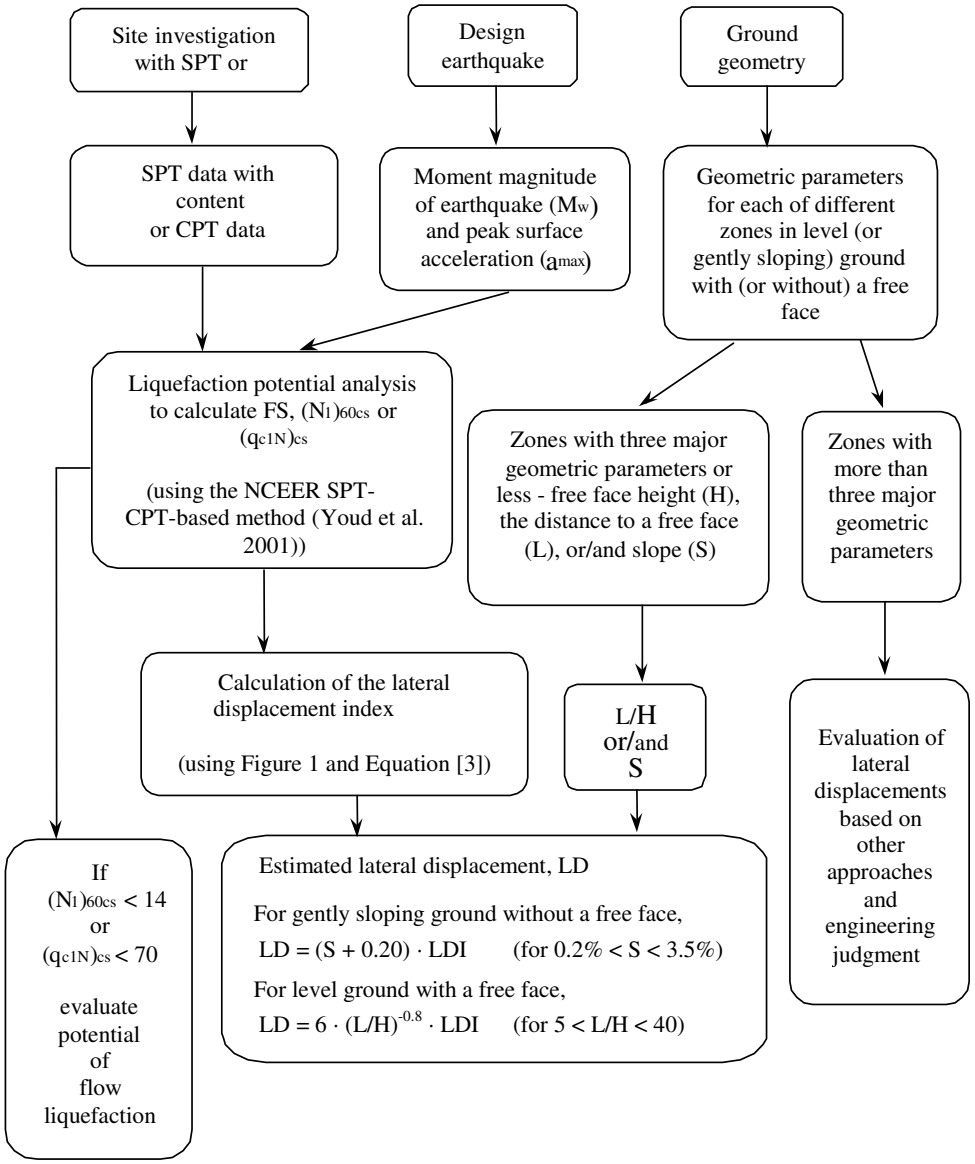
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

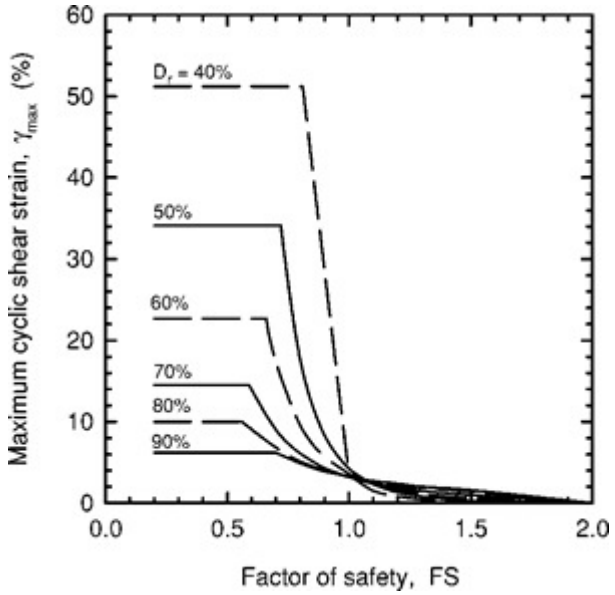
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



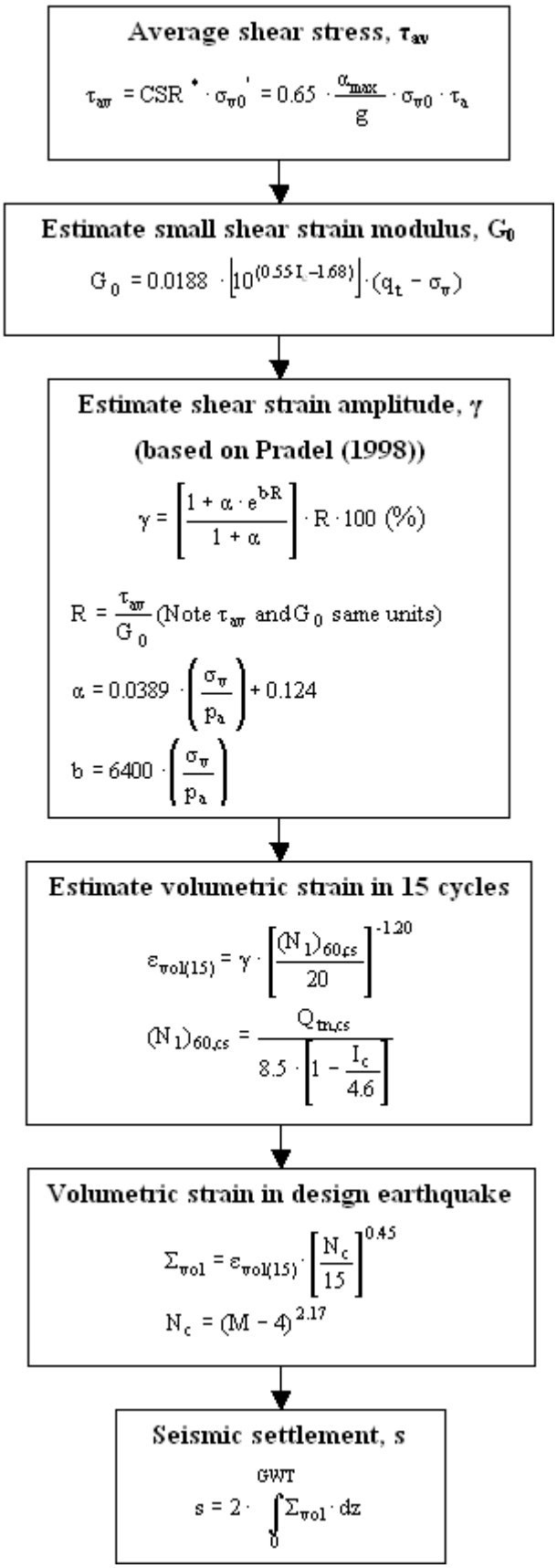
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "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 methology developed by Iwasaki (1982) and is adopted by AFPS.

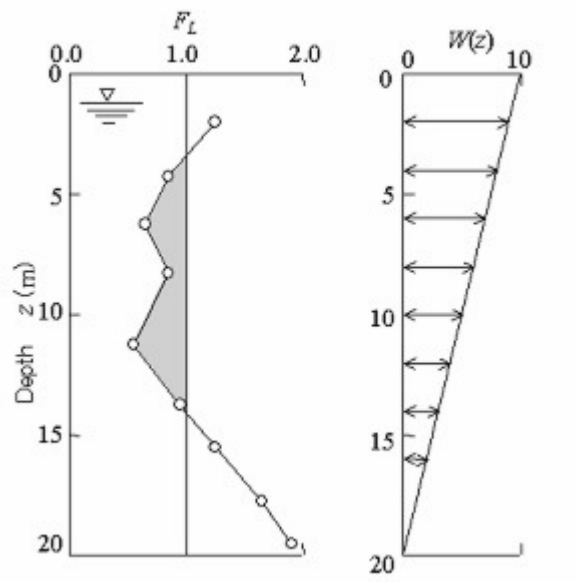
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5_z) \times F_L \times d_z$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment 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 <= 5 : Liquefaction risk is low
- 5 < LPI <= 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):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

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_shear) 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).

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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 **Table VIII.2**) circle one	(Large)		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_{BMP}		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 **VIII.2** (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 **Figure**	Y	N	N/A

Worksheet I: Summary of Groundwater-related Feasibility Criteria

	VIII.2)?	
14	Is the site within a selenium source area or other natural plume area (See Figure VIII.2)?	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 x imp) + 0.15*	C=	0.825	
4	Calculate runoff volume, V_{design}= *(C x* $d_{remainder}$ *x A x 43560 x (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

[1] $K_{observed}$ 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		
Closest ET Station	*Irvine*	*Santa Ana*	*Laguna*	*Irvine*	*Santa Ana*	*Laguna*
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		☑	
3	Landscape irrigation		☑	
4	Other:_____		☐	
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? (**Table X.8**)	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	

Provide supporting assumptions and citations for controlling demand calculation:

Site does not have enough toilets or landscape area to support harvested water BMPs

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 Voulme
DMA 1	90%	13.33	0.83	0.26	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.II 3-5-3-5. This development meets the higher density development, mixed use development, and in-fill development requirments.

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



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.
- 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.

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.

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

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 - Community-Specific Environmental Information 1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
(714) 433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County (714) 834-6752 or visit 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

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
(714) 708-1646 or visit 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

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

Printed on Recycled Paper



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**

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **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).

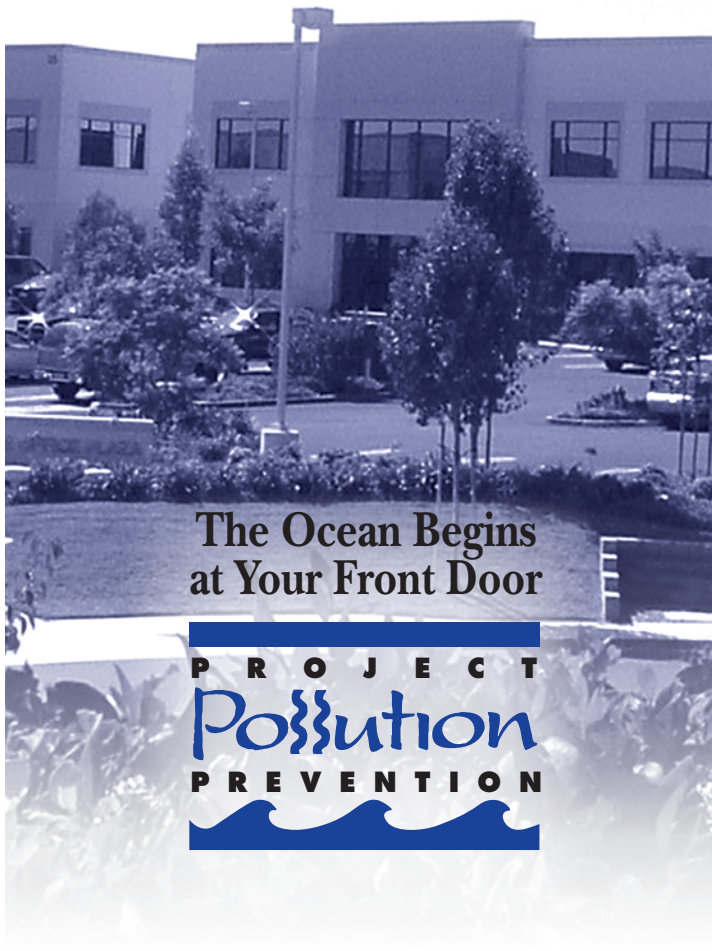
For emergencies, dial 911.

RECYCLE USED OIL

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Help Prevent Ocean Pollution:

Proper Maintenance Practices for Your Business



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

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.

Never Dispose of Anything in the Storm Drain.

- Recycle paints, solvents and other materials. For more information about recycling and collection centers, visit **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.**
- Properly label materials. Familiarize employees with Material Safety Data Sheets.

PROJECT Pollution PREVENTION



Clean 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

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.

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Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

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**.
- 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



Clean 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
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

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.

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Help Prevent Ocean Pollution:

Responsible Pest Control



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.

UC CE University of California Cooperative Extension

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.

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.

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.oclandfills.com

PROJECT Pollution PREVENTION

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[1]. 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.

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.

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

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.**

[1] 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

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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

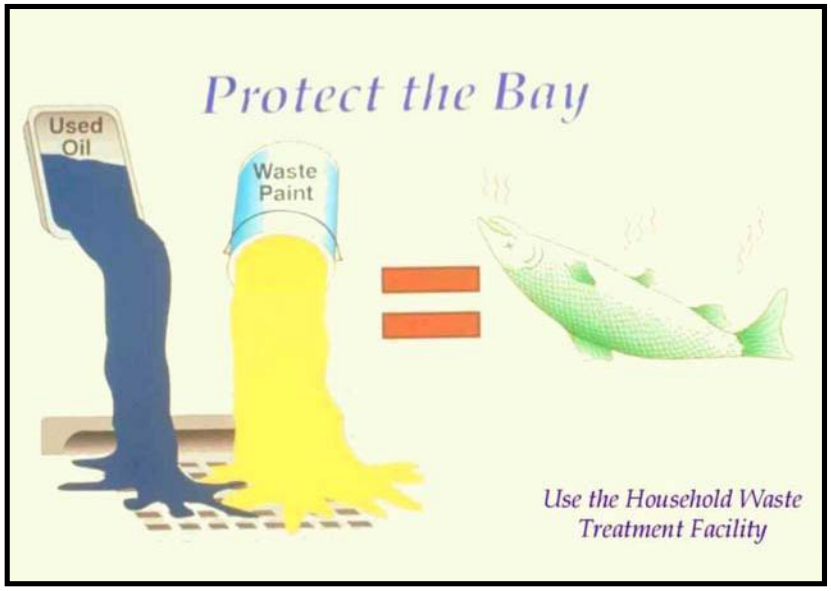
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Water Quality Handbook for Nurseries. Oklahoma Cooperative Extension Service. Division of Agricultural Sciences and Natural Resources. Oklahoma State University. E-951. September 1999.

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

Non-Stormwater Discharges SC-10



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.

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

CASQA California Stormwater Quality Association

Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Outdoor Loading/Unloading SC-30



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.

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

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Suggested Protocols

Loading and Unloading – General Guidelines

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Requirements

Costs

Costs should be low except when covering a large loading/unloading area.

Maintenance

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

Supplemental Information

Further Detail of the BMP

Special Circumstances for Indoor Loading/Unloading of Materials

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:

  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.

  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

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/

Waste Handling & Disposal SC-34



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

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Suggested Protocols

General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropyleneor hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Requirements

Costs

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

Supplemental Information

Further Detail of the BMP

Land Treatment System

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

Examples

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building & Grounds Maintenance SC-41



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

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- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

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SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

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.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

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http://www.co.clark.wa.us/pubworks/bmpman.pdf

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The Storm Water Managers Resource Center http://www.stormwatercenter.net

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Road and Street Maintenance SC-70



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑
Oxygen Demanding	☑

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.

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- 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 san bags 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 PM10). 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.

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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/menuofbmps/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.

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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

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.

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.

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

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.

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- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Outdoor Material Storage Areas SD-34



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

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

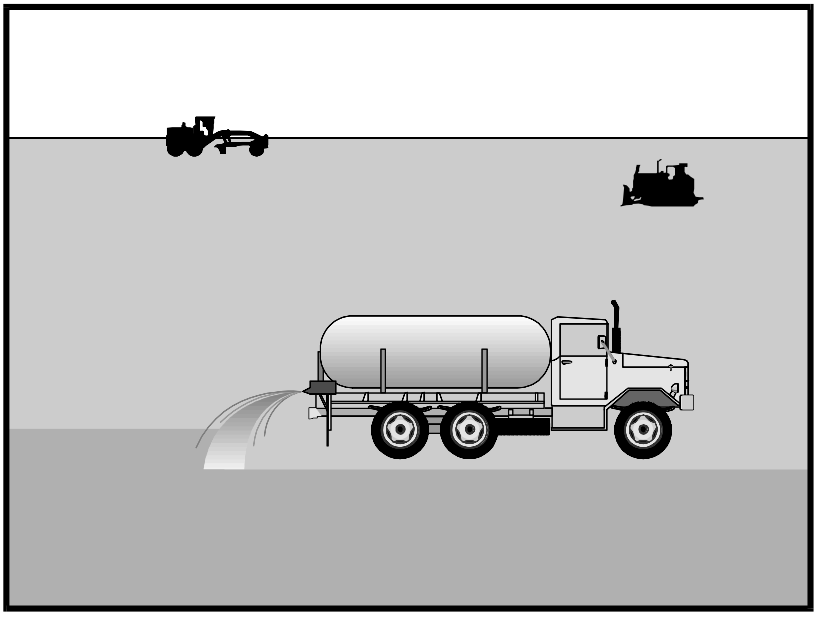
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Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

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.

Soil Binders EC-5



Categories		
EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
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

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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

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^2 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^2.

Costs

Costs vary according to the soil stabilizer selected for implementation. The following are approximate installed costs:

Soil Binder	Cost per Acre (2004)[1]	Estimated Cost per Acre (2009)[2]
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.

Table 1 Properties of Soil Binders for Erosion Control

Evaluation Criteria	Binder Type			
	Plant Material Based (Short Lived)	**Plant Material Based (Long Lived)**	**Polymeric Emulsion Blends**	**Cementitious-Based Binders**
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 (1)	Varies (1)	Varies (1)	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 propretary 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**
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 9: **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**

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™	www.rinkerstormceptor.com
FloGard® Dual-Vortex Hydrodynamic Separator	KriStar Enterprises Inc.	www.kristar.com
Contech® CDS[a]™	Contech® Construction Products Inc.	www.contech-cpi.com
Contech® Vortechs™	Contech® Construction Products Inc.	www.contech-cpi.com
Contech® Vorsentry™	Contech® Construction Products Inc.	www.contech-cpi.com
Contech® Vorsentry™ HS	Contech® Construction Products Inc.	www.contech-cpi.com
BaySaver BaySeparator	Baysaver Technologies Inc.	www.baysaver.com

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

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

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
	Non-Structural Source Control BMPs			
Y	**N1. Education for Property Owners, Tenants and Occupants**	UPON NEW LEASE	N/A	Property Owner Association
N	**N2. Activity Restriction**		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	**N3. Common Area Landscape Management**	WEEKLY WITH ROUTINE LANDSCAPING ACTIVITY	YES, STANDARD LANDSCAPE MANAGEMENT	Property Owner Association
Y	**N4. BMP Maintenance**	SEE BELOW		Property Owner Association
N	**N5. Title 22 CCR Compliance**			
Y	**N7. Spill Contingency Plan**	AS NEEDED	OWNER TO KEEP SPILL KIT ON-SITE	Property Owner Association
N	**N8. Underground Storage Tank Compliance**			
N	**N9. Hazardous Materials Disclosure Compliance**			
N	**N10. Uniform Fire Code Implementation**			
Y	**N11. Common Area Litter Control**	WEEKLY WITH STANDARD MAINTENANCE	KEEP RECEPTICLES IN WORKING ORDER, PICK-UP LOOSE TRASH	Property Owner Association
Y	**N12. Employee Training**	NEW MAINTENANCE HIRES TO RECEIVE THIS DOCUMENT	N/A	Property Owner Association
Y	**N13. Housekeeping of Loading Docks**	Weekly with standard maintenance.	Pick up loose trach, maintain spill control kit in loading area.	Property Owner Association
Y	**N14. Common Area Catch Basin Inspection**	QUATERLY AND AFTER STORMS IN EXCESS OF 1”	REMOVE DEBRIS AND TRASH	Property Owner Association
Y	**N15. Street Sweeping Private Streets and Parking Lots**	MONTHLY	N/A	Property Owner Association
N	**N17. Retail Gasoline Outlets**			
	Structural Source Control BMPs			
Y	**Provide Storm Drain System Stenciling and Signage**	ANNUAL	REPAINT AS NECESSARY	Property Owner Association
Y	**Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction**	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: _____

BMP Name (As Shown in O&M Plan)	Brief Description of Implementation, Maintenance, and Inspection Activity Performed

Exhibit B

Inspection and Maintenance Form

BMP DEVICE			**INSPECTION ITEMS**			**MAINTENANCE ITEMS**		**NOTES:**
Modular Wetlands	Inspection Date	Inspector's Name	Debris, Trash, & Mulch at surface (list if any)	Inspect MWS Unit and internal components for damage and obstructions (list below)	Filter Media Evaluation	Replace Mulch	Evaluate Healthiness of Plant	Manufacturer's Rec. Inspection Rate (2 times/year)
Modular Wetlands								

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

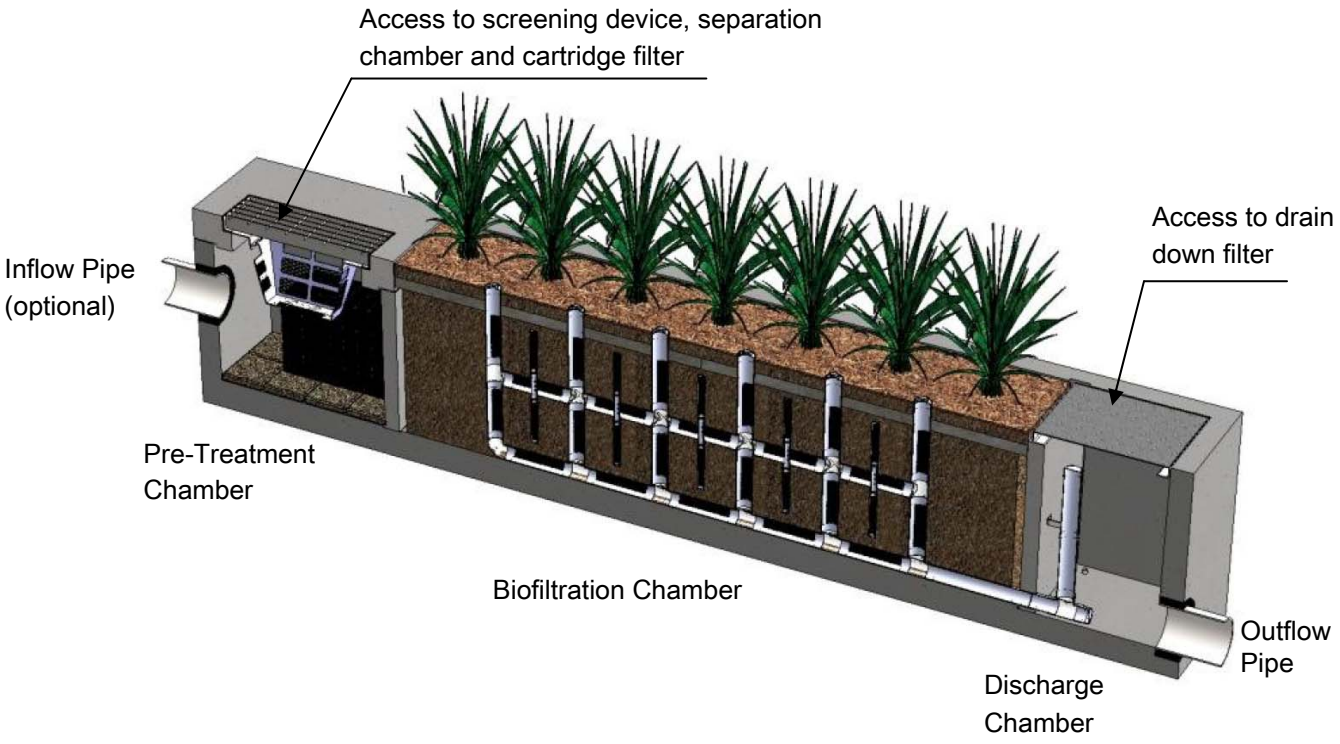
As needed, add proof of external training (e.g., course completion certificates, credentials for QSP, QSD).

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

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

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

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?			
Working Condition:			
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.			
Other Inspection Items:			
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:

2972 San Luis Rey Road, Oceanside, CA 92058 P (760) 433-7640 F (760) 433-3176

Maintenance Report



Modular Wetland System, Inc.
P. 760.433-7640
F. 760-433-3176
E. Info@modularwetlands.com

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: Long:	MWS Catch Basins						
		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:

2972 San Luis Rey Road, Oceanside, CA 92058 P. 760.433.7640 F. 760.433.3176

WASHINGTON STATE DEPARTMENT OF ECOLOGY

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 (SWMMEW) 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 SWMMWW, the wet season in western Washington is October 1 to April 30. According to SWMMEW, 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:	*PO. 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

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

Revision History

Date	**Revision**
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

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OPERATION AND MAINTENANCE

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.

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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/d efault.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

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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.

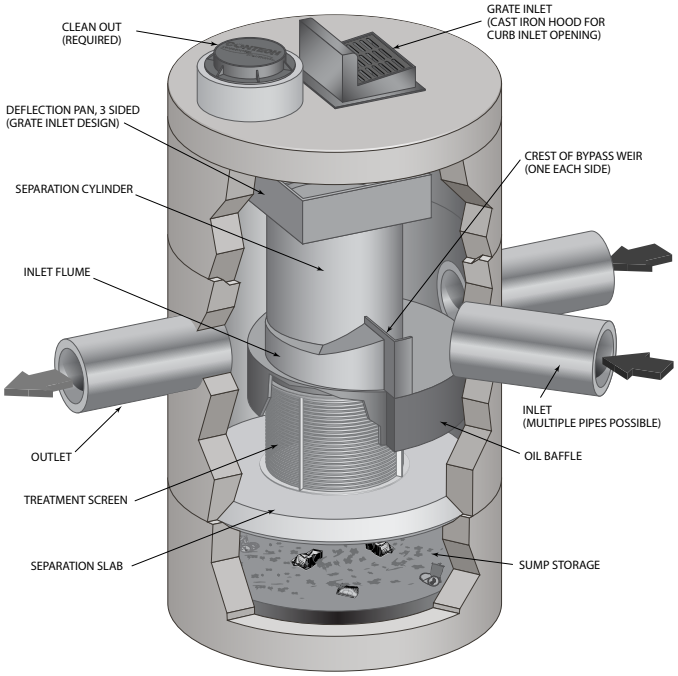
Operation Overview

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 and Probabilistic Method is used when a specific removal efficiency of the net annual sediment load is required.

Typically in the Unites 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 (d50 = 20 to 30 μm) covering a wide size range (Coefficient of Uniformity, C 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 d50 (d50 for NJDEP is approximately 50 μm) (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 (d50) of 106 microns. The PSDs for the test material are shown in Figure 1.

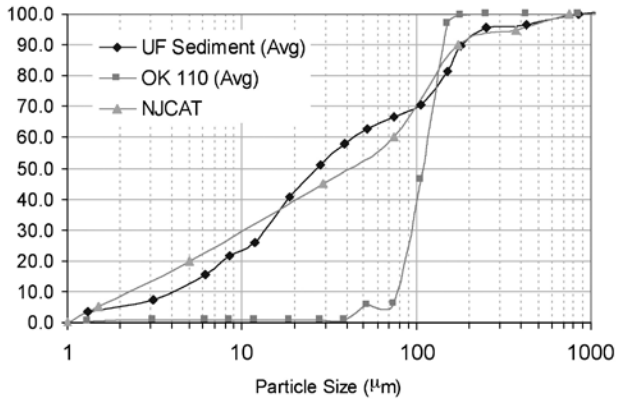


Figure 1. Particle size distributions

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.

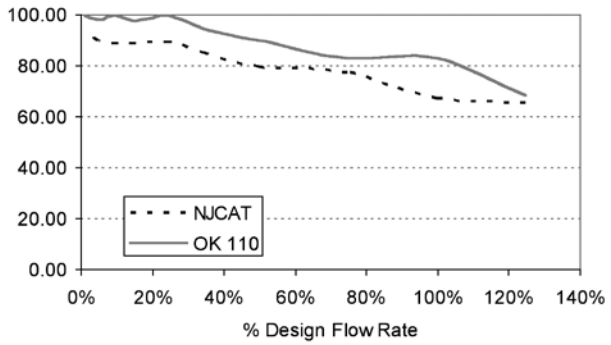


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

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 μm).

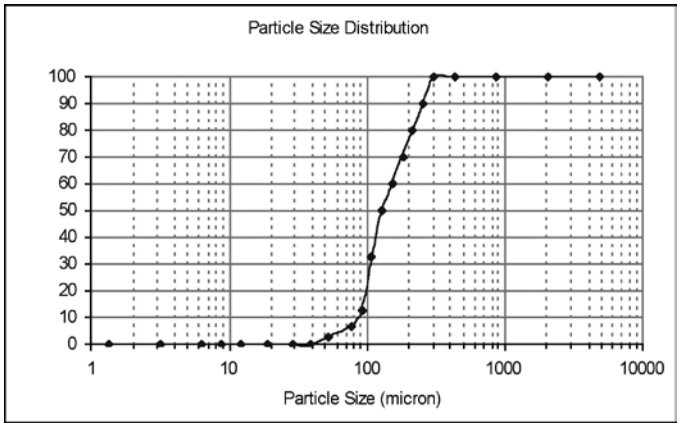


Figure 3. WASDOE PSD

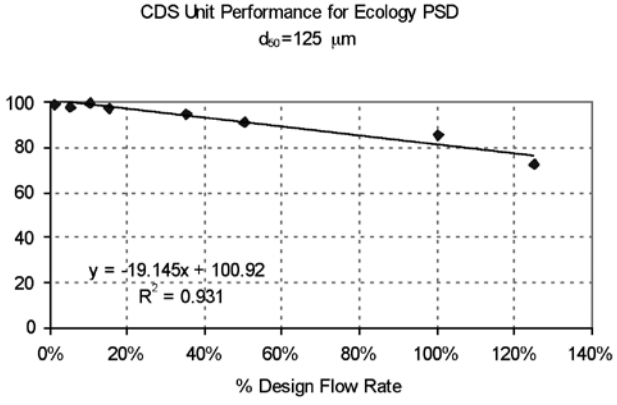


Figure 4. Modeled performance for WASDOE PSD.

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 allows 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 weather 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 systems 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.

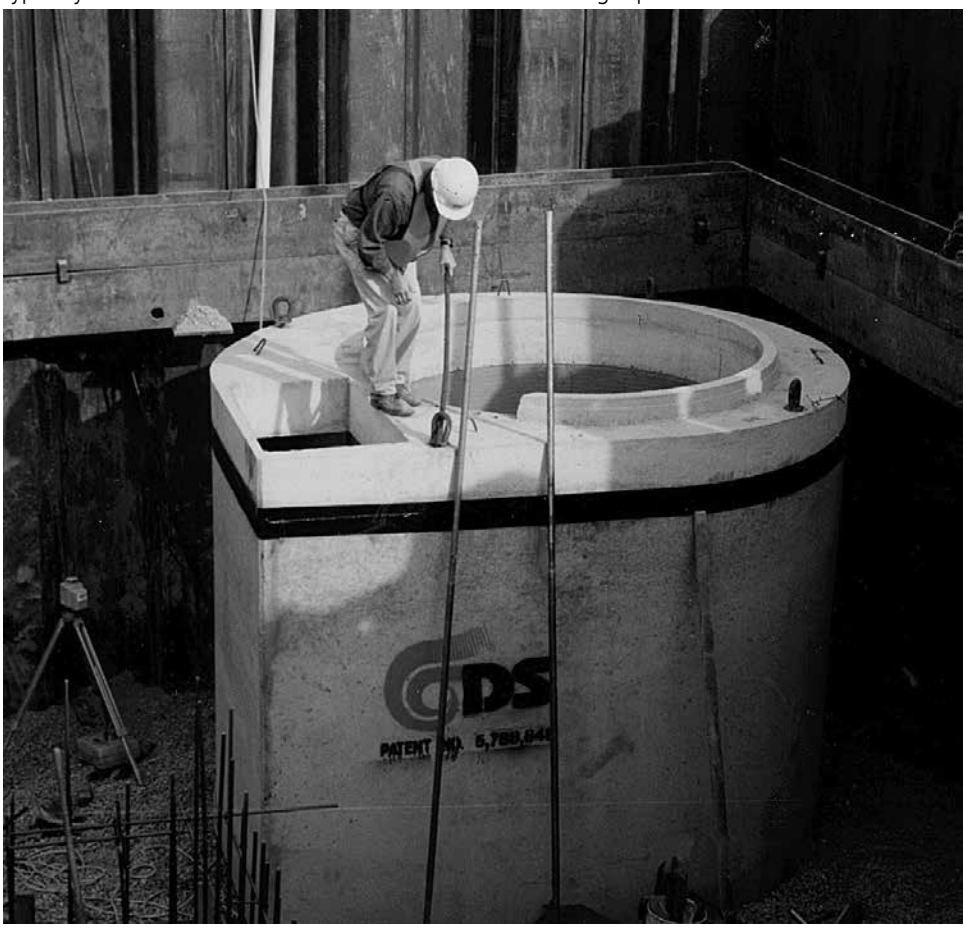
Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material 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^3	m^3
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: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

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.
- Site-specific design support is available from our engineers.

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RECYCLED PAPER

CONTECH®
ENGINEERED SOLUTIONS

CDS®
Hydrodynamic Separator



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 90-180º angles	Design flexibility
Clear access to sump and stored pollutants	Fast, easy maintenance



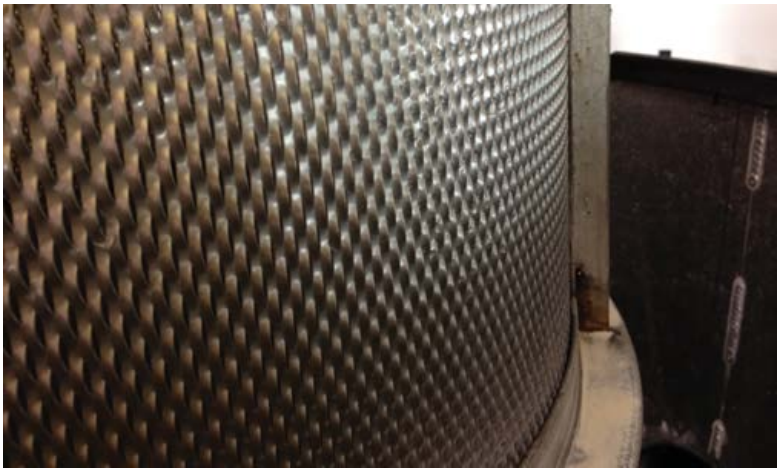
APPLICATION TIPS

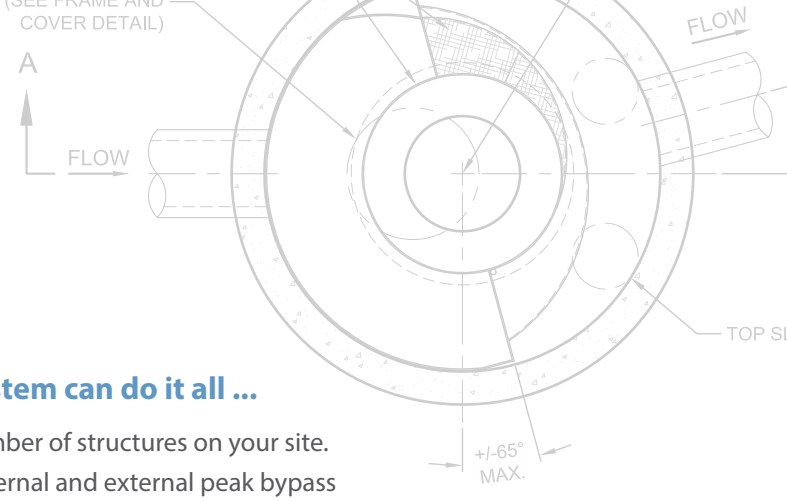
- Because of its internal peak bypass weirs, CDS systems can provide cost savings by eliminating the need for additional structures.
- Pretreating detention, infiltration, and green infrastructure practices with CDS can protect downstream structures and provide for easy maintenance.
- The CDS an ideal 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.

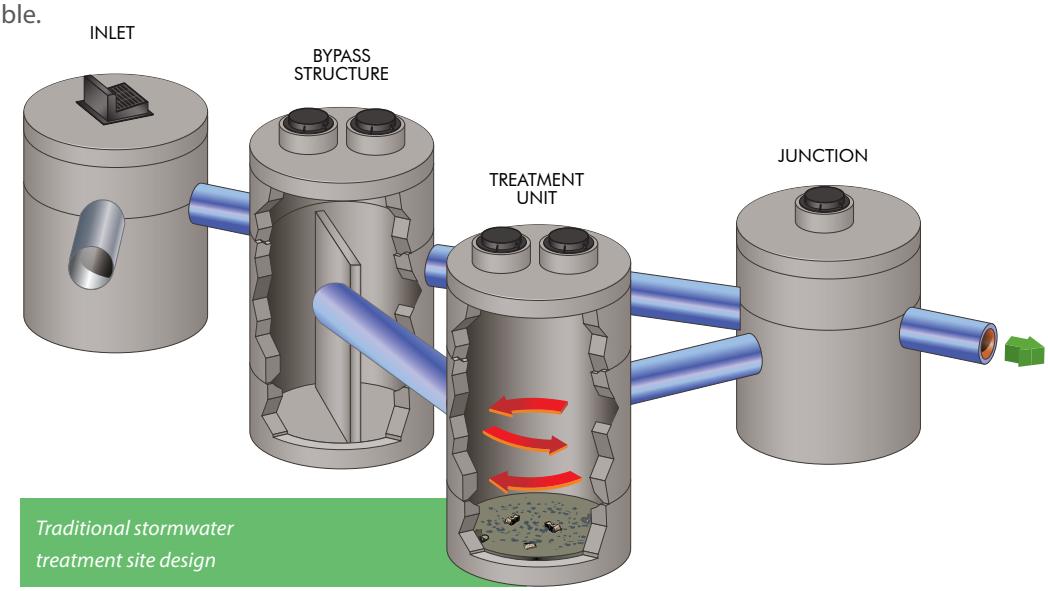




CDS® Design Configuration

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.

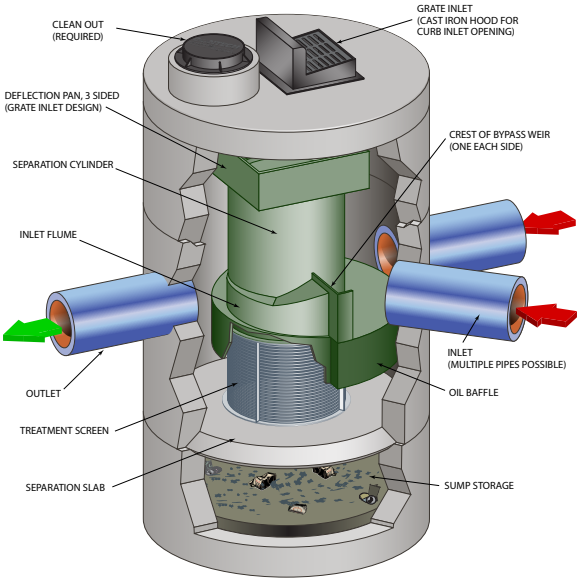


Traditional stormwater treatment site design

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

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

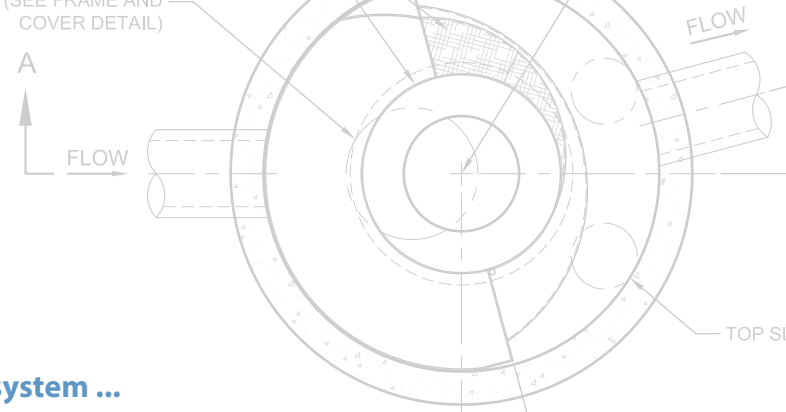
Select CDS® Certifications and Verifications

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.



Most CDS® units can easily be cleaned within thirty minutes.

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.

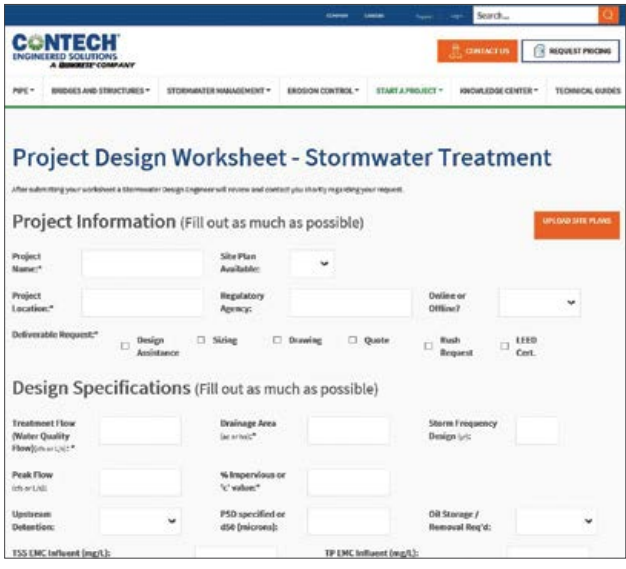
RECOMMENDATIONS FOR CDS MAINTENANCE

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.

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



Learn More:
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

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Bio Clean

A Forterra Company

UrbanPond™

A Stormwater Storage Solution



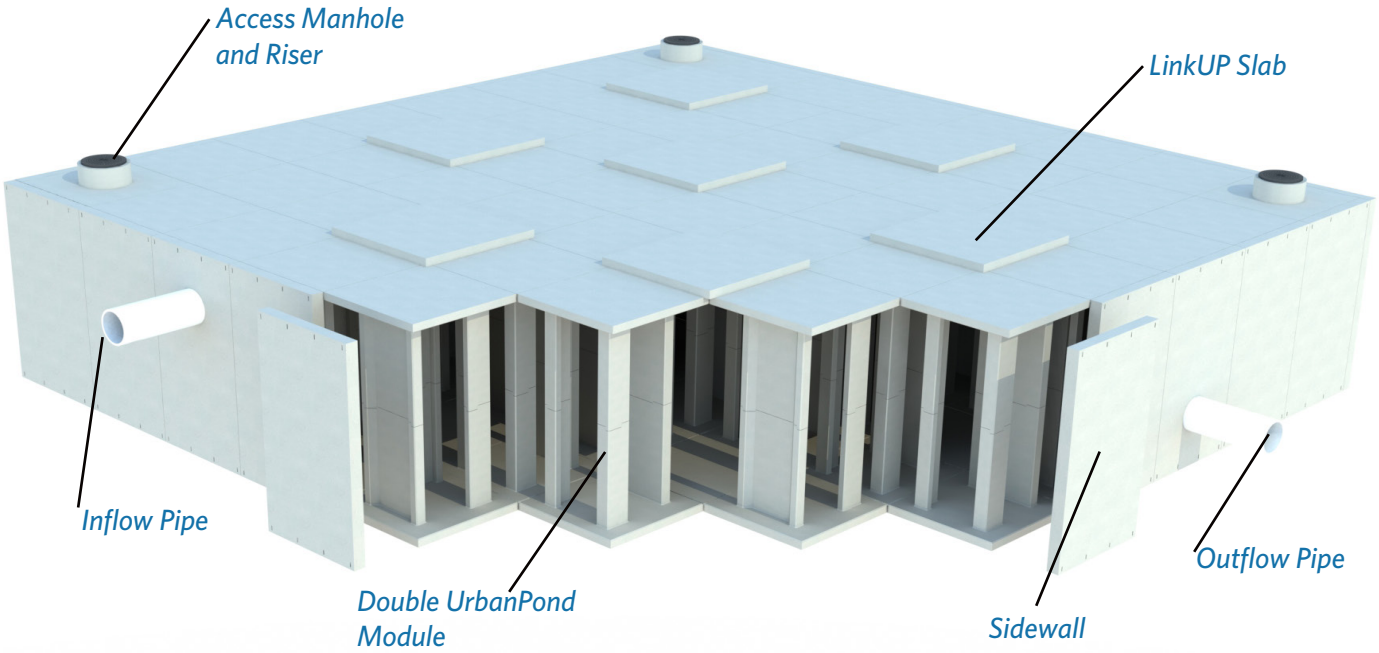
Bio Clean
A Forterra Company

STORMWATER STORAGE SOLUTIONS

UrbanPond™

A Breakthrough System for Managing Stormwater Runoff

MAINTENANCE



Bio Clean Environmental Services, Inc.
398 Via El Centro
Oceanside, CA 92058

www.BioCleanEnvironmental.com
p: 760.433.7640
f: 760.433.3176

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 though 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.

Bio Clean
A Forterra Company

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:

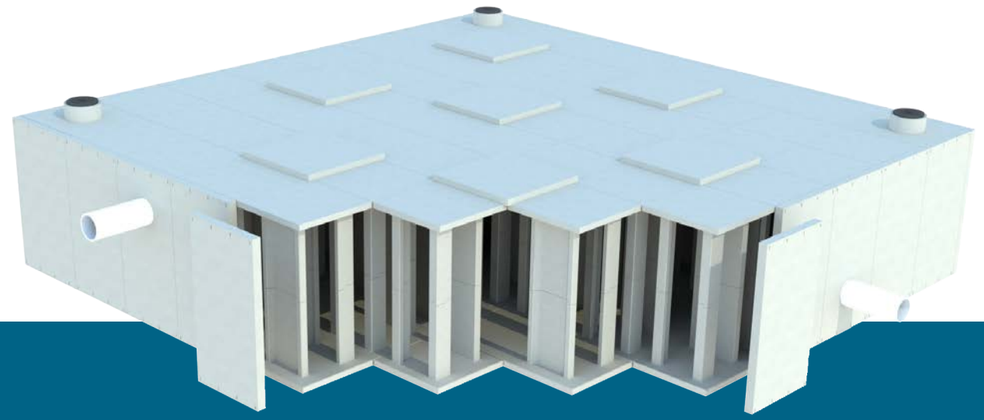
398 Via El Centro, Oceanside, CA 92058 P. 760.433.7640 F. 760.433.3176

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

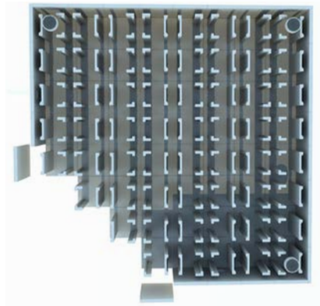
DOUBLE URBANPOND

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

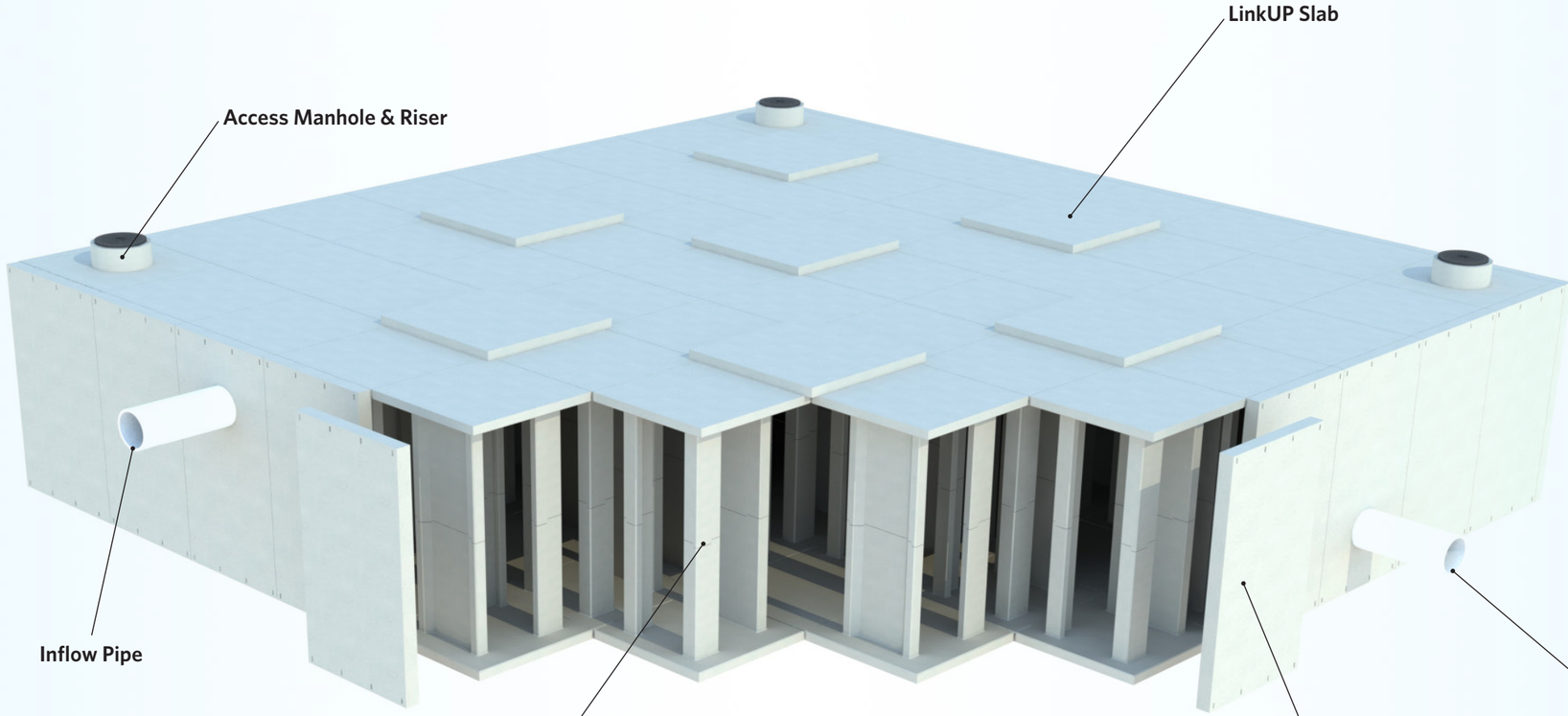
Available in heights from 2 ft. to 7 ft.



LINKUP SLAB

LinkUP Slabs span the open cavities in a 9-module array.





DOUBLE URBANPOND MODULE

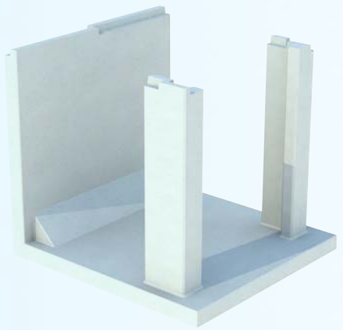
Available in heights from 4 ft. to 14 ft.



UrbanPond can be engineered with optional infiltration openings.

SIDE MODULE

Built-in perimeter wall



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 conveniently 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.





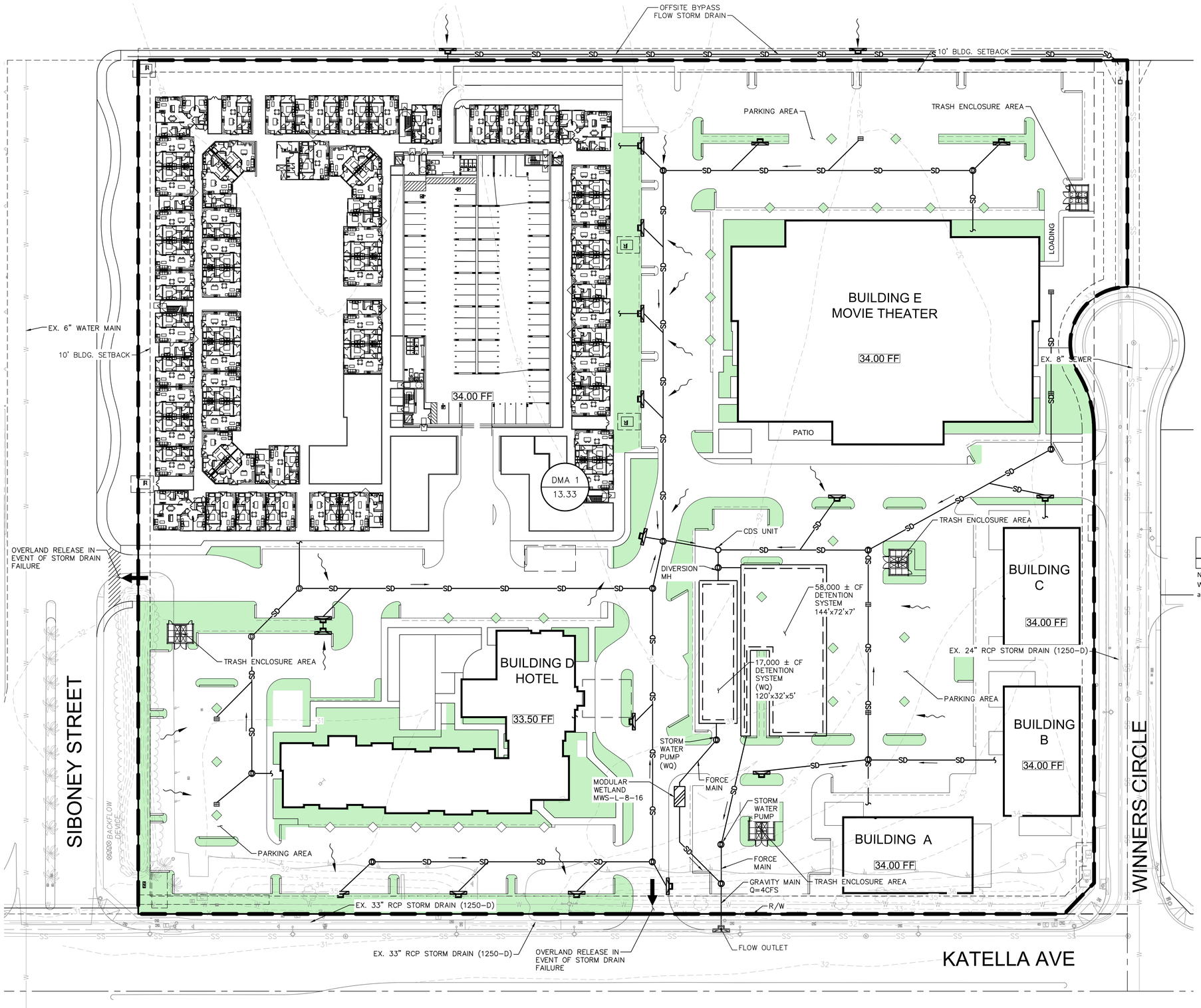
Bio Clean
A Forterra Company

5796 Armada Drive Suite 250
Carlsbad, CA 92008
855.566.3938
stormwater@forterrabp.com
biocleanenvironmental.com

011519R1A

ATTACHMENT H

CONCEPTUAL WQMP SITE PLAN



LEGEND

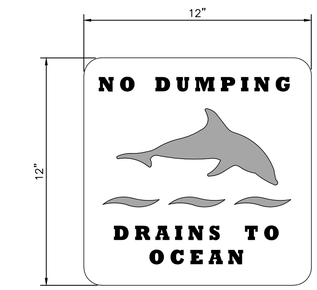
- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- 147 — EXISTING CONTOURS
- 147 — PROPOSED CONTOURS
- FLOW LINE
- EXISTING STORM DRAIN
- SD — PROPOSED STORM DRAIN
- (XX.XX TC) (XX.XX FS) — EXISTING SPOT GRADE
- XX.XX TC XX.XX FS — PROPOSED SPOT GRADE
- EXISTING CATCH BASIN
- 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 — DRAINAGE MANAGEMENT AREA LABEL
- 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 Voulme
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.II 3-5-3-5. This development meets the higher density development, mixed use development, and in-fill development requirments.



STENCIL DETAIL
N.T.S.
REV. DATE: 08.28.2015 (A)

ALL UTILITY AND DRAINAGE LINE LOCATIONS, DEPTHS, AND SIZES ARE APPROXIMATE.

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

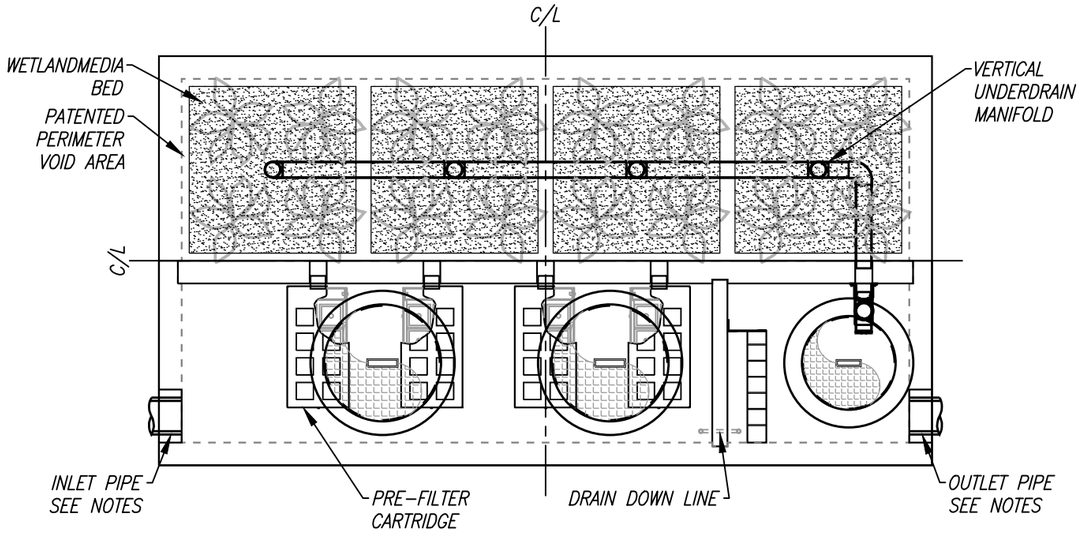
CYPRESS CITY CENTER
PROPOSED WQMP EXHIBIT
07/26/2019

Kimley»Horn

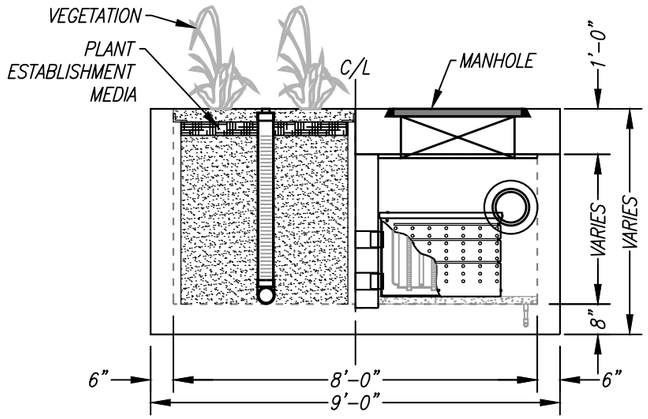
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765 THE CITY DRIVE, SUITE 200, ORANGE, CA 92868
PHONE: 714-939-1030 FAX: 714-938-9488

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.693	
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
FRAME & COVER	2EA ø30"	OPEN PLANTER	ø24"
NOTES:			

* PRELIMINARY NOT FOR CONSTRUCTION



PLAN VIEW



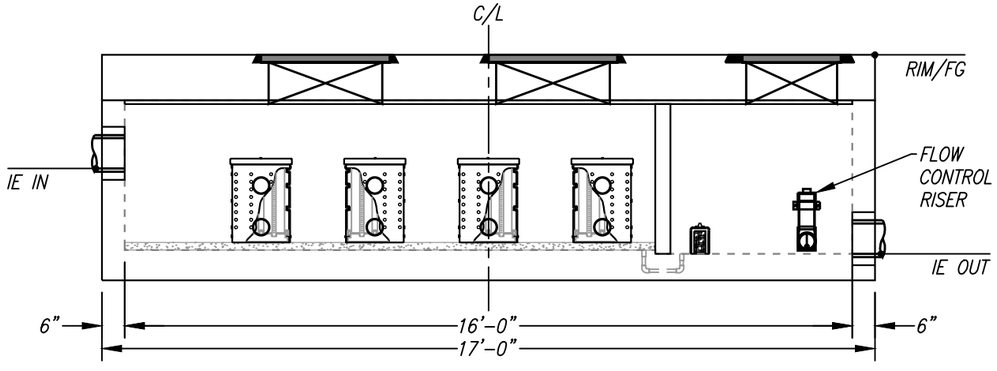
LEFT END VIEW

INSTALLATION NOTES

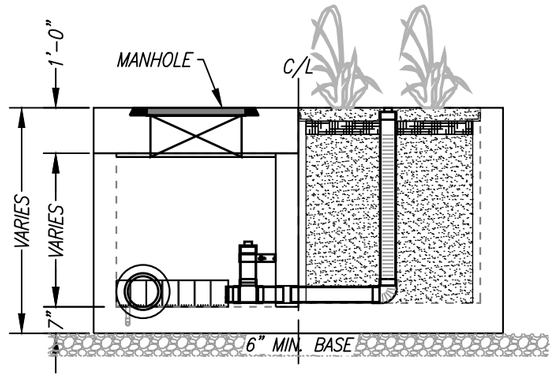
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER 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.



ELEVATION VIEW



RIGHT END VIEW

TREATMENT FLOW (CFS)	0.693
OPERATING HEAD (FT)	004460771451(
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MODULAR WETLANDS
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

PROPRIETARY AND CONFIDENTIAL:
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Bio Clean
A Forterra Company

MWS-L-8-16-V
STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

5/23/19 10:LEF

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 SiteTransferred 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

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
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Kimley»Horn

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2. Existing (Predevelopment) Conditions
3. Proposed (Post-development) Conditions
4. Hydrologic and Hydraulic Design Criteria
5. Conclusions

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    2. Hydrology Map – Proposed Condition
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    2. On-Site 100-Year Loss Rates (AES)
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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 and 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 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.

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. Th 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 Strom 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.

Table 1: Overflow Depths

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 that 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 strom, 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 fows 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 approximaltey 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 noth-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 adjacenet 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 deisgn scenarios allow for passage of the allowable off-site flow rate (3.53 cfs) into the City's underground strom drain location with overflows in excees of 3.53 cfs contained an 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 form 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 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.

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:

Table 2: Hydrologic Comparison Table – Proposed Site

Drainage Condition	100-Year Storm
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

Table 3: Hydrologic Comparison Table – Upstream Tributary Area	
Drainage Condition	**100-Year Storm**
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 shoes 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:

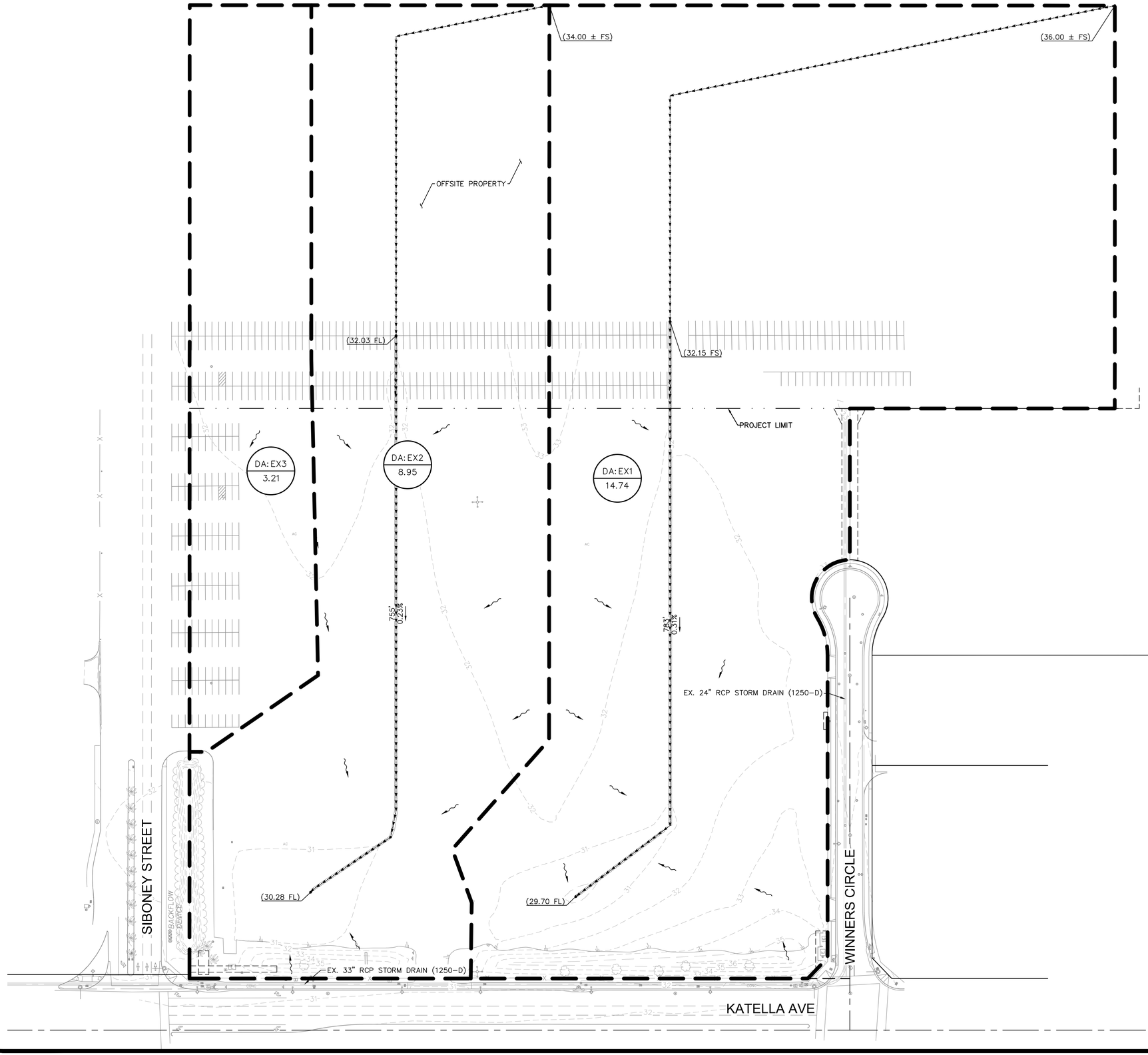
Table 2: Pipe Hydraulics Table		
Pipe Size	**Material**	**Capacity at 0.3% Friction Slope**
12”	HDPE (n=0.011)	2.3 CFS
18”	HDPE (n=0.011)	6.8 CFS
24”	HDPE (n=0.011)	14.6 CFS

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
- 147 EXISTING CONTOURS
- FLOW LINE
- EXISTING STORM DRAIN
- PROJECT LIMIT
- (XX.XX TC) / (XX.XX FS) EXISTING SPOT GRADE
- EXISTING CATCH BASIN
- EXISTING STORM DRAIN MANHOLE
- DIRECTION OF WATER FLOW
- DA: # / ACRES DRAINAGE AREA LABEL

NORTH

GRAPHIC SCALE IN FEET
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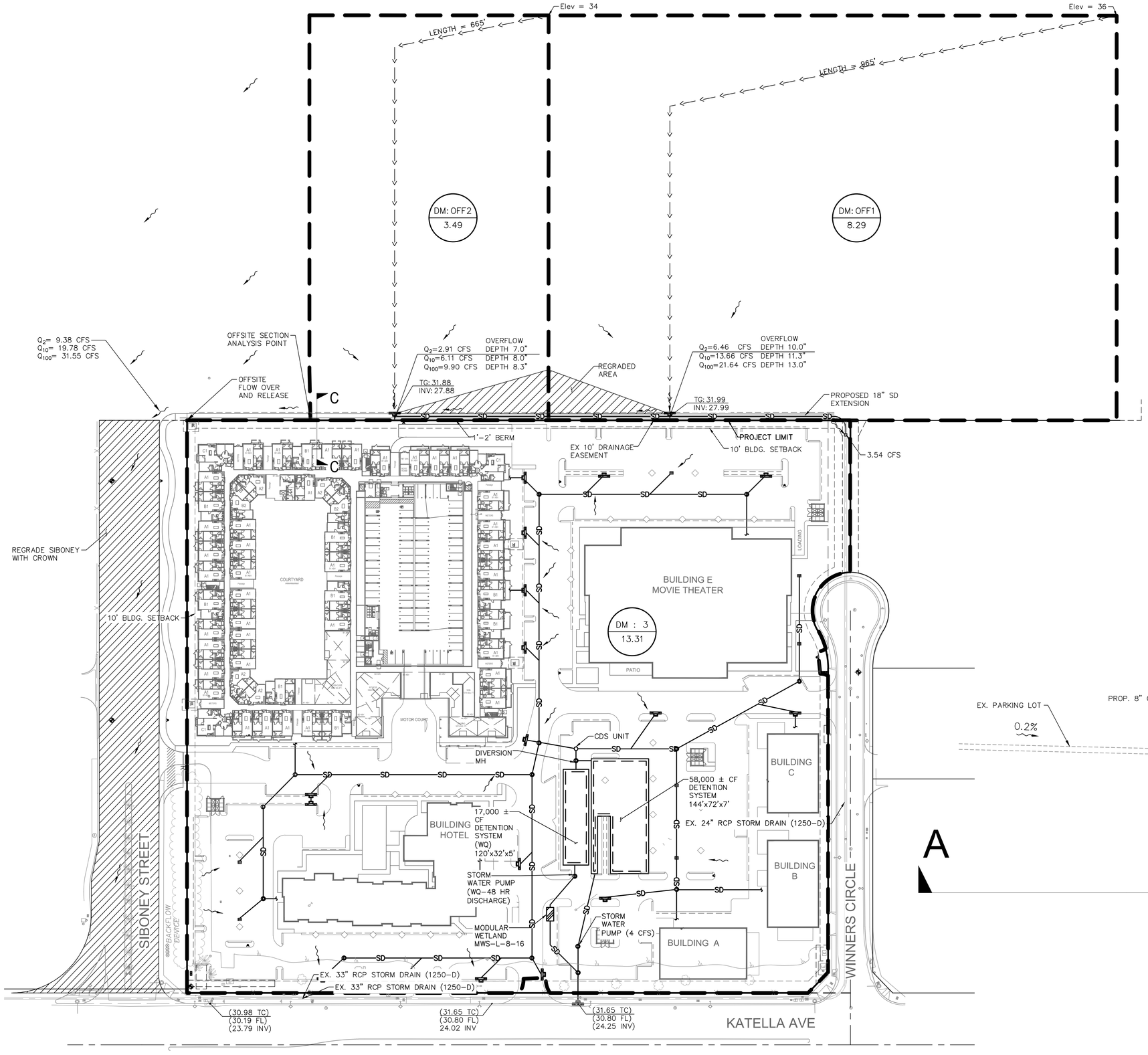
CYPRESS MIXED-USE

EXISTING HYDROLOGY MAP

07/03/2019

Kimley»Horn

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765 THE CITY DRIVE, SUITE 200, ORANGE, CA 92868
PHONE: 714-939-1030 FAX: 714-938-9488

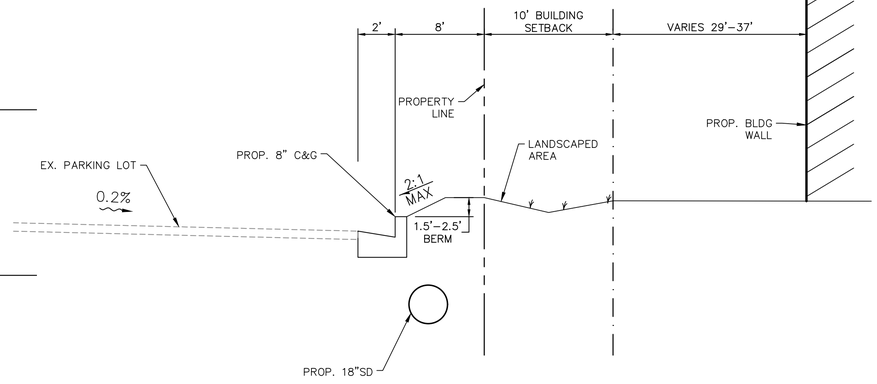


LEGEND

- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- 147 — EXISTING CONTOURS
- 147 — PROPOSED CONTOURS
- FLOW LINE
- BIOSWALE
- EXISTING STORM DRAIN
- SD — PROPOSED STORM DRAIN
- (XX.XX TC) / (XX.XX FS) — EXISTING SPOT GRADE
- XX.XX TC / XX.XX FS — PROPOSED SPOT GRADE
- 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

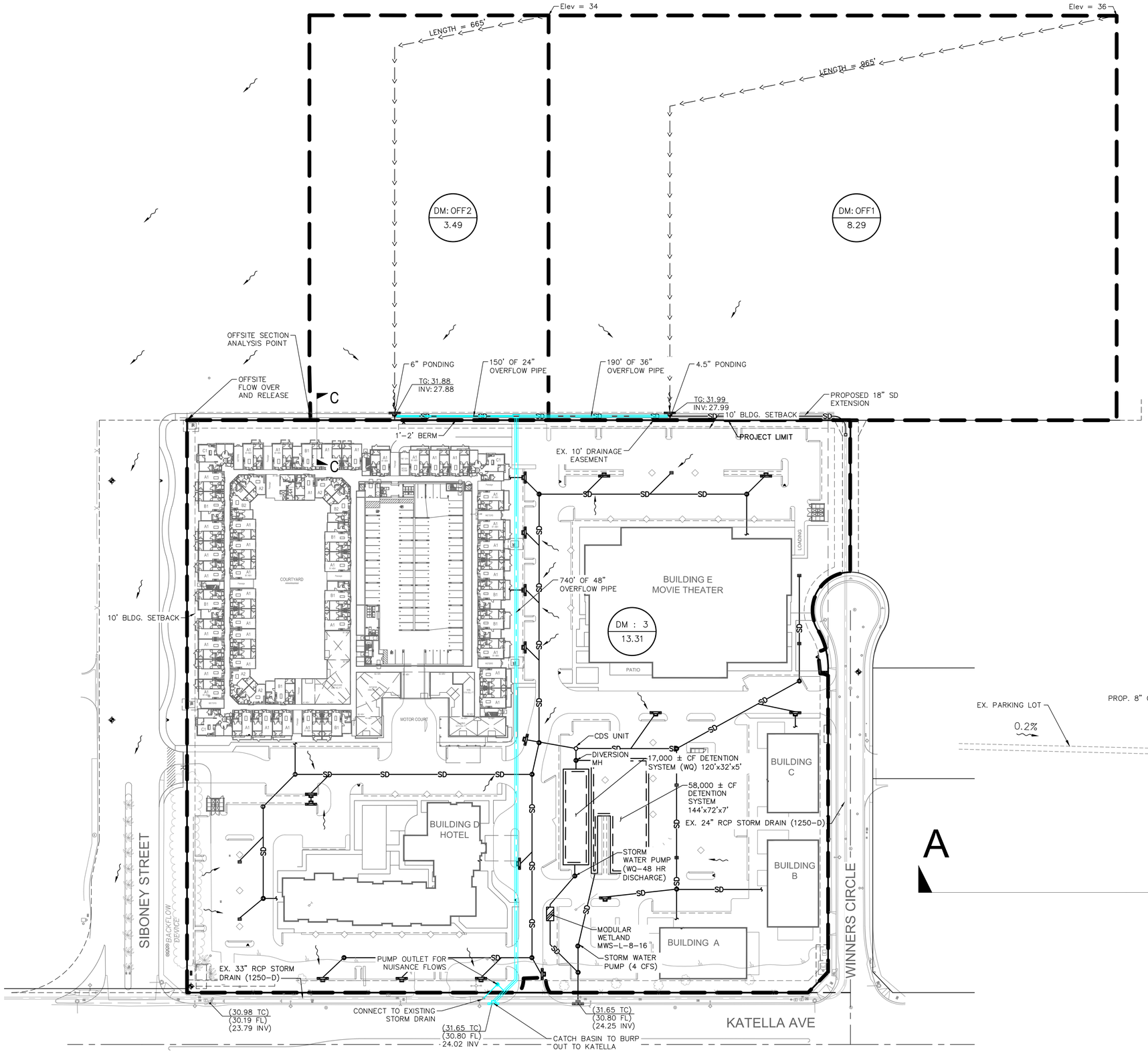
NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

CYPRESS MIXED-USE
PROPOSED HYDROLOGY MAP
SCENARIO 1
01/27/2020

Kimley»Horn

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765 THE CITY DRIVE, SUITE 200, ORANGE, CA 92868
PHONE: 714-939-1030 FAX: 714-938-9488

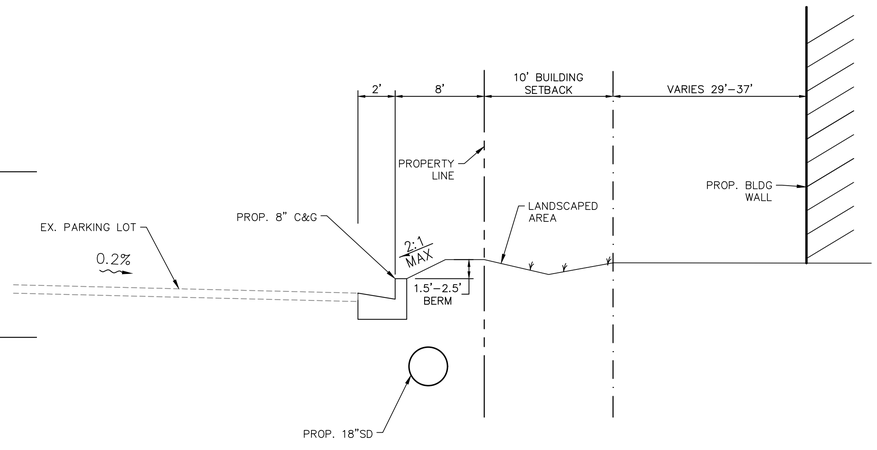


LEGEND

- RIGHT OF WAY/ PROPERTY LINE
- CENTERLINE
- DRAINAGE MANAGEMENT BOUNDARY
- 147 — EXISTING CONTOURS
- 147 — PROPOSED CONTOURS
- FLOW LINE
- BIOSWALE
- EXISTING STORM DRAIN
- SD — PROPOSED STORM DRAIN
- (XX.XX TC) (XX.XX FS) — EXISTING SPOT GRADE
- XX.XX TC XX.XX FS — PROPOSED SPOT GRADE
- 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 — DRAINAGE MANAGEMENT AREA LABEL

FLOOD ZONE

FLOOD ZONE X : AREA OF MINIMAL FLOOD HAZARD



SECTION A-A
NOT TO SCALE

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

CYPRESS MIXED-USE
PROPOSED HYDROLOGY MAP
SCENARIO 2
01/27/2020

Kimley»Horn

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765 THE CITY DRIVE, SUITE 200, ORANGE, CA 92868
PHONE: 714-939-1030 FAX: 714-938-9488

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_O1.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*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (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

**************************************************************************
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```
 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

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   11.850
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.774
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 COMMERCIAL                 D        0.40      0.20     0.100    91   11.85
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  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/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                 D        7.89      0.20     0.100    91
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  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   Tc(MIN.) =   15.35
 SUBAREA AREA(ACRES) =    7.89       SUBAREA RUNOFF(CFS) =   22.97
 EFFECTIVE AREA(ACRES) =    8.29     AREA-AVERAGED Fm(INCH/HR) =   0.02
 AREA-AVERAGED Fp(INCH/HR) =   0.20  AREA-AVERAGED Ap =   0.10
 TOTAL AREA(ACRES) =        8.3         PEAK FLOW RATE(CFS) =      24.13

 END OF SUBAREA "V" GUTTER HYDRAULICS:
```

```
  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 Fm(INCH/HR)=  0.02
  AREA-AVERAGED Fp(INCH/HR) =  0.20  AREA-AVERAGED Ap = 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_O2.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*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (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

**************************************************************************
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```
 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

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   11.850
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.774
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 COMMERCIAL                 D        0.98      0.20     0.100    91   11.85
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  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/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                 D        2.51      0.20     0.100    91
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  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   Tc(MIN.) =   13.48
 SUBAREA AREA(ACRES) =    2.51       SUBAREA RUNOFF(CFS) =    7.87
 EFFECTIVE AREA(ACRES) =    3.49     AREA-AVERAGED Fm(INCH/HR) =   0.02
 AREA-AVERAGED Fp(INCH/HR) =   0.20  AREA-AVERAGED Ap =   0.10
 TOTAL AREA(ACRES) =        3.5         PEAK FLOW RATE(CFS) =      10.95

 END OF SUBAREA "V" GUTTER HYDRAULICS:
```

```
  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     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    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, Fm (in./hr.) =  0.030

                                  _
    AREA-AVERAGED LOW LOSS FRACTION, 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, Fm,(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

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	.	.	.	.

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.

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(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%	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

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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^3)	Time to Peak (hours)	Peak Flow (ft^3/s)
DM-3	Base	0	227,734.000	16.167	49.41

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft^3)	Time to Peak (hours)	Peak Flow (ft^3/s)
O-1	Base	0	226,739.000	14.050	4.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft^3)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft^3)
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 ft³/s
Time to Peak	16.167 hours
Hydrograph Volume	227,733.765 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.167 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/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^3)	Time to Peak (hours)	Flow (Peak) (ft^3/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 (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
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 (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
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 (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
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 (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
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.

Volume = (1/3) * (EL2 - El1) * (Area1 + Area2 + sqr(Area1 * 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^3/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^3/s
Flow Tolerance (Maximum)	10.000 ft^3/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^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Computation Messages
0.00	4.00	(N/A)	0.00	Interpolated from input table
0.50	4.00	(N/A)	0.00	Interpolated from input table
1.00	4.00	(N/A)	0.00	Interpolated from input table
1.50	4.00	(N/A)	0.00	Interpolated from input table
2.00	4.00	(N/A)	0.00	Interpolated from input table
2.50	4.00	(N/A)	0.00	Interpolated from input table
3.00	4.00	(N/A)	0.00	Interpolated from input table
3.50	4.00	(N/A)	0.00	Interpolated from input table
4.00	4.00	(N/A)	0.00	Interpolated from input table
4.50	4.00	(N/A)	0.00	Interpolated from input table
5.00	4.00	(N/A)	0.00	Interpolated from input table
5.50	4.00	(N/A)	0.00	Interpolated from input table
6.00	4.00	(N/A)	0.00	Interpolated from input table
6.50	4.00	(N/A)	0.00	Interpolated from input table
7.00	4.00	(N/A)	0.00	Interpolated from input table

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/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
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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 ft³/s
Time to Peak	17.350 hours
Hydrograph Volume	226,738.747 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/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^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/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^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/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 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

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/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)	16.150 hours
Flow (Peak Outlet)	4.00 ft³/s	Time to Peak (Flow, Outlet)	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 ft³/s
Time to Peak	17.350 hours
Hydrograph Volume	226,738.747 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/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^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/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^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/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^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	DM-3	227,733.765	16.167	49.41
Flow (In)	PO-1	227,252.827	16.150	46.08

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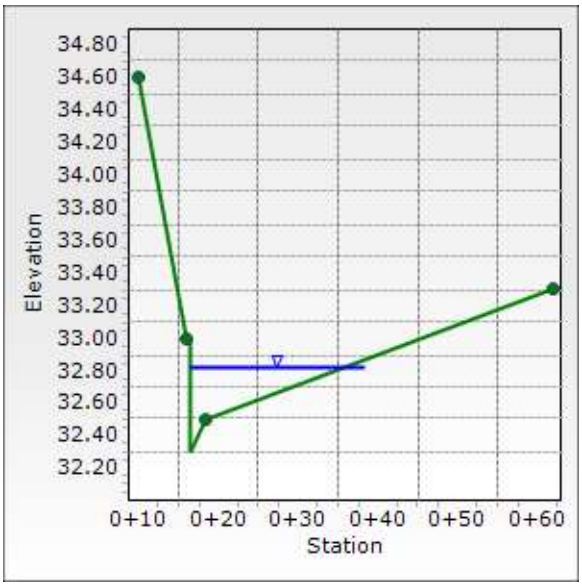
U

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Cross Section for Overflow at East Release Point-Q2

Project Description	
Friction Method	Manning Formula
Solve For	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 Formula
Solve For	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 ft²
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

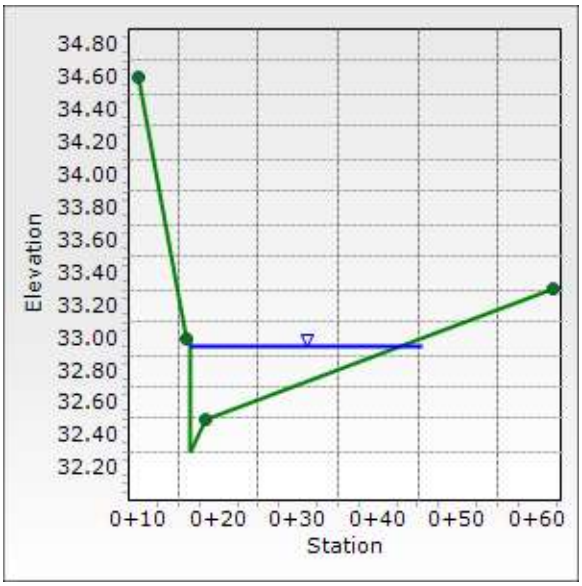
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

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 Formula
Solve For	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 Formula
Solve For	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 ft²
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

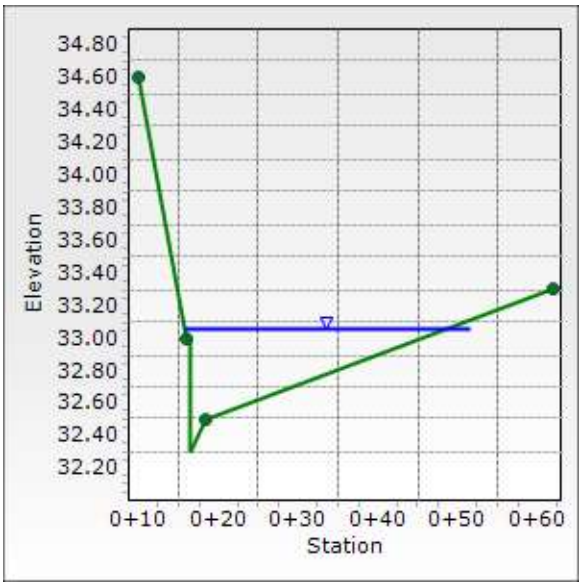
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

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 Formula
Solve For	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 Formula
Solve For	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 ft²
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

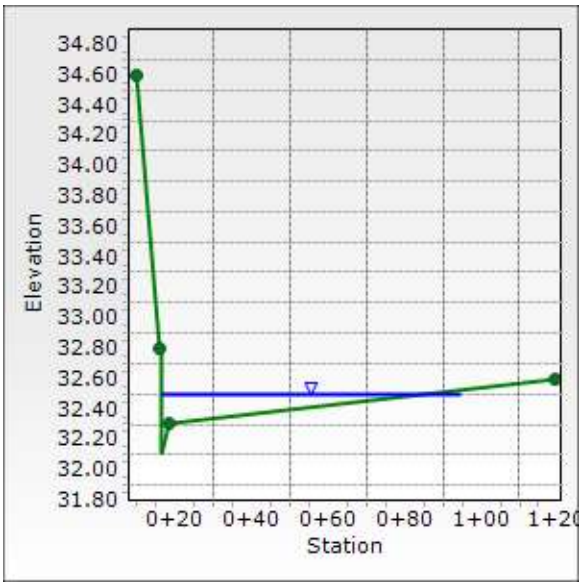
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

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 Formula
Solve For	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 Formula
Solve For	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 ft²
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 Formula
Solve For	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 ft²
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

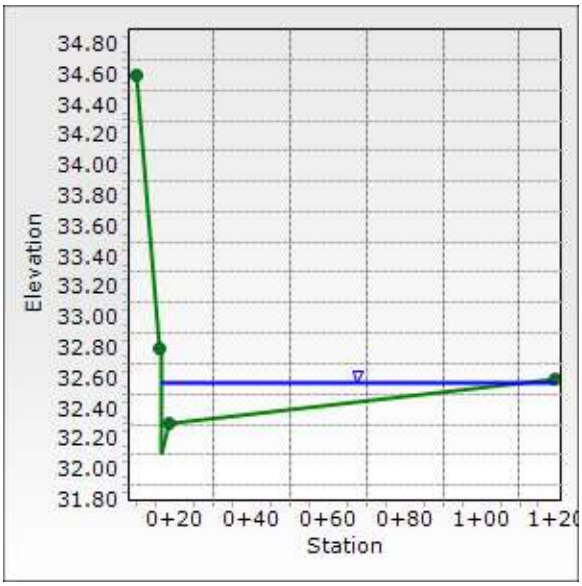
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.46 ft
Critical Depth	0.40 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00749 ft/ft

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 Formula
Solve For	Normal Depth

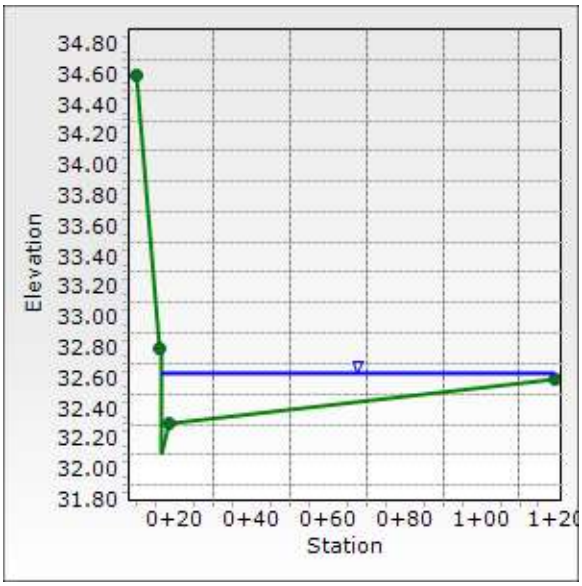
Input Data	
Channel Slope	0.00200 ft/ft
Normal Depth	0.46 ft
Discharge	19.78 cfs



Cross Section for Overflow at West Release Point-Q100

Project Description	
Friction Method	Manning Formula
Solve For	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 Formula
Solve For	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 ft²
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

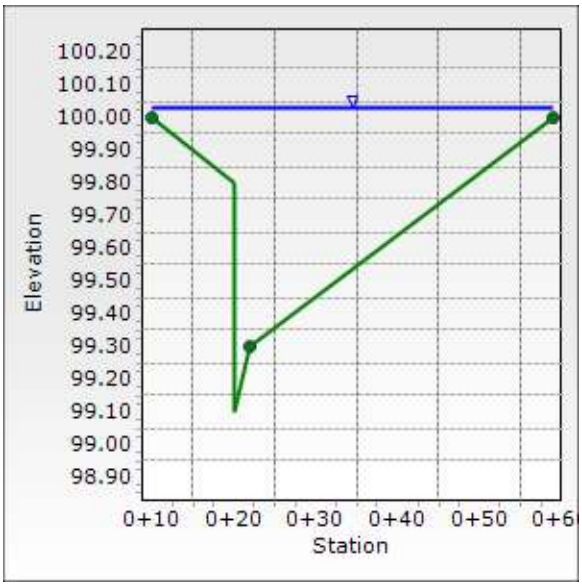
GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.52 ft
Critical Depth	0.45 ft
Channel Slope	0.00200 ft/ft
Critical Slope	0.00704 ft/ft

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 Formula
Solve For	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 ft²
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 O2
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   AREA   PERCENT OF   SCS CURVE   LOSS RATE
        TYPE   (Acres)   PERVIOUS AREA   NUMBER   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, $\bar{Fm}$ (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, Fm,(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   VOLUME   Q   0.   7.5   15.0   22.5   30.0
  (HOURS)   (AF)   (CFS)

   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 . . . .
13.75	**1.2233**	**2.56**	**. Q . . . . .**
14.00	**1.2772**	**2.66**	**. Q . . . . .**
14.25	**1.3347**	**2.91**	**. Q . . . . .**
14.50	**1.3963**	**3.05**	**. Q . . . . .**
14.75	**1.4631**	**3.42**	**. Q . . . . .**
15.00	**1.5361**	**3.65**	**. Q . . . . .**
15.25	**1.6183**	**4.30**	**. Q . . . . .**
15.50	**1.7123**	**4.79**	**. Q . . . . .**
15.75	**1.8229**	**5.92**	**. Q . . . . .**
16.00	**1.9678**	**8.11**	**. Q . . . . .**
16.25	**2.3043**	**24.46**	**. . . . Q . .**
16.50	**2.6069**	**4.84**	**. Q . . . . .**
16.75	**2.6976**	**3.94**	**. Q . . . . .**
17.00	**2.7716**	**3.22**	**. Q . . . . .**
17.25	**2.8334**	**2.77**	**. Q . . . . .**
17.50	**2.8875**	**2.47**	**. 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	ft²
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	ft²
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	ft²
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	ft²
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 ft²
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	ft²
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 ft²
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

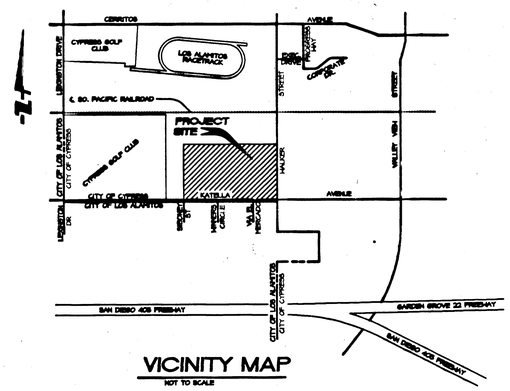
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

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



VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

1. 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).

2. 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.

3. 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.

4. 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.

5. ALL ELEVATIONS SHALL BE BASED ON ORANGE COUNTY SURVEYOR'S BENCH MARKS.

6. ALL MONUMENTS SHALL BE SET AND TIES SUBMITTED TO THE CITY ENGINEER PRIOR TO ACCEPTANCE OF IMPROVEMENTS.

7. ALL UTILITIES SHALL BE UNDERGROUND AND SHALL BE INSTALLED PRIOR TO PAVING.

8. 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.

9. LOCATION OF UNDERGROUND ELECTRICAL AND TELEPHONE CONDUIT WITHIN DEDICATED RIGHTS-OF-WAY SHALL BE SHOWN ON PLANS BEFORE EXCAVATION OF SAME.

10. ALL CONCRETE TO BE CLASS "A", 6 SACK MIX.

11. CRUSHED AGGREGATE BASE (3/4" MAX.) REQUIRED IN ALL STREETS.

12. 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.

13. AS-BUILT DRAWINGS INCLUDING THE LOCATION OF ALL UTILITY SUB-STRUCTURES SHALL BE FILED WITH THE CITY ENGINEER PRIOR TO ACCEPTANCE OF IMPROVEMENTS.

14. PRIOR TO STARING 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.

15. THE METHODS AND PROCEDURES FOR BARRICADING AND CHANNELIZATION DURING CONSTRUCTION SHALL CONFORM TO THE MANUAL OF WARNING SIGNS, LIGHTS AND DEVISES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS ISSUED BY THE DEPARTMENT OF TRANSPORTATION AND LATEST REVISION THEREOF.

16. 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:

1. 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.

2. 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.

3. 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.

4. 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.

5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDTIONS 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 WRITTING 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 33" 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"x 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 33" RCP	1	EA
(19)	INSTALL R.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 BONDING 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
TG	TOP OF GRATE
S	SLOPE OF PIPE
	CENTERLINE
	PROPERTY LINE
	ASPHALT CONCRETE
	CONCRETE PAVING
EX. S	EXISTING SEWER
EX. W	EXISTING WATER
EX. G	EXISTING GAS
EX. SD	EXISTING STORM DRAIN
	CATCH BASIN
	SEWER MANHOLE
	JUNCTION STRUCTURE
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	STREET LIGHT
	STREET NAME SIGN
S	PROPOSED SEWER
W	PROPOSED WATER
SD	PROPOSED STORM DRAIN

BENCHMARK NOTE:

VERTICAL DATUM USED IN THE DESIGN OF THIS PLAN IS THE ORANGE COUNTY SURVEYORS 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 (OCS 6-7-10) BEING N9 01' 32"E PER THE CALIFORNIA COORDINATE SYSTEM ZONE VI, 1975 DATUM ON FILE IN THE OFFICE 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
16795 Von Karman, Ste. 100
Irvine, California 92714
Phone (714) 474-1960
FAX (714) 474-5315

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UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
DINO CAPANNELLI
No. 43636
Exp. 6-30-99
CIVIL
STATE OF CALIFORNIA

D-96021.01

REVISIONS

No.	Date	Initials	Description	Date	App'd

REFERENCES

Bench Mark: 18-84-74 ELEV. 25.362 CONTROL MAP NO. 18
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:

PLANS PREPARED UNDER THE SUPERVISION OF:

DINO CAPANNELLI
RCE 43636 EXP 6/30/97
2-24-97 DATE

DESIGNED BY:	DATE 2-24-97
DRAWN BY:	DATE 2-24-97
CHECKED BY:	DATE 2-24-97

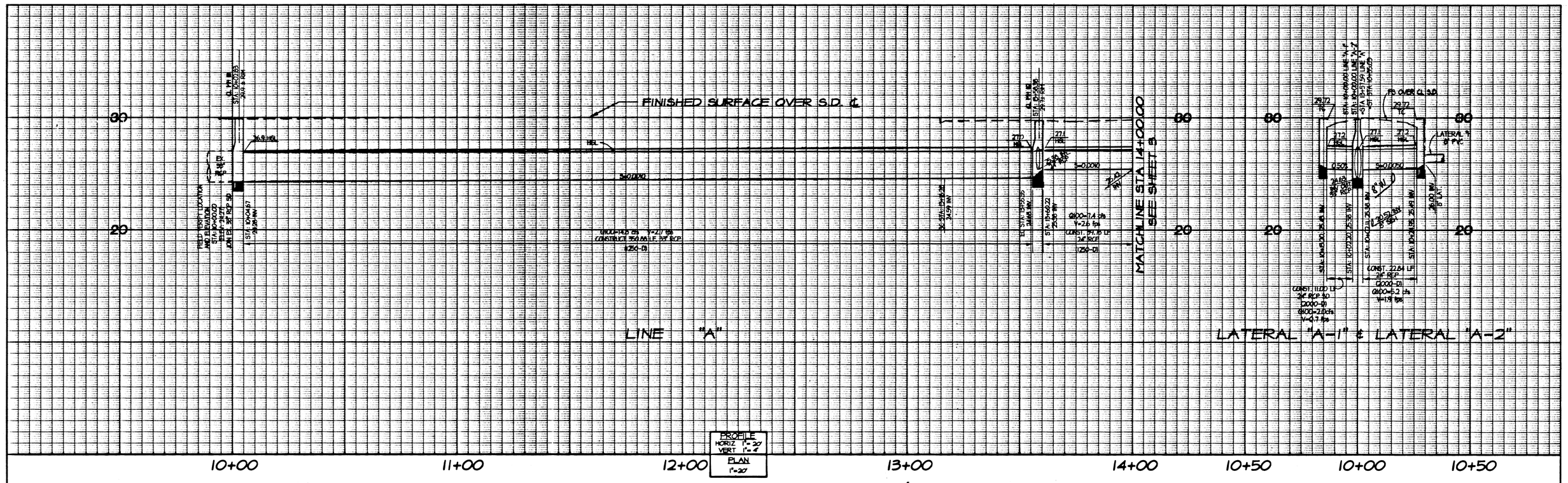
APPROVED BY THE CITY OF CYPRESS

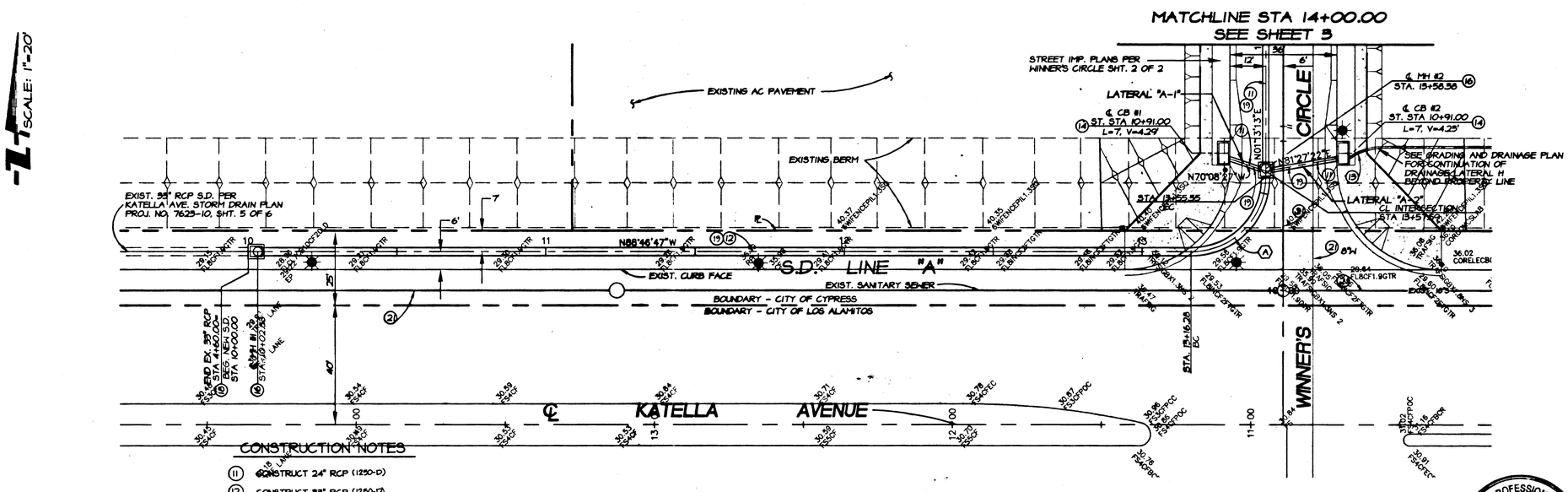
MARK CHRISTOPHELS
CITY ENGINEER/P.W.D.
RCE 40589 EXP 3/31/99
1/28/98 DATE

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

PROJECT\2951\DA\SDSHT1





STORM DRAIN CURVE TABLE:

○	Δ	R	L	T
Ⓐ	90°00'00"	25.00'	39.27'	25.00'

FUSCOE ENGINEERING
16795 Von Karman, Ste. 100
Irvine, California 92714
Phone (714) 474-1900
FAX (714) 474-5315

REGISTERED PROFESSIONAL ENGINEER — DINO CAPANNELLI — No. 43636 — Exp. 6-30-97 — CIVIL — STATE OF CALIFORNIA

D-1996021.02

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:

DINO CAPANNELLI RCE 43636 EXP 6/30/97 — 2-24-97 DATE

DESIGNED BY: DC	DATE 2-24-97
DRAWN BY: JJ	DATE 2-24-97
CHECKED BY: DC	DATE 2-24-97

APPROVED BY THE CITY OF CYPRESS

MARK CHRISTOFFELS
CITY ENGINEER/P.W.D.
RCE 40588 EXP 3/31/98

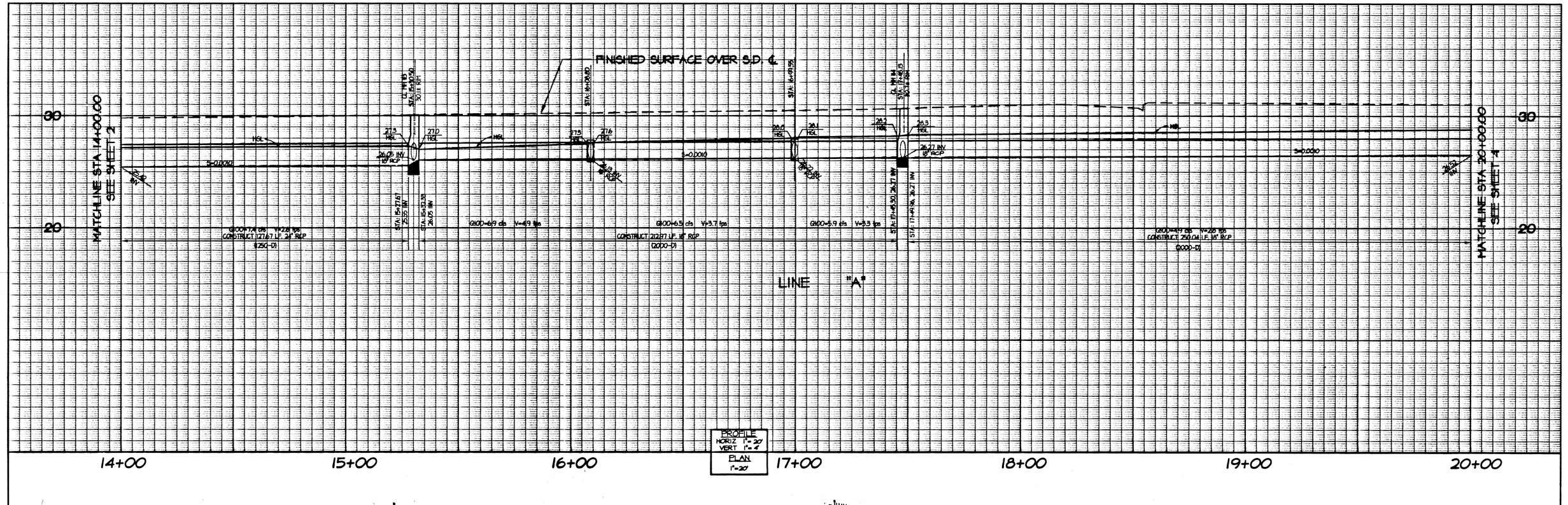
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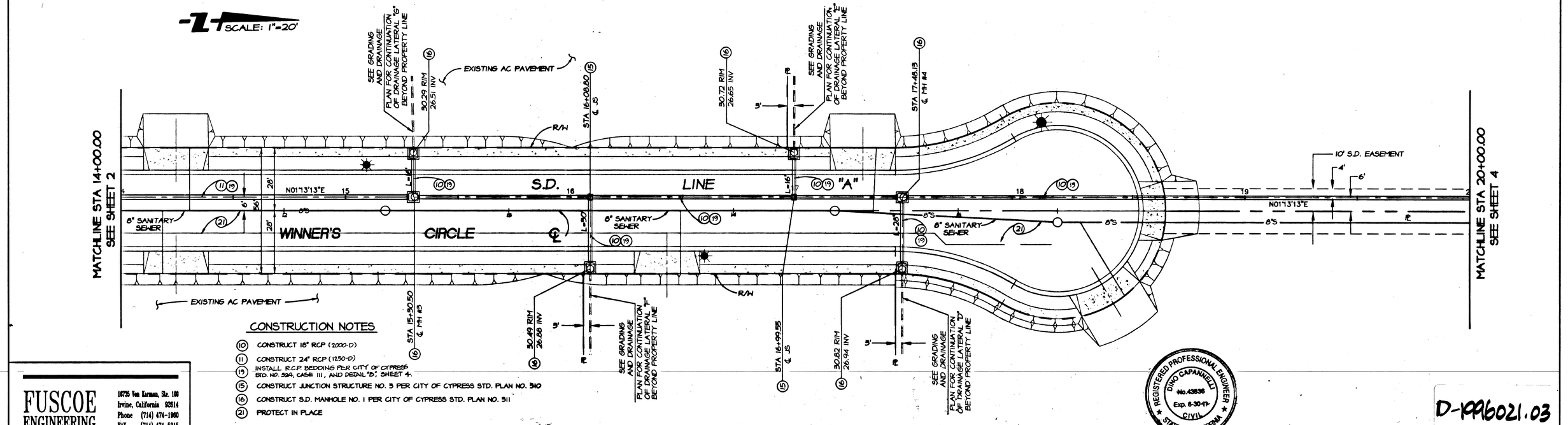
CITY OF CYPRESS
DEPARTMENT OF PUBLIC WORKS

CYPRESS BUSINESS AND PROFESSIONAL CENTER STORM DRAIN IMPROVEMENT PLAN FOR WINNERS CIRCLE

SHEET 2 OF 5
PROJECT NO. 9743
FILE NO. D-96021.2

PROJECT\2993\01A\505HT2





CONSTRUCTION NOTES

(10) CONSTRUCT 18" RCP (2000-D)
(11) CONSTRUCT 24" RCP (1250-D)
(19) INSTALL R.C.P. BEDDING PER CITY OF CYPRESS STD. NO. 324, CASE III, AND DETAIL "B", SHEET 4.
(15) CONSTRUCT JUNCTION STRUCTURE NO. 3 PER CITY OF CYPRESS STD. PLAN NO. 340
(16) CONSTRUCT S.D. MANHOLE NO. 1 PER CITY OF CYPRESS STD. PLAN NO. 311
(21) PROTECT IN PLACE

FUSCOE ENGINEERING
16795 Von Karman, Ste. 100
Irvine, California 92614
Phone (714) 474-1900
FAX (714) 474-5315

REGISTERED PROFESSIONAL ENGINEER
DINO CAPANNELLI
No. 43636
Exp. 6-30-97
CIVIL
STATE OF CALIFORNIA

D-1996021.03

REVISIONS

No.	Date	Initials	Description	Date	App'd

REFERENCES

Bench Mark: 18-84-74 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:

DINO CAPANNELLI 2-24-97
RCE 43636 EXP 6/30/97 DATE

DESIGNED BY: DC DATE 2-24-97
DRAWN BY: TS DATE 2-24-97
CHECKED BY: DC DATE 2-24-97

APPROVED BY THE CITY OF CYPRESS

MARK CHRISTOFELS
CITY ENGINEER, P.W.D.
RCE 40586 EXP 3/31/98

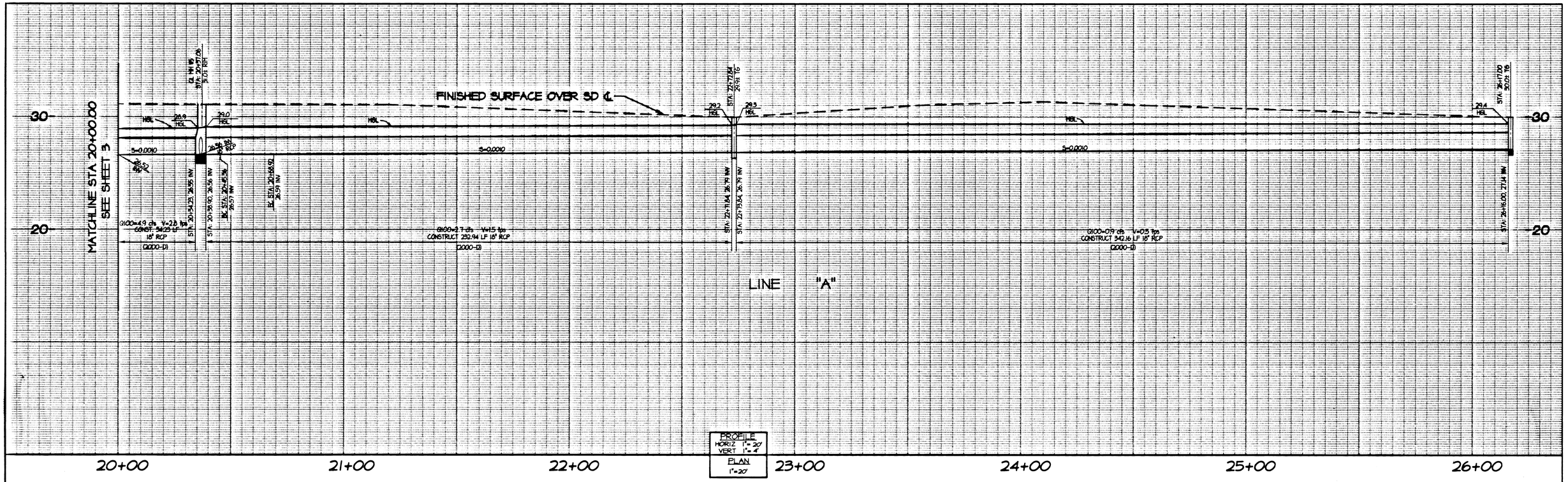
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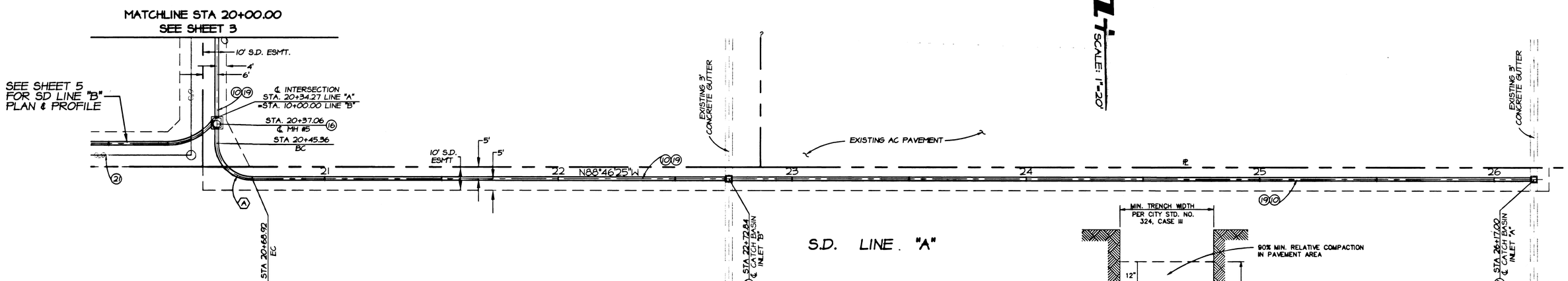
CITY OF CYPRESS
DEPARTMENT OF PUBLIC WORKS

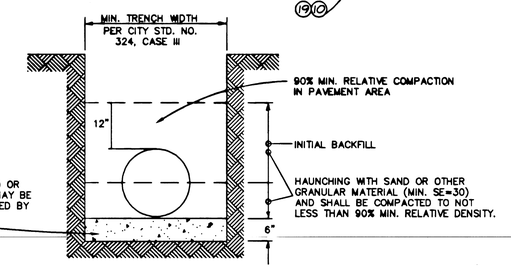
CYPRESS BUSINESS AND PROFESSIONAL CENTER
STORM DRAIN IMPROVEMENT PLAN
FOR
WINNERS CIRCLE

SHEET 3 OF 5
PROJECT NO.
9743
FILE NO.
D-96021.3

PROJECT\299\01A\SDSHT3







19 **DETAIL "B"** N.T.S.
R.C.P. BEDDING DETAIL

STORM DRAIN CURVE TABLE:

○	Δ	R	L	T
Ⓐ	8°59'58"	15.00'	23.56'	15.00'

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

REGISTERED PROFESSIONAL ENGINEER — DINO CAPANNELLI — NO. 43836 Exp. 08/30/01 — CIVIL — STATE OF CALIFORNIA

FUSCOE ENGINEERING
16795 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: 18-84-74 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 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:
DINO CAPANNELLI RCE 43836 EXP 8/30/97 — DATE 1/16/98

DESIGNED BY: DC	DATE 1/16/98
DRAWN BY: JS	DATE 1/16/98
CHECKED BY: DC	DATE 1/16/98

APPROVED BY THE CITY OF CYPRESS

MARK CHRISTOFFELS — CITY ENGINEER/P.W.D. RCE 40589 EXP 3/31/99 — DATE 1/22/98

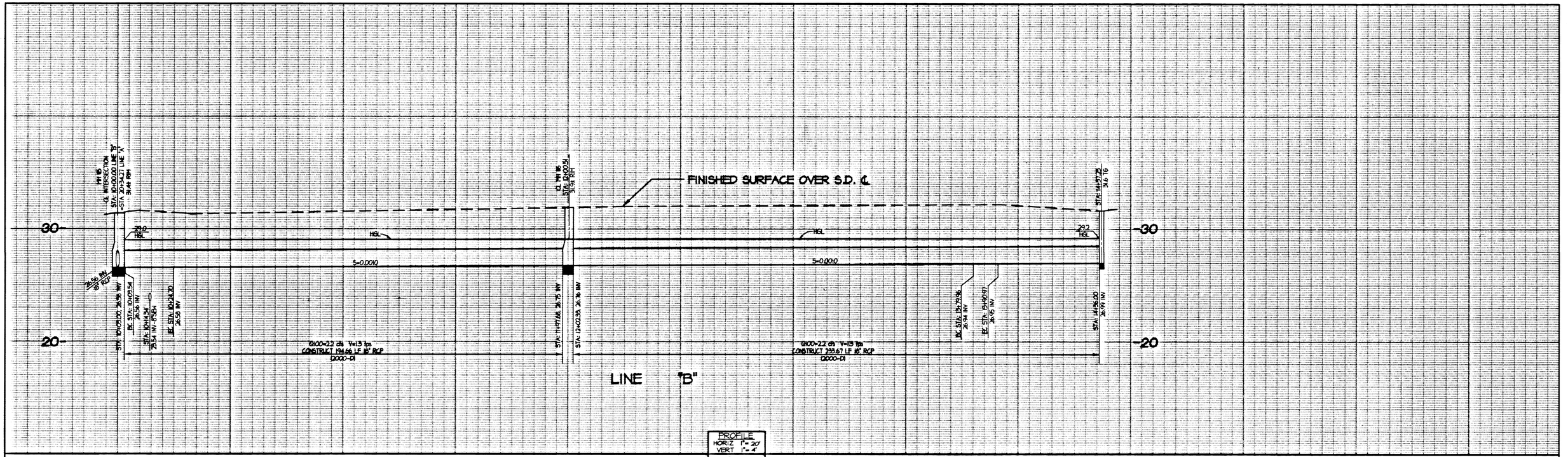
CITY OF CYPRESS
DEPARTMENT OF PUBLIC WORKS

CYPRESS BUSINESS AND PROFESSIONAL CENTER
STORM DRAIN IMPROVEMENT PLAN
FOR
WINNERS CIRCLE

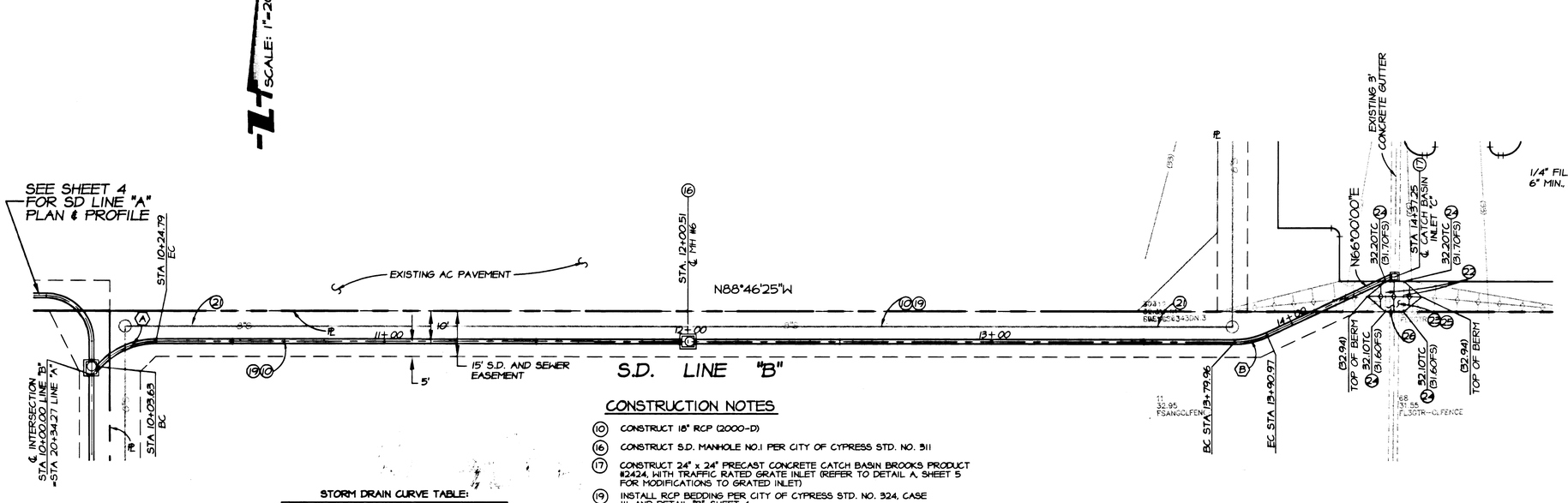
D-1996021.04

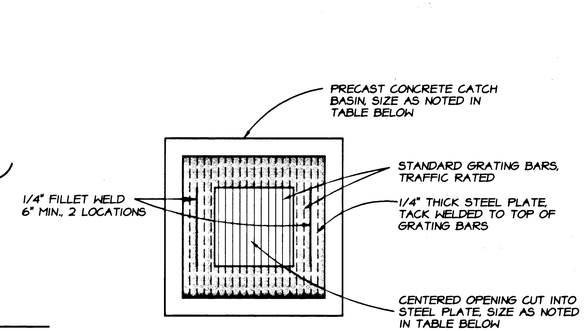
SHEET 4 OF 5
PROJECT NO. 9743
FILE NO. D-96021.4

PROJECT\9743\01A\SDSHT4



SCALE: 1"=20'





INLET LOCATION	INLET TYPE: PRECAST CONCRETE CATCH BASIN W/ GRATED INLET (1) — SIZE OF CATCH BASIN	DIM. OF HOLE CUT INTO STEEL PLATE	NOTES
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".

STORM DRAIN CURVE TABLE:

○	Δ	R	L	T
Ⓐ	48°30'10"	25.00'	21.16'	11.26'
Ⓑ	25°33'35"	25.00'	11.01'	5.59'

CONSTRUCTION NOTES

(10) CONSTRUCT 18" RCP (2000-D)
(16) CONSTRUCT S.D. MANHOLE NO.1 PER CITY OF CYPRESS STD. 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 RCP BEDDING PER CITY OF CYPRESS STD. NO. 324, CASE III, AND DETAIL "B", SHEET 4
(21) PROTECT IN PLACE
(22) REMOVE EXIST. 6" CURB
(23) REMOVE EXIST. A.C.
(24) CONSTRUCT 6" CURB PER CITY OF CYPRESS STD. NO. 203
(25) REMOVE EXIST. RIBBON GUTTER
(26) GRADE BERM PER PLAN ELEVATION AND LOCATION

DETAIL A
GRATE INLET WITH STEEL PLATE

D-96021.05

FUSCOE ENGINEERING
16795 Von Karman, Ste. 100
Irvine, California 92614
Phone (714) 474-1960
FAX (714) 474-5315

REGISTERED PROFESSIONAL ENGINEER — DINO CAPANNELLI — NO. 43836 — Exp. 08/30/01 — CIVIL — STATE OF CALIFORNIA

PROJECT\2293\01\SHEET5

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:

DINO CAPANNELLI RCE 43836 EXP. 8/30/97 — 1/16/98 DATE

DESIGNED BY: DC	DATE 1/16/98
DRAWN BY: JS	DATE 1/16/98
CHECKED BY: DC	DATE 1/16/98

APPROVED BY THE CITY OF CYPRESS

MARK CHRISTOFFELS
CITY ENGINEER/P.W.D.
RCE 40888 EXP. 3/31/98

1/22/98 DATE

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

FINAL

INTERIM DRAINAGE CRITERIA

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

Los Angeles County

Santa River Watershed

Anaheim Bay-Huntington Harbor Watershed

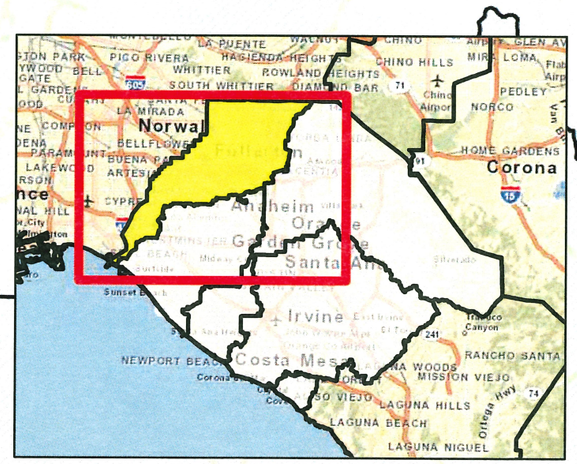
Newport Bay-Newport Coastal Streams Watershed

SITE

Channel in Retarding Basin

Humble Reservoir
Orange County
Valencia Reservoir
Fullerton Reservoir
Loftus Diversion Channel Desilting Basin
Brea Creek Reservoir
Fullerton Reservoir
Fullerton Reservoir
Hillcrest Park Reservoir
Fullerton Airport
Buena Park
Fullerton
Placentia Retarding Basin
La Jolla Recharge Basin
Miller Retarding Basin
Kraemer Basin
Raymond Retarding Basin
Gilbert Retarding Basin
Crescent Retarding Basin
Anaheim
Cypress Retarding Basin
Rossmoor Retarding Basin
Los Alamitos Naval Air Station
Los Alamitos Retarding Basin
Seal Beach Naval Weapons Station
Seal Beach
Pacific Ocean

0 8,000 16,000 Feet



TITLE: SUSCEPTIBILITY ANALYIS SAN GABRIEL-COYOTE CREEK

ORANGE COUNTY WATERSHED MASTER PLANNING

JOB: ORANGE CO. CA

SCALE	DESIGNED	DRAWING	CHECKED	DATE	JOB NO.
1" = 8000'	TH	TH	BMP	04/30/10	9526-E

PACE Advanced Water Engineering

1

P:\9526E\6-GIS\Mxds\SucseptabilityMaps_20100505\9526E_SanGabrielCoyoteCreekSusceptibility_20100430.mxd

APPENDIX H

NOISE ANALYSIS RESULTS

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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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11990 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) = 64.90

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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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 Streeet to Winners Circle
NOTES: Cypress Town Center Project - Existing

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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 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 - Existing Plus Previously Approved Project

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* * 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 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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 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 - Existing Plus Previously Approved Project

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* * 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 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

TABLE Existing 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 - Existing Plus Previously Approved Project

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13230 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) = 65.33

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

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12260 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) = 64.99

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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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 Streeet to Winners Circle
NOTES: Cypress Town Center Project - Opening Year 2021

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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 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 - Opening Year 2021 Plus Modified Project

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* * 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 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 - Opening Year 2021 Plus Modified Project

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* * 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 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 - Opening Year 2021 Plus Modified Project

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* * 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 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12345 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) = 65.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	74.2	153.2	326.8

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

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* * 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 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 - 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - Opening Year 2021 Plus Modified Project

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* * 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

TABLE Opening Year 2021 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 - 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

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APPENDIX I

ANAHEIM UNION HIGH SCHOOL DISTRICT CORRESPONDENCE

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LSA

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.

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

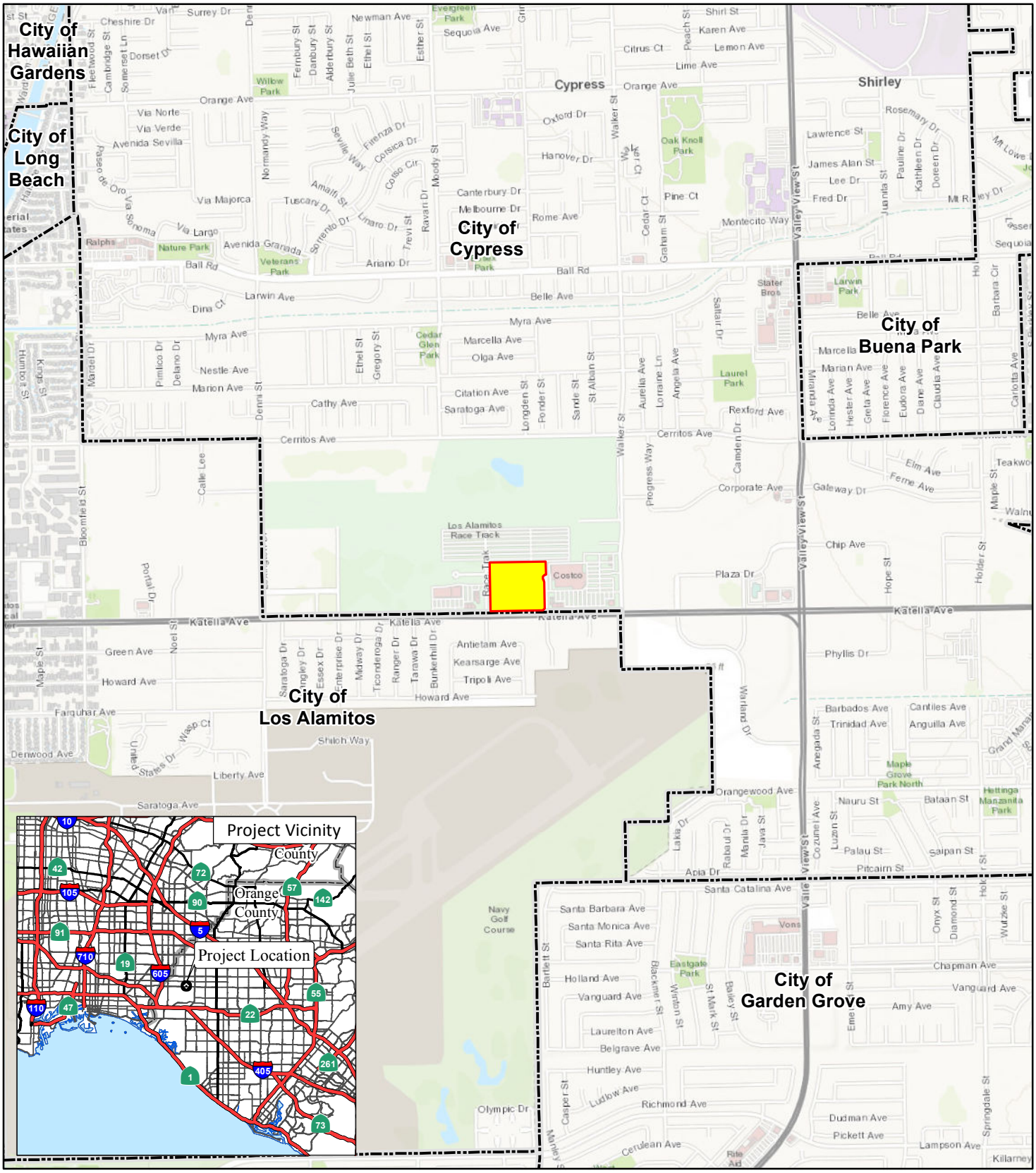
Sincerely,

LSA Associates, Inc.



Ryan Bensley
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map
School Services Questionnaire



LSA

FIGURE 1

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. 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.[1]

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
Total	**--**	**176 students**

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 (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.[2]

[1] California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: https://dq.cde.ca.gov/dataquest/ (accessed December 1, 2019).

[2] 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: _____

Learning With Purpose

ANAHEIM UNION HIGH SCHOOL DISTRICT

College and Career Ready

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. 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~~ 8 junior high and ~~12~~ 8 high schools. AUHSD's enrollment totaled 30,292 students in the 2018–2019 school year.[1]

2 AND THE OXFORD ACADEMY/School, HOPE AND GILBERT HS. P.N.

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
Total	**--**	**176 students**

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 (accessed December 1, 2019).
Note: The projected enrollment is based on 251 residential units.

3.79

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.[2]

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1 California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: https://dq.cde.ca.gov/dataquest/ (accessed December 1, 2019).

2 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.

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: PATRICIA NEELY
Title: DIRECTOR, FACILITIES PLANNING, DESIGN & CONSTRUCTION
Date: 12/20/19
Phone: 714.999-3505

APPENDIX I

ORANGE COUNTY FIRE AUTHORITY CORRESPONDENCE

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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.

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

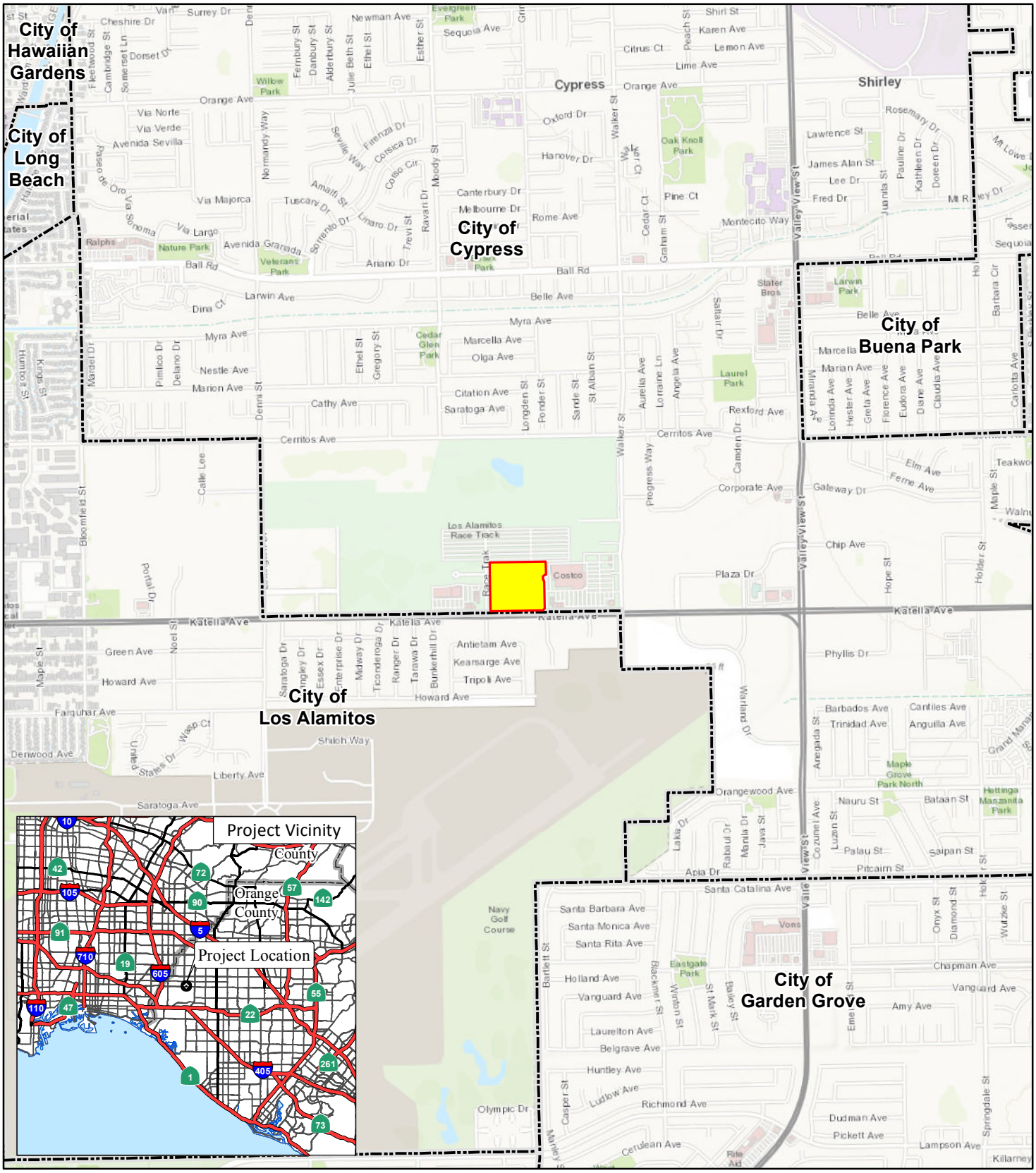
Sincerely,

LSA Associates, Inc.



Ryan Bensley
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map
Figure 2: Conceptual Site Plan
Fire Protection Questionnaire



LSA

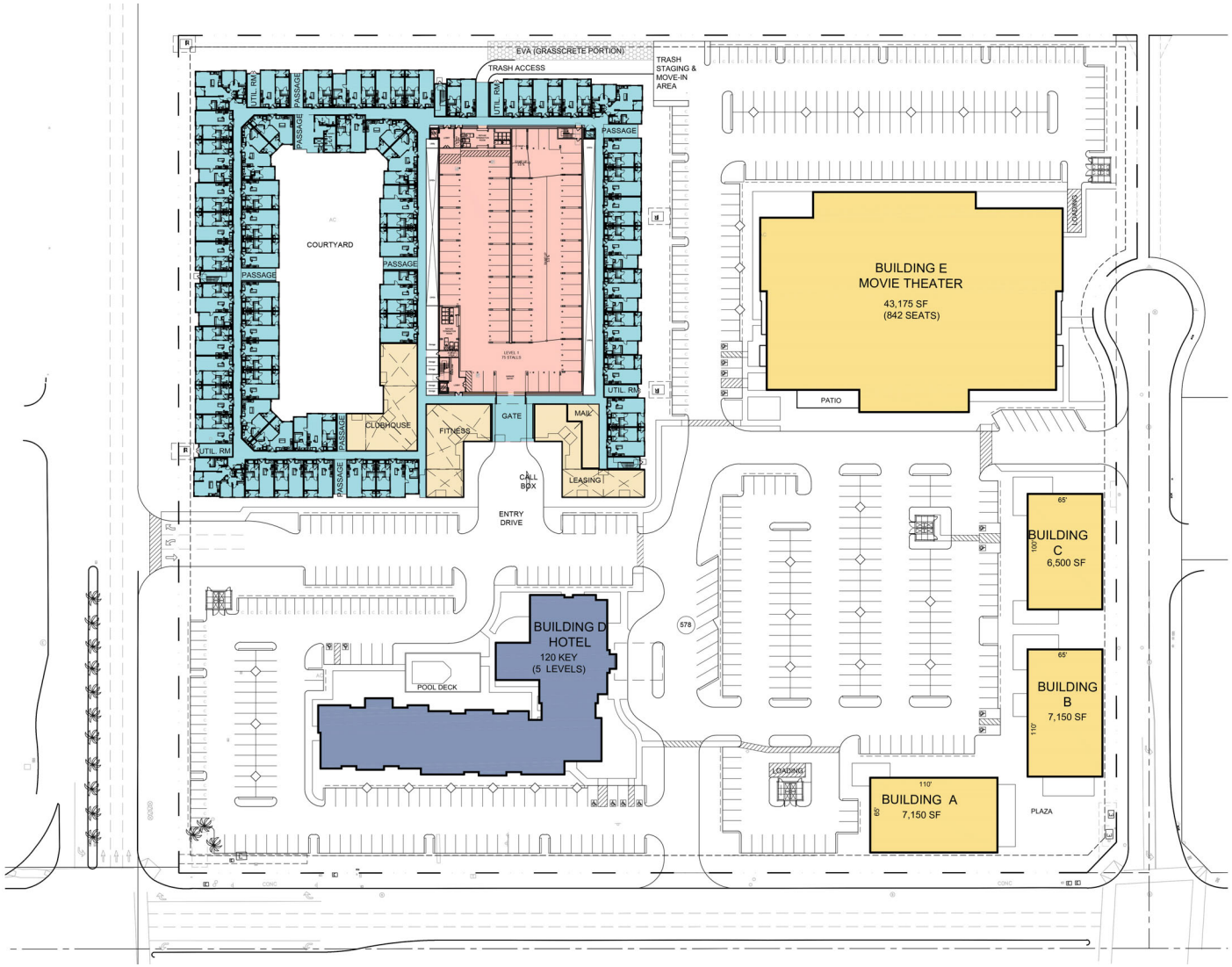
FIGURE 1

SOURCE: ArcGIS Online Topographic Map

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

Cypress City Center

Regional and Project Location



LSA

FIGURE 2

N

0 70 140

FEET

SOURCE: Architects Orange

Cypress City Center

Conceptual Site Plan

I:\SHO1901\G\Site Plan-Modified Project.cdr (7/18/2019)

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.

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[1].

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;

[1] 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.[1]

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.[2]

"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.[3] 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.[4]

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.

[1] Orange County Fire Authority, Operations Directory: https://www.ocfa.org/aboutus/Departments/OperationsDirectory/Division7.aspx (accessed December 1, 2019).
[2] Orange County Fire Authority, Station Statistics: https://www.ocfa.org/Uploads/Transparency/OCFA%20Annual%20Report%202018.pdf (accessed December 1, 2019).
[3] 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).
[4] 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.

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---

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3 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).

4 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 with be approximately 3,000-4,000 gpm for3 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

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LSA

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.

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

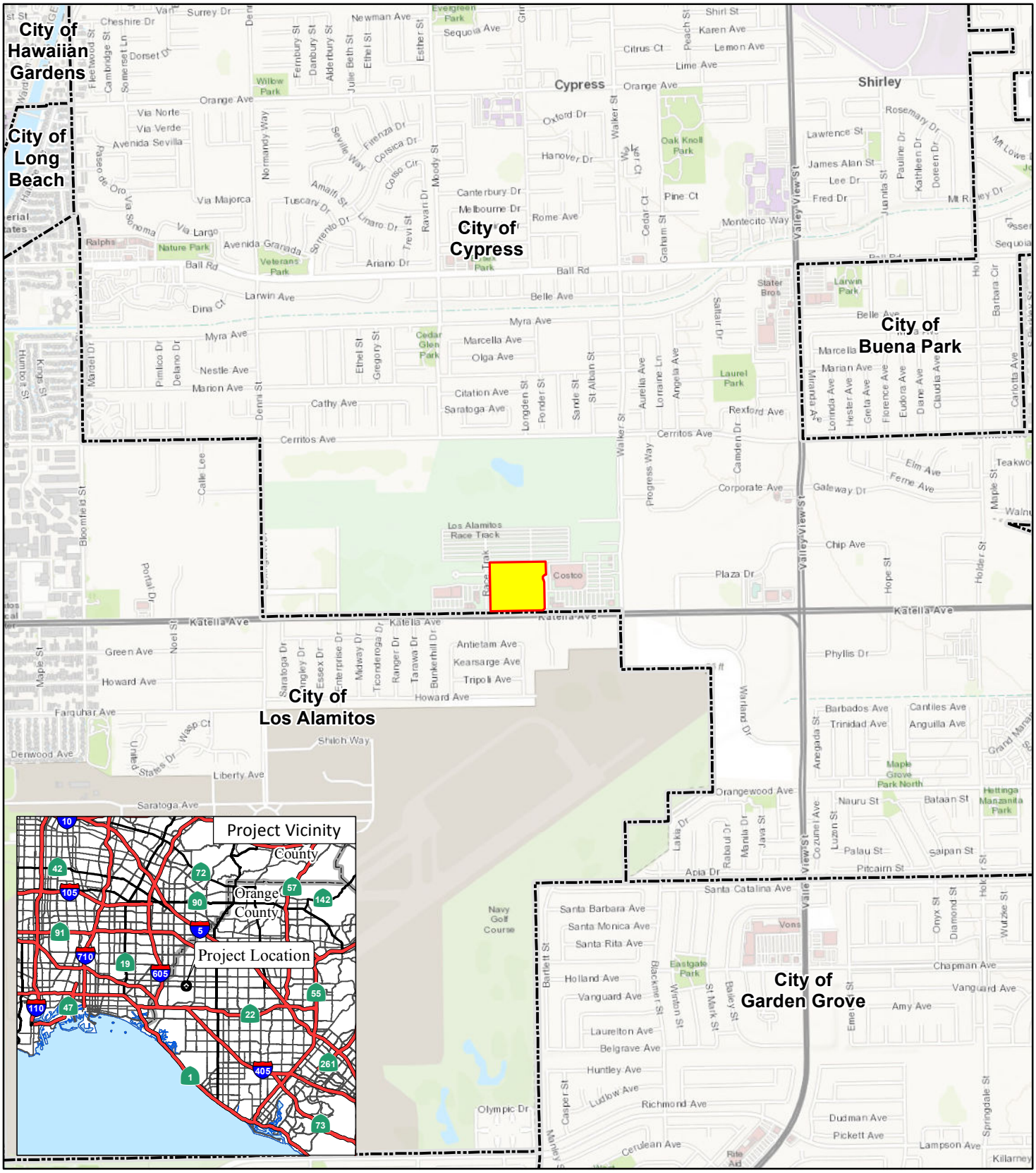
Sincerely,

LSA Associates, Inc.



Ryan Bensley
Project Manager, AICP

Attachments: Figure 1: Regional and Project Location Map
Library Services Questionnaire



LSA

FIGURE 1

SOURCE: ArcGIS Online Topographic Map

I:\SHO1901\GIS\MXD\ProjectLocation.mxd (7/9/2019)

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. 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. We would appreciate a response by **December 13, 2019**.

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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

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TRAFFIC IMPACT ANALYSIS

CYPRESS CITY CENTER

CYPRESS, CALIFORNIA

LSA

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

LSA

December 2019

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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.

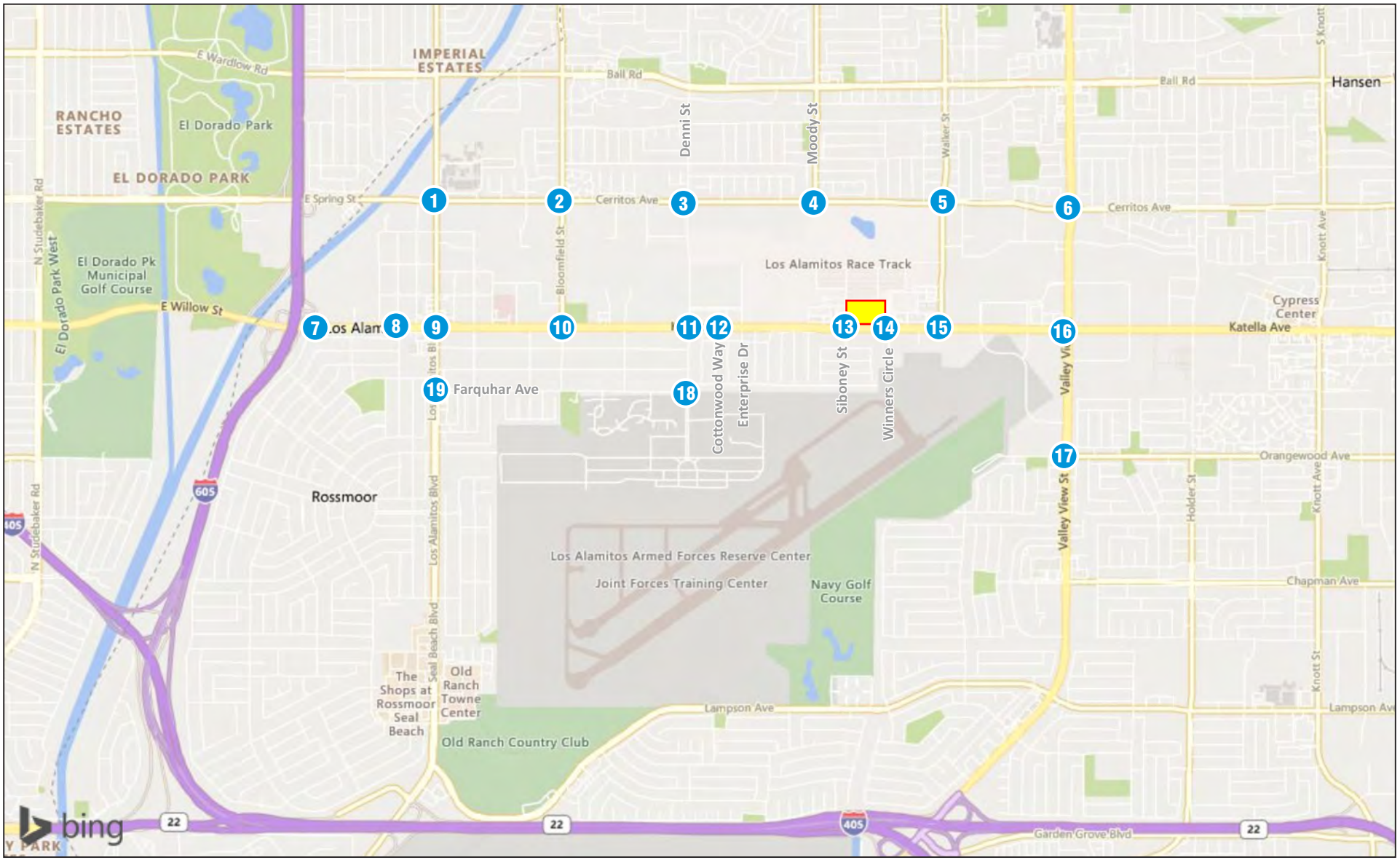
The project site is generally bounded by Katella Avenue to the south, Siboney Street to the west, Winners Circle to the east, and the Los Alamitos Race Course to the north. The project includes 20,800 sf of retail use, 251 dwelling units of residential use (apartments), a 120-room hotel, and a 10-screen 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

FIGURE 1

LEGEND

- Project Site
- # - Study Area Intersection

0 1500 3000

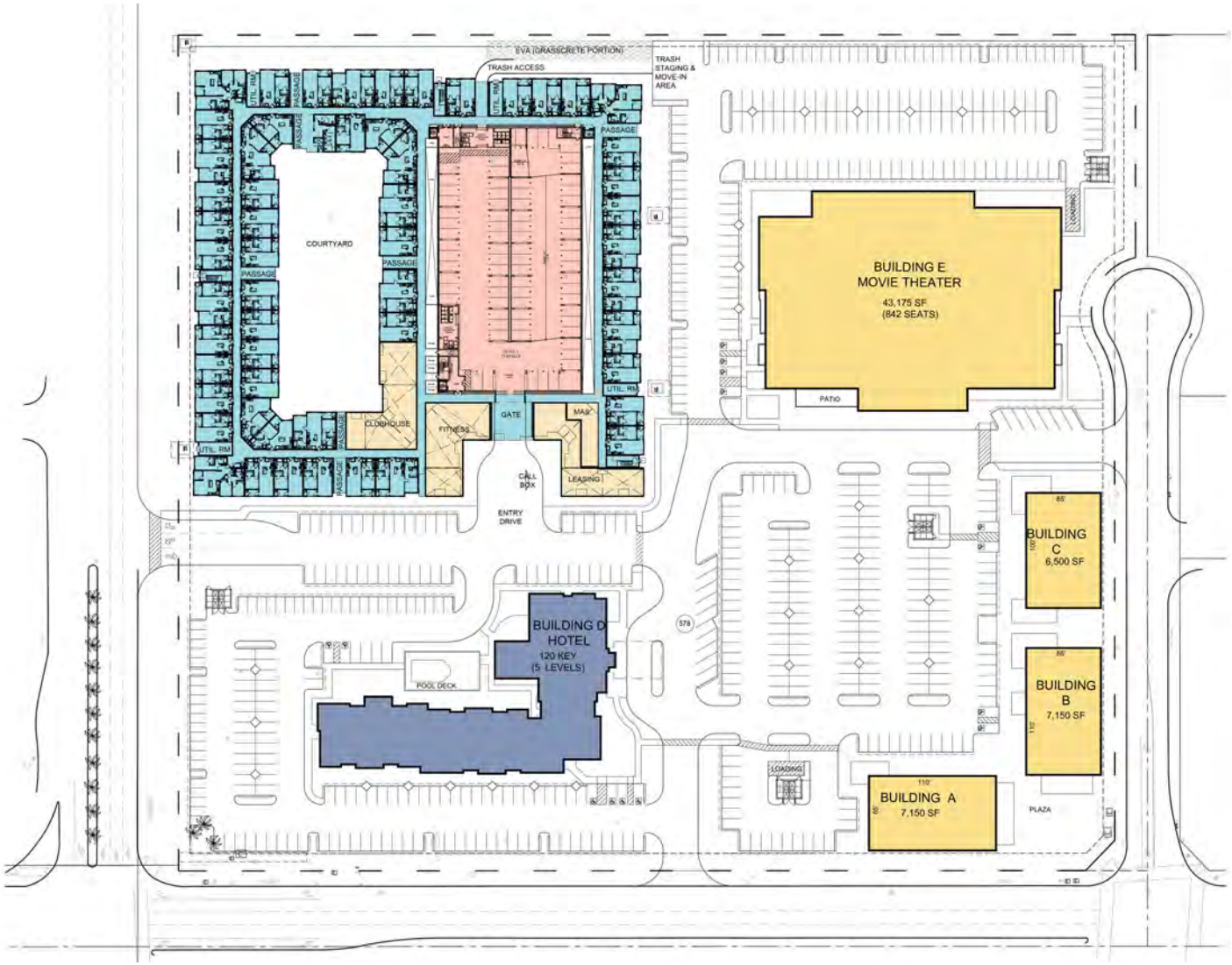
FEET

SOURCE: Bing Maps

Cypress City Center

Project Location and Study Area Intersections

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LSA

FIGURE 2

N

0 70 140

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SOURCE: Architects Orange

Cypress City Center

Conceptual Site Plan

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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	≤0.60
B	>0.60 and ≤0.70
C	>0.70 and ≤0.80
D	>0.80 and ≤0.90
E	>0.90 and ≤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), 6th 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	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

Source: *Highway Capacity Manual*, 6th Edition (Transportation Research Board 2016).

Level of Service	Signalized Intersection Delay (seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Source: *Highway Capacity Manual*, 6th Edition (Transportation Research Board 2016).

It should be noted that since the HCM 6th 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.

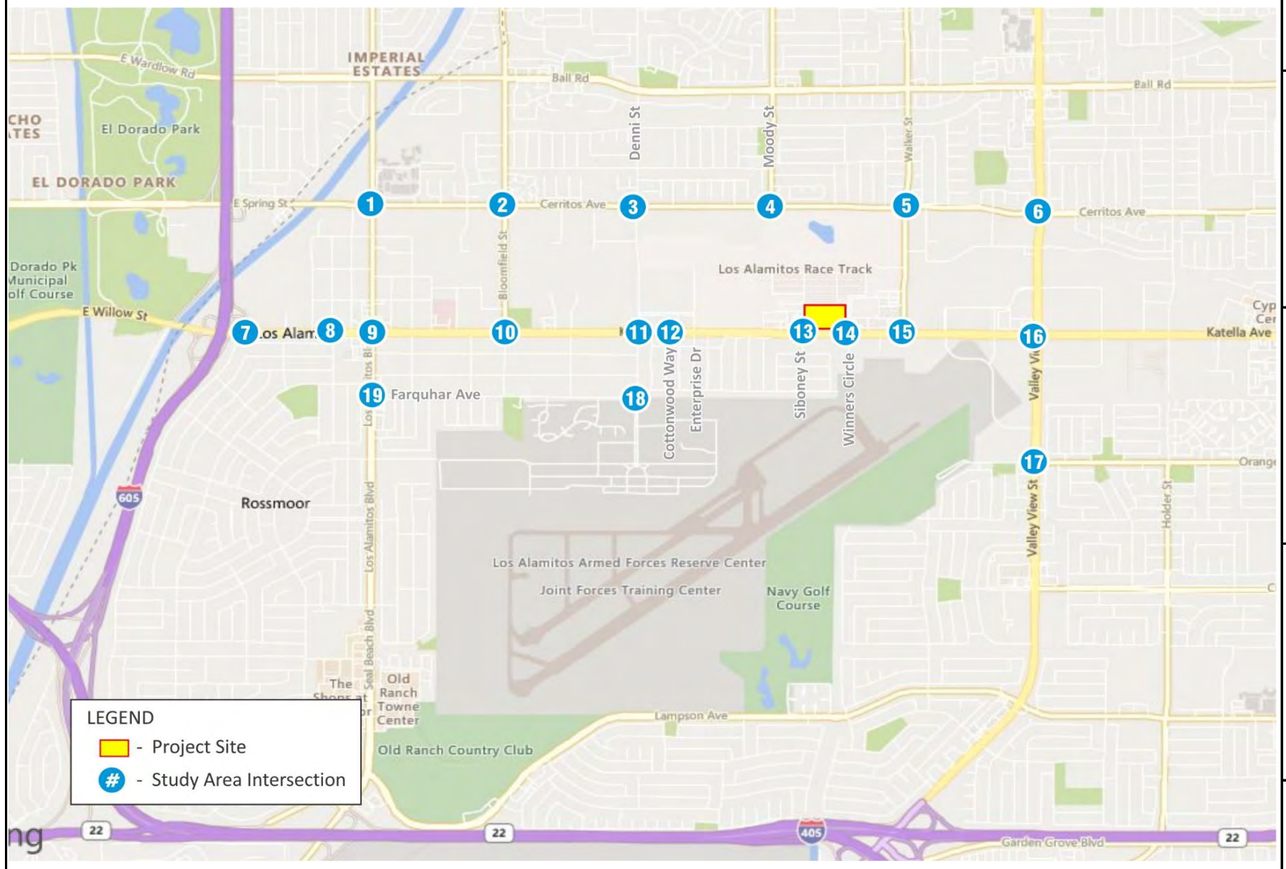
All other roadways within the study area are local or collector streets. The existing study area intersection geometrics are shown on Figure 3.

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.



1 Los Alamitos Blvd/Cerritos Ave

2 Bloomfield St/Cerritos Ave

3 Denni St/Cerritos Ave

4 Moody St/Cerritos Ave

5 Walker St/Cerritos Ave

6 Valley View St/Cerritos Ave

7 I-605 NB ramps/Katella Ave

8 Wallingsford Rd/Katella Ave

9 Los Alamitos Blvd/Katella Ave

10 Bloomfield St/Katella Ave

11 Lexington Dr/Katella Ave

12 Cottonwood Way/Katella Ave

13 Siboney St/Katella Ave

14 Winners Cir/Katella Ave

15 Walker St/Katella Ave

16 Valley View St/Katella Ave

17 Valley View St/Orangewood Ave

18 Lexington Dr/Farquhar Ave

19 Los Alamitos Blvd/Farquhar Ave

LSA

N

LEGEND

Signal

Stop Sign

F Free Right Turn

FIGURE 3

Cypress City Center
Existing Geometrics

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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.

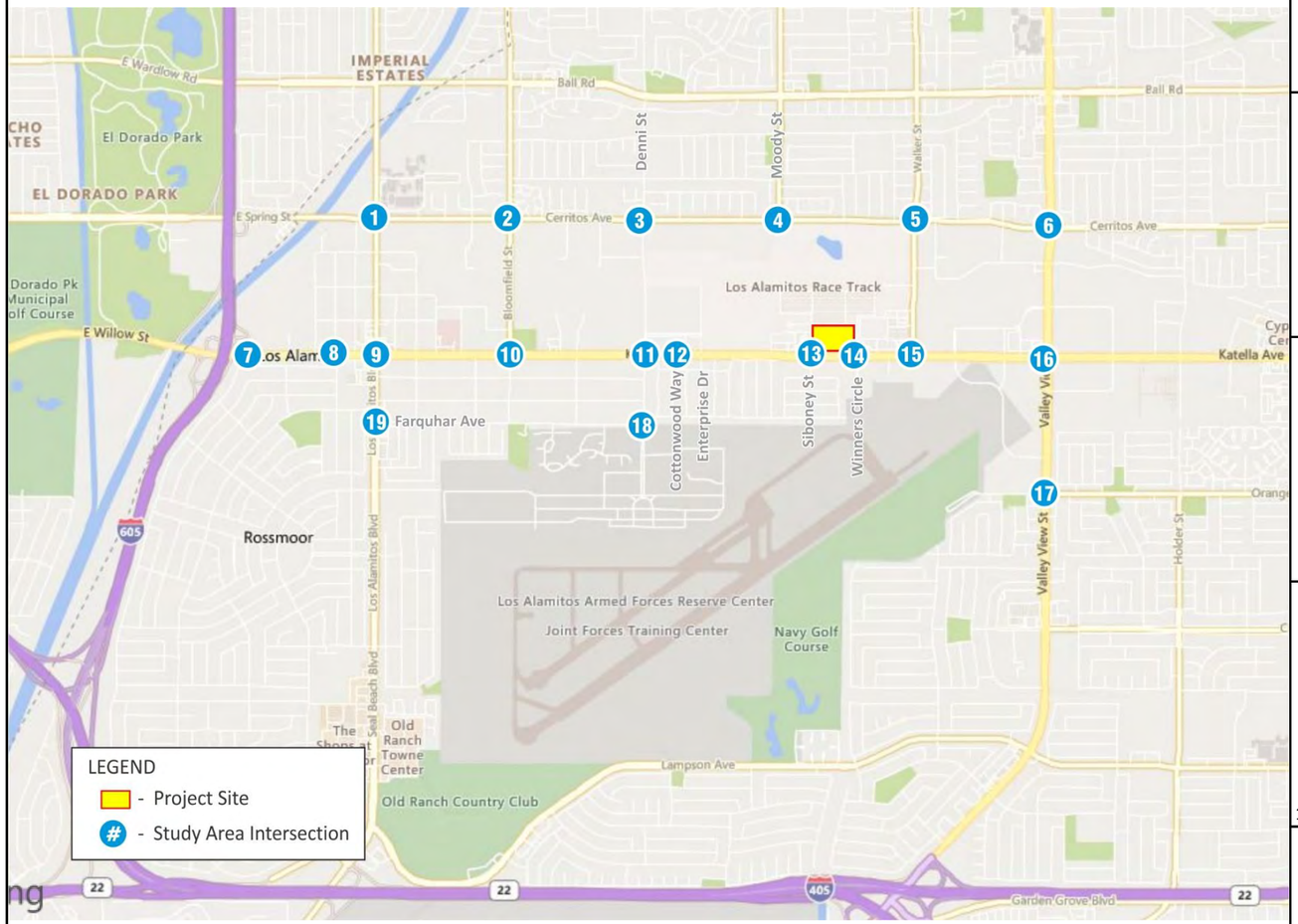
PROJECT CONDITIONS

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*, 10th Edition (2017). The project trip generation is shown in Table B.



90 / 66	753 / 542	94 / 84	↱ 138 / 115	90 / 99	569 / 285	168 / 61	↱ 100 / 177	128 / 81	153 / 78	239 / 95	↱ 137 / 209
↰	↓	↳	← 706 / 798	↰	↓	↳	← 724 / 1055	↰	↓	↳	← 793 / 1113
130 / 129	↳		↰ 247 / 296	31 / 159	↳		↰ 172 / 98	63 / 123	↳		↰ 112 / 49
800 / 801	→		↑ 178 / 261	826 / 1104	→		↑ 121 / 108	845 / 1192	→		↑ 23 / 56
129 / 165	↴		↱ 621 / 803	115 / 104	↴		↱ 312 / 514	86 / 33	↴		↱ 79 / 180
			335 / 409				192 / 158				49 / 77
1 Los Alamitos Blvd/Cerritos Ave				2 Bloomfield St/Cerritos Ave				3 Denni St/Cerritos Ave			

206 / 151	3 / 0	583 / 250	↱ 174 / 416	70 / 46	750 / 449	166 / 106	↱ 106 / 157	270 / 201	1342 / 1059	111 / 146	↱ 147 / 128
↰	↓	↳	← 869 / 1228	↰	↓	↳	← 841 / 1124	↰	↓	↳	← 732 / 667
71 / 224	↳		↰ 1 / 3	20 / 95	↳		↰ 120 / 93	97 / 317	↳		↰ 170 / 100
1065 / 1131	→		↑ 2 / 0	1139 / 1068	→		↑ 104 / 502	639 / 854	→		↑ 157 / 345
2 / 1	↴		↱ 1 / 0	490 / 237	↴		↱ 241 / 737	469 / 280	↴		↱ 1223 / 1893
							53 / 213				44 / 224
4 Moody St/Cerritos Ave				5 Walker St/Cerritos Ave				6 Valley View St/Cerritos Ave			

	398 / 159		↱ 833 / 846	30 / 60	140 / 66	18 / 19	↱ 15 / 11	185 / 219	937 / 965	155 / 137	↱ 84 / 95
	↓		← 1454 / 1675	↰	↓	↳	← 1671 / 2079	↰	↓	↳	← 1229 / 1514
118 / 184	↳		↰	17 / 25	↳		↰ 182 / 182	169 / 255	↳		↰ 325 / 302
1507 / 1835	→		↑ 1067 / 742	1901 / 2057	→		↑ 548 / 307	1538 / 1438	→		↑ 388 / 456
			↱	338 / 365	↴		↱ 159 / 74	255 / 493	↴		↱ 939 / 878
							118 / 160				433 / 366
7 I-605 NB ramps/Katella Ave				8 Wallingsford Rd/Katella Ave				9 Los Alamitos Blvd/Katella Ave			

401 / 181	190 / 160	179 / 171	↱ 245 / 235	140 / 107	114 / 126		↱ 95 / 99	3 / 9	7 / 14		↱ 7 / 8
↰	↓	↳	← 1239 / 1747	↰	↓	↳	← 1453 / 1674	↰	↓	↳	← 1539 / 1897
323 / 279	↳		↰ 30 / 59	109 / 105	↳		↰ 118 / 124	6 / 28	↳		
1591 / 1614	→		↑ 88 / 46	1604 / 1524	→		↑ 82 / 94	1635 / 1836	→		
41 / 77	↴		↱ 357 / 105	106 / 72	↴		↱ 39 / 55				
			12 / 25				132 / 161				
10 Bloomfield St/Katella Ave				11 Lexington Dr/Katella Ave				12 Cottonwood Way/Katella Ave			

12 / 64	0 / 3	36 / 75	↱ 16 / 38	2 / 46	2 / 0	4 / 32	↱ 6 / 6	172 / 213	11 / 1	790 / 596	↱ 365 / 602
↰	↓	↳	← 1675 / 1825	↰	↓	↳	← 1577 / 1785	↰	↓	↳	← 1568 / 1726
124 / 129	↳		↰ 27 / 68	21 / 110	↳		↰ 63 / 38	215 / 312	↳		↰ 13 / 0
1697 / 1701	→		↑ 42 / 82	1478 / 1728	→		↑ 9 / 48	1526 / 1600	→		↑ 3 / 27
31 / 32	↴		↱ 2 / 4	57 / 10	↴		↱ 1 / 2	14 / 5	↴		↱ 0 / 15
			61 / 58				6 / 50				0 / 4
13 Siboney St/Katella Ave				14 Winners Cir/Katella Ave				15 Walker St/Katella Ave			

207 / 230	1087 / 1351	186 / 228	↱ 140 / 217	47 / 136	1711 / 2104	253 / 579	↱ 562 / 445	74 / 97	217 / 70			1224 / 1487	122 / 129		↱ 106 / 136
↰	↓	↳	← 1174 / 998	↰	↓	↳	← 22 / 42	↰	↓			←	↳		↰ 315 / 392
234 / 246	↳		↰ 202 / 325	132 / 112	↳		↰ 103 / 87	77 / 89	↳						
956 / 1063	→		822 / 665	40 / 37	→		↑ 10 / 19	84 / 35	↴		↱ 10 / 91				↱ 1712 / 1554
689 / 1005	↴		↱ 1498 / 1474	20 / 22	↴		↱ 2027 / 1925				69 / 243				166 / 165
			272 / 176				63 / 100								
16 Valley View St/Katella Ave				17 Valley View St/Orangewood Ave				18 Lexington Dr/Farquhar Ave				19 Los Alamitos Blvd/Farquhar Ave			

FIGURE 4

LSA

N

LEGEND

XXX / YYY AM / PM Volume

Cypress City Center

Existing Peak-Hour Volumes

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LSA

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

LSA

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[1]									
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[2]			(375)	(1)	(1)	(2)	(26)	(26)	(52)
Shopping Center Pass-By Trip Reduction (PM-34%)[3]			0	0	0	0	(11)	(12)	(23)
Net Trip Generation			**4,978**	**68**	**96**	**164**	**176**	**147**	**323**

[1] 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.

[2] 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%).

[3] 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.

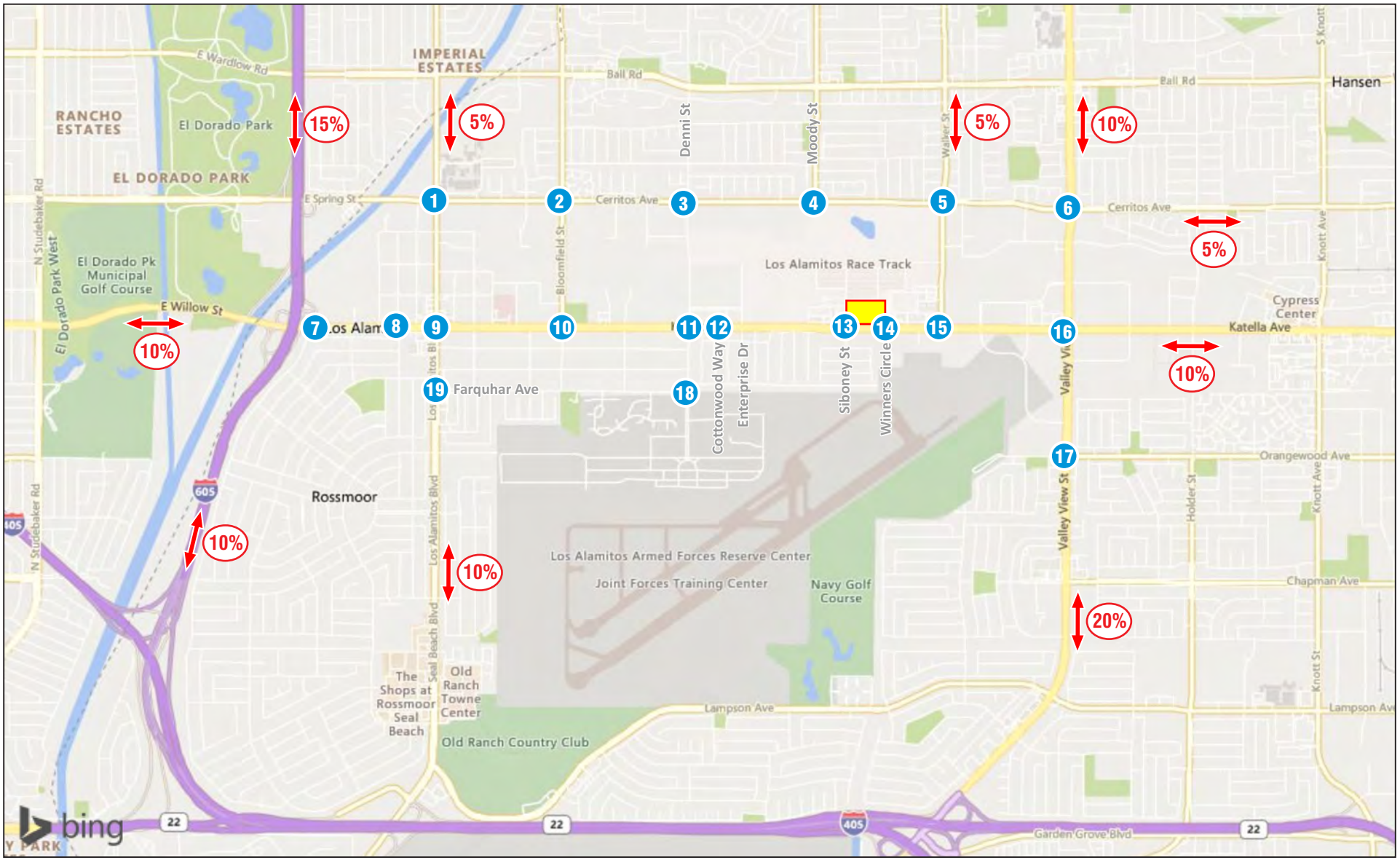
Trip Distribution and Assignment

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

FIGURE 5

LEGEND

- Project Site
- # - Study Area Intersection
- XX% - Project Trip Distribution Percentage

0 1500 3000

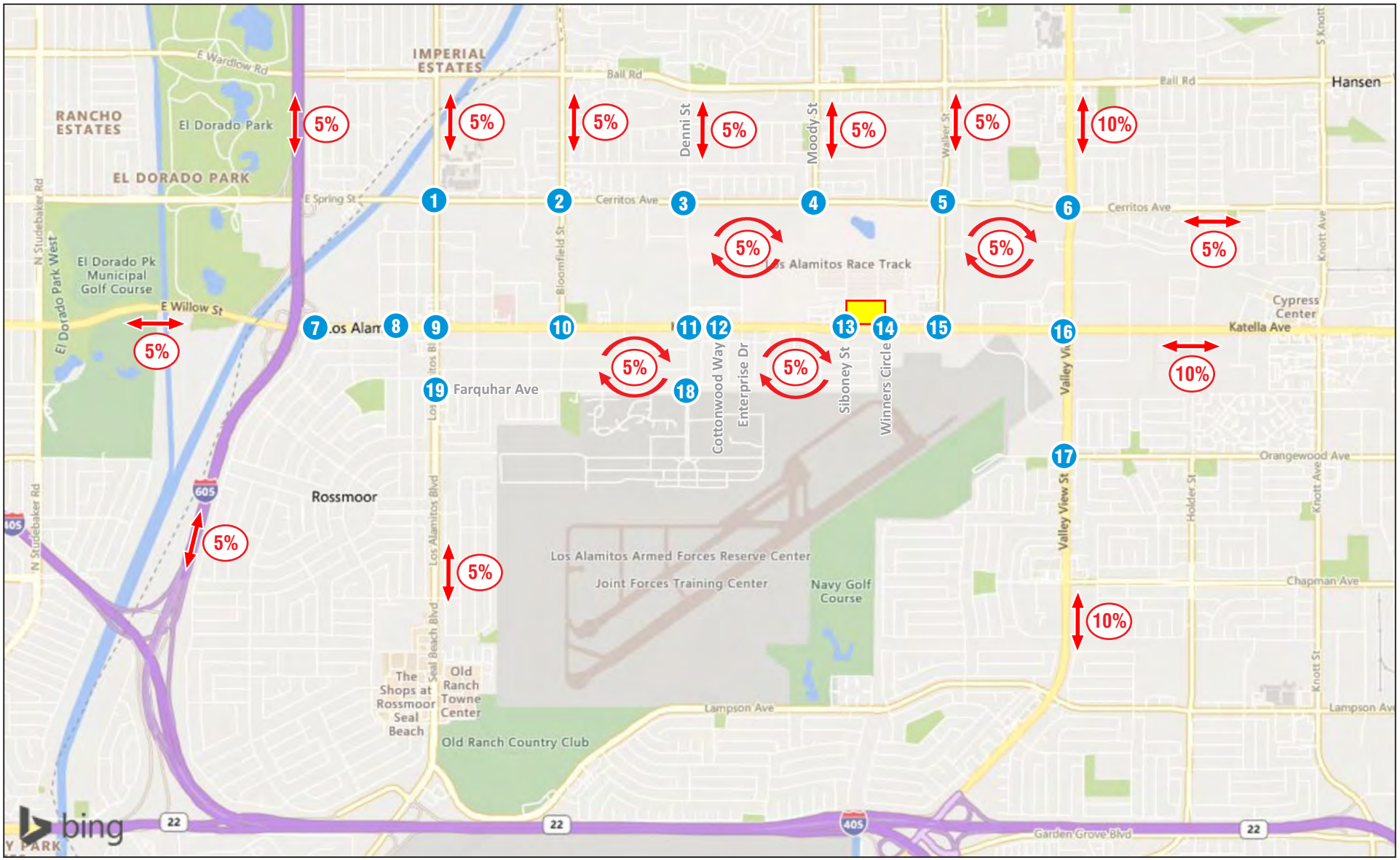
FEET

SOURCE: Bing Maps

Cypress City Center

Project Trip Distribution - Residential

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LSA

FIGURE 6

LEGEND

- Project Site
- # - Study Area Intersection
- XX% - Project Trip Distribution Percentage

0 1500 3000

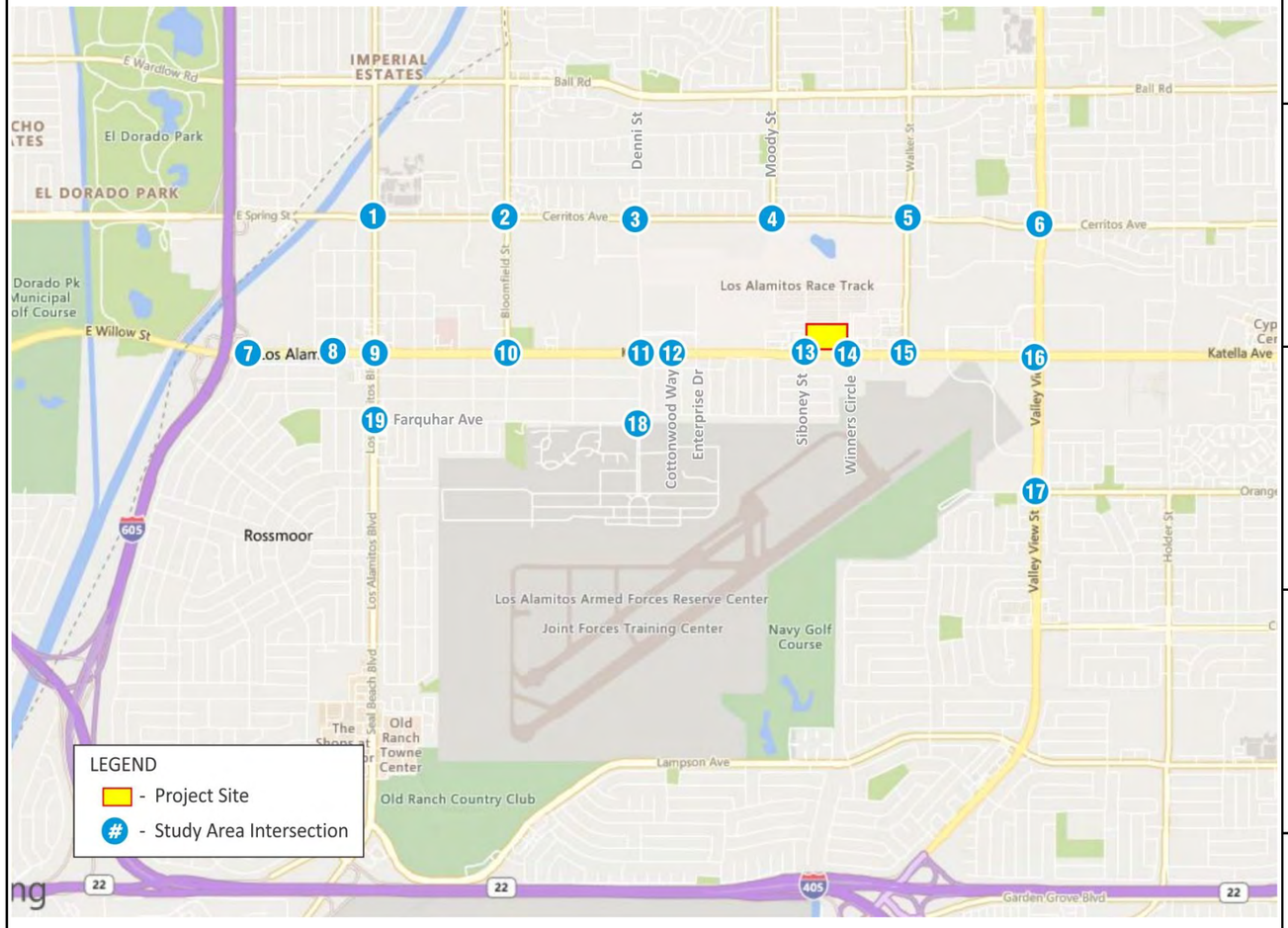
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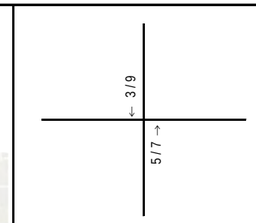
SOURCE: Bing Maps

Cypress City Center

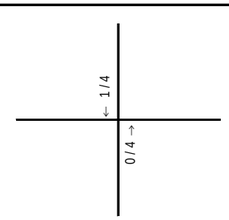
Project Trip Distribution - Retail

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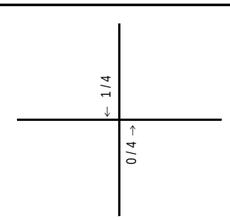




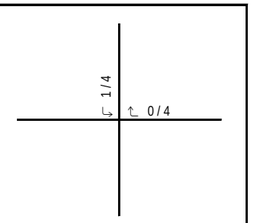
1 Los Alamitos Blvd/Cerritos Ave



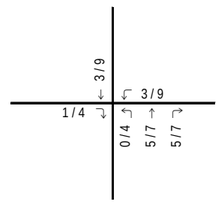
2 Bloomfield St/Cerritos Ave



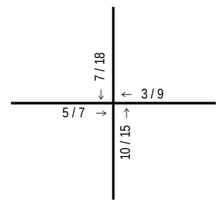
3 Denni St/Cerritos Ave



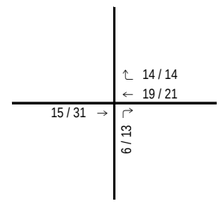
4 Moody St/Cerritos Ave



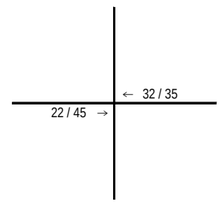
5 Walker St/Cerritos Ave



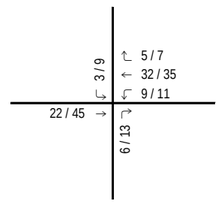
6 Valley View St/Cerritos Ave



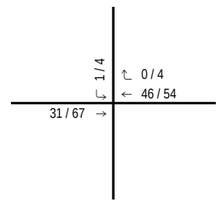
7 I-605 NB ramps/Katella Ave



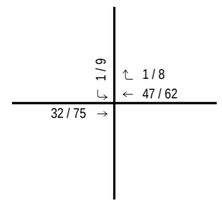
8 Wallingsford Rd/Katella Ave



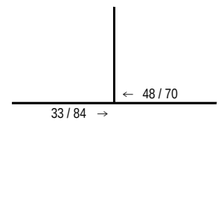
9 Los Alamitos Blvd/Katella Ave



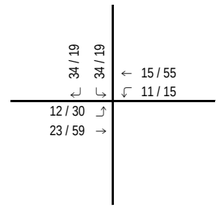
10 Bloomfield St/Katella Ave



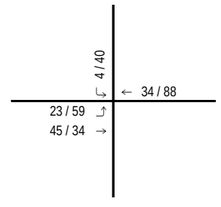
11 Lexington Dr/Katella Ave



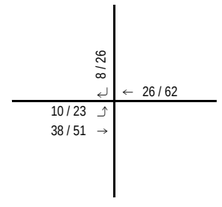
12 Cottonwood Way/Katella Ave



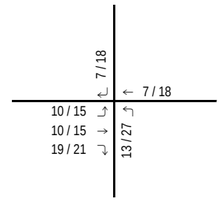
13 Siboney St/Katella Ave



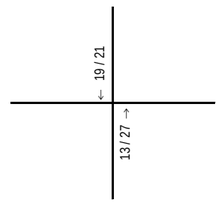
14 Winners Cir/Katella Ave



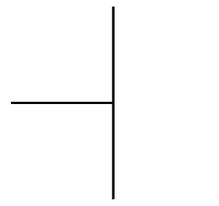
15 Walker St/Katella Ave



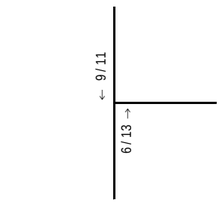
16 Valley View St/Katella Ave



17 Valley View St/Orangewood Ave



18 Lexington Dr/Farquhar Ave



19 Los Alamitos Blvd/Farquhar Ave

LSA

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LEGEND

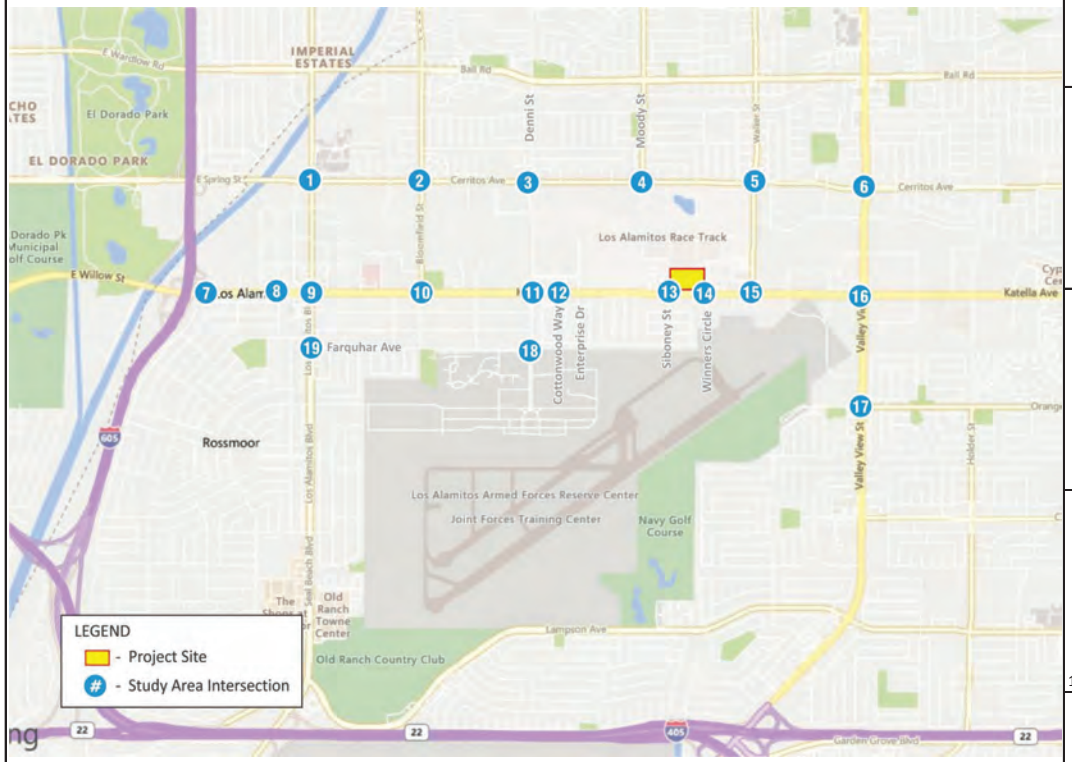
XXX / YYY AM / PM Volume

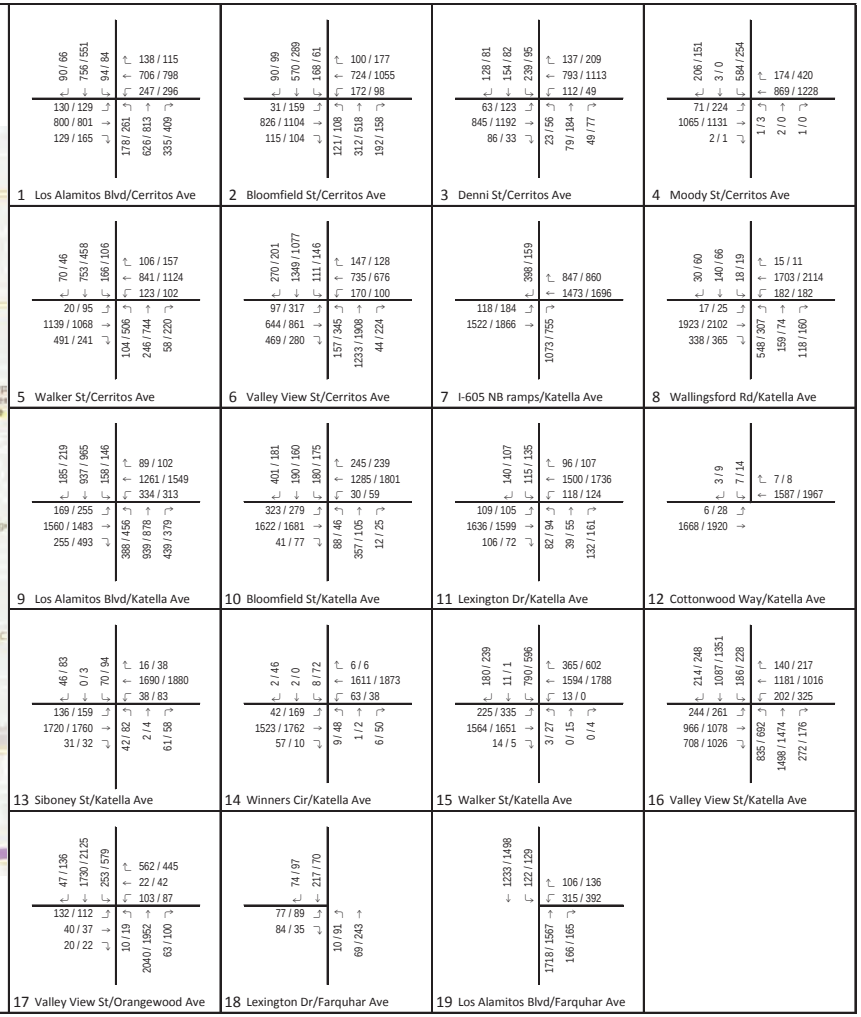
FIGURE 7

Cypress City Center

Project Trip Assignment

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LSA

N

LEGEND

XXX / YYY AM / PM Volume

FIGURE 8

Cypress City Center

Existing plus Project Peak-Hour Volumes

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LSA

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.

LSA

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)[1]	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[2]	10845 Cherry St	1 Duplex	15	0	1	1	1	0	1
6	Los Alamitos Luxury Apartments[3]	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[4]	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[2]	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:

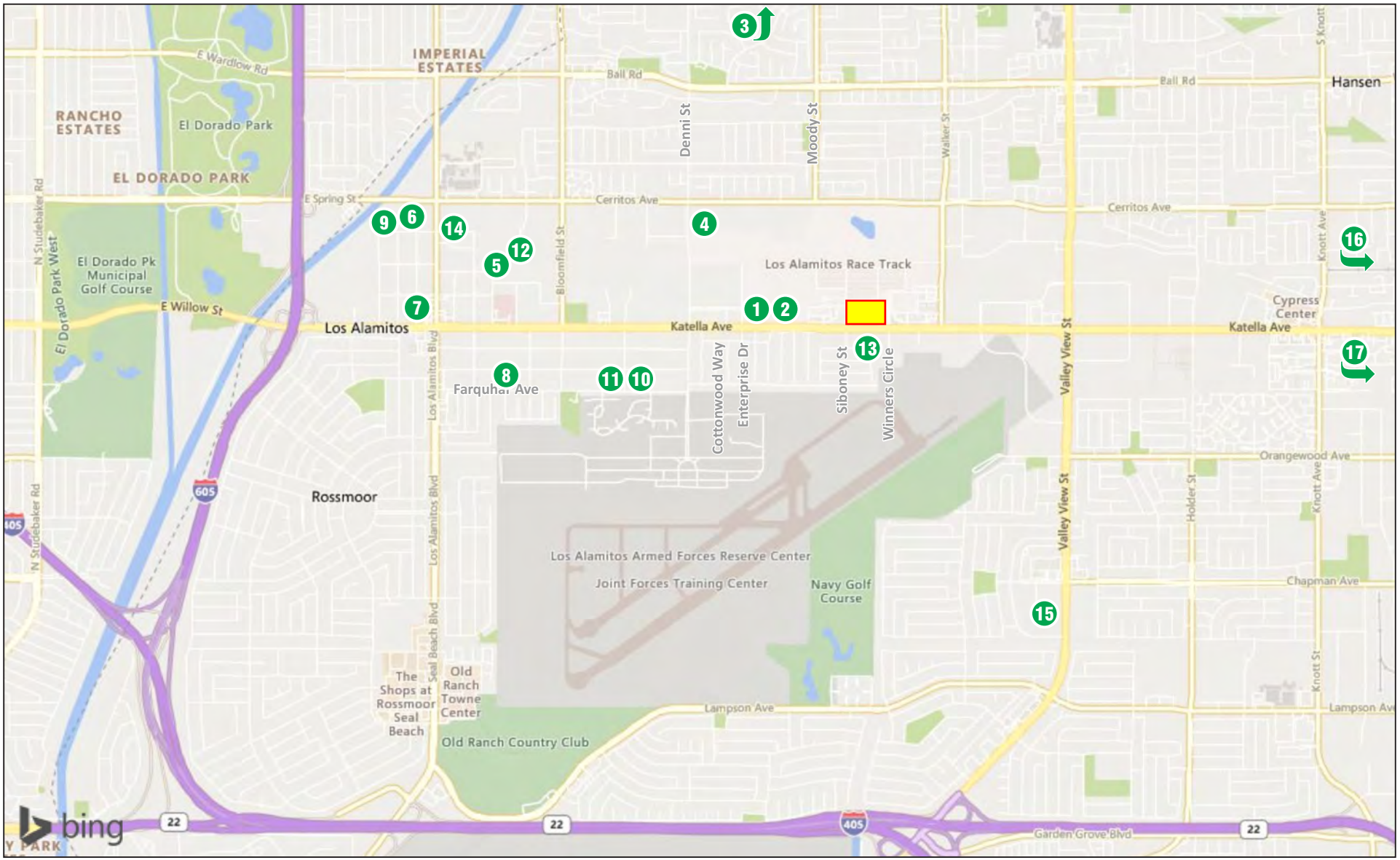
[1] At the time of preparation of this traffic study, 40% of the project was completed, and 60% was incomplete. Trips show the incomplete part of the total project trips (60%).

[2] Trips for duplex were estimated as 2 apartment units.

[3] Trip generation referenced from the Los Alamitos Luxury Apartments Initial Study (2018).

[4] Trip generation referenced from the Cottonwood Church Site Residential Development Traffic Impact Study (2017).

ADT = average daily trips



LSA

LEGEND

- Project Site
- # - Cumulative Projects

0 1500 3000

FEET

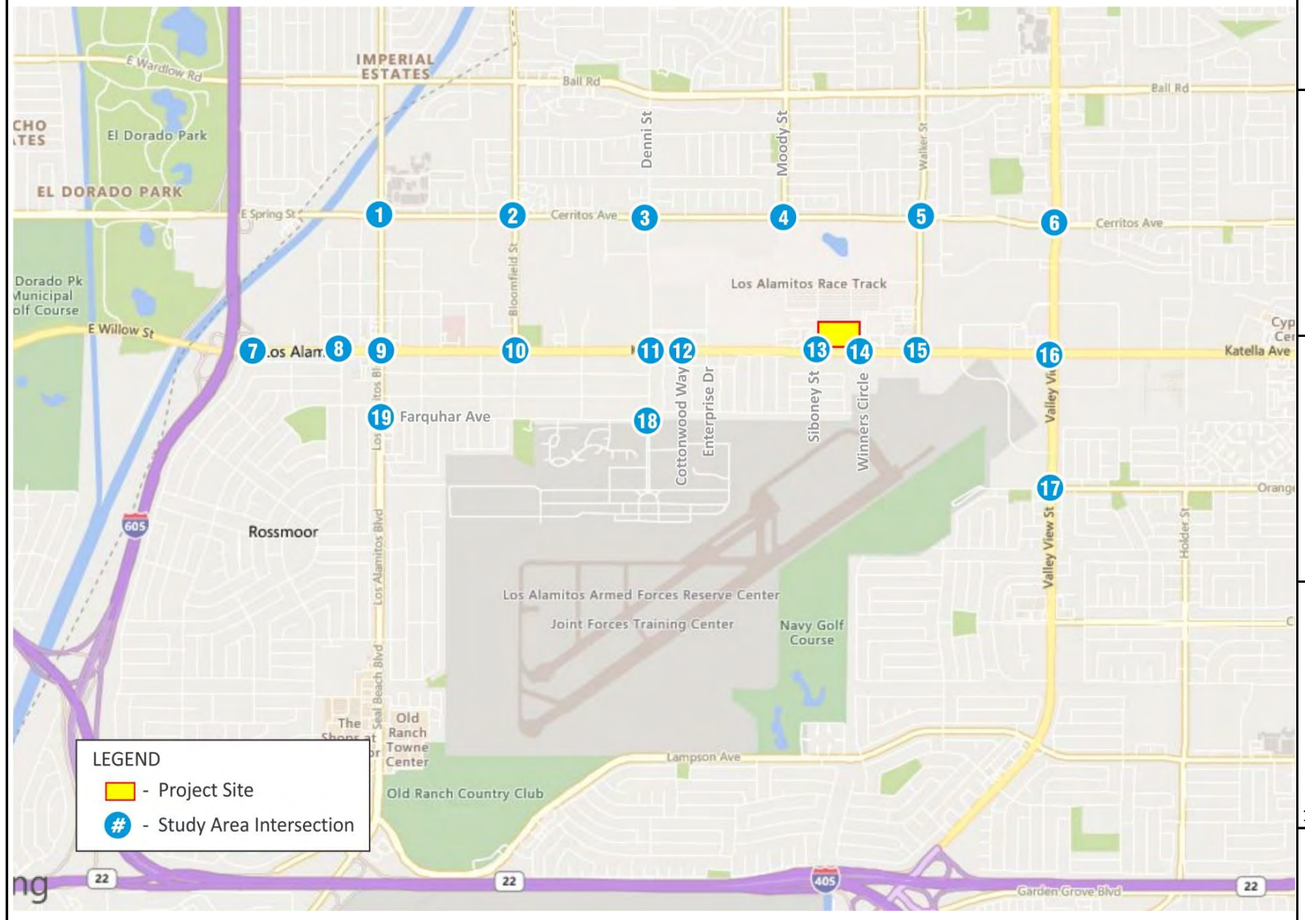
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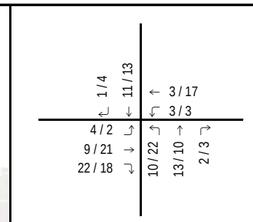
FIGURE 9

Cypress City Center

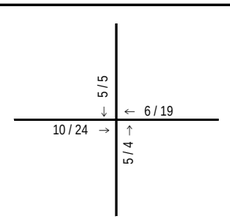
Locations of Cumulative Projects

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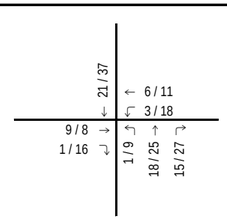




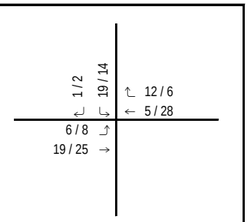
1 Los Alamitos Blvd/Cerritos Ave



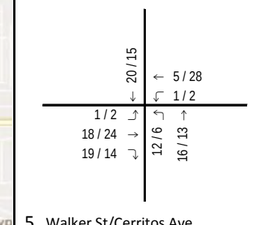
2 Bloomfield St/Cerritos Ave



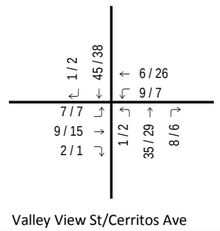
3 Denni St/Cerritos Ave



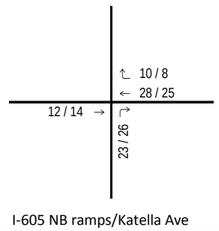
4 Moody St/Cerritos Ave



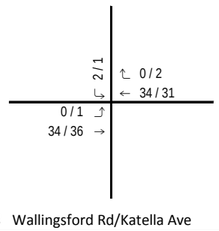
5 Walker St/Cerritos Ave



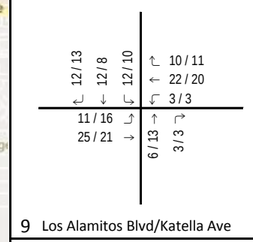
6 Valley View St/Cerritos Ave



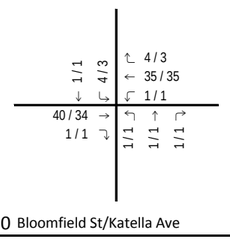
7 I-605 NB ramps/Katella Ave



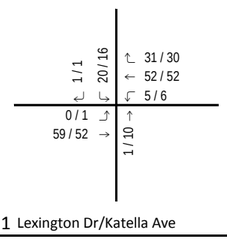
8 Wallingsford Rd/Katella Ave



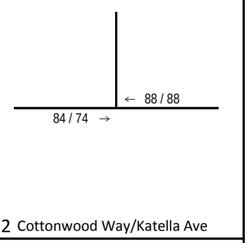
9 Los Alamitos Blvd/Katella Ave



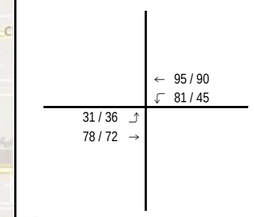
10 Bloomfield St/Katella Ave



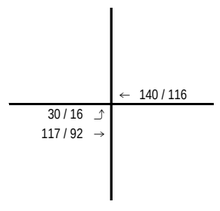
11 Lexington Dr/Katella Ave



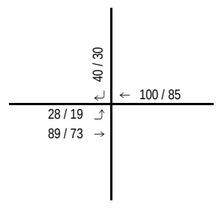
12 Cottonwood Way/Katella Ave



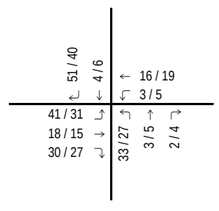
13 Siboney St/Katella Ave



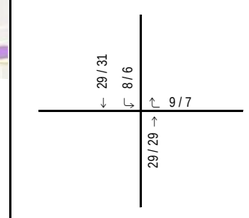
14 Winners Cir/Katella Ave



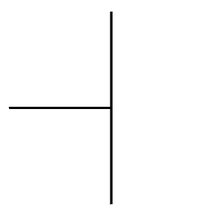
15 Walker St/Katella Ave



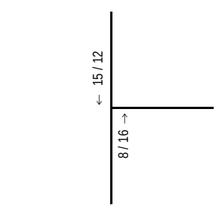
16 Valley View St/Katella Ave



17 Valley View St/Orangewood Ave



18 Lexington Dr/Farquhar Ave



19 Los Alamitos Blvd/Farquhar Ave

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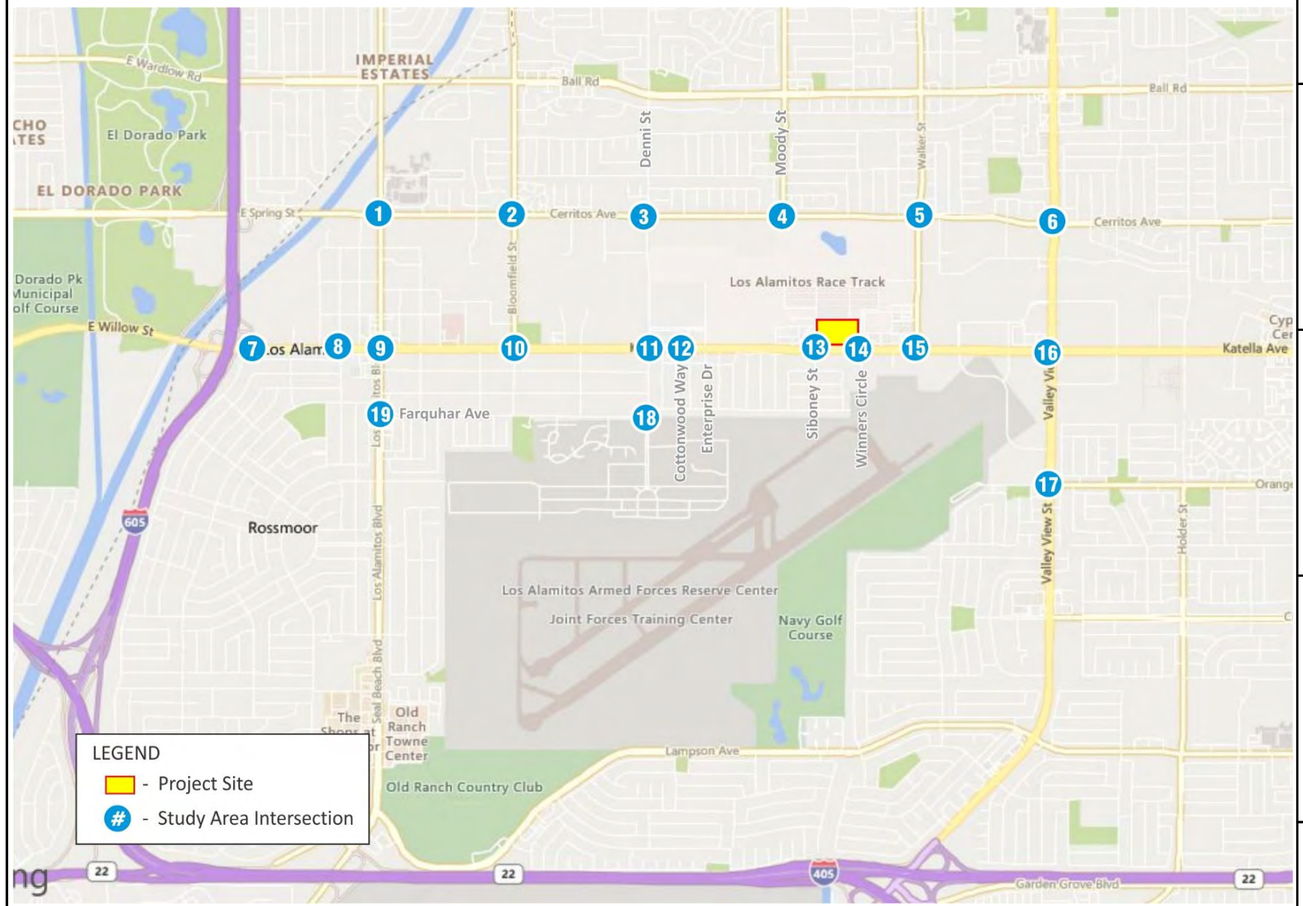
XXX / YYY AM / PM Volume

FIGURE 10

Cypress City Center

Cumulative Projects Peak-Hour Volumes

P:\SHO1902\xls\Figures\Fig-12 - Cumulative Projects Peak-Hour Volumes.xlsx (7/16/2019)



1 Los Alamitos Blvd/Cerritos Ave

92 / 71	775 / 563	95 / 85
136 / 133	821 / 834	153 / 185
191 / 287	643 / 825	342 / 418
140 / 117	720 / 827	254 / 303

2 Bloomfield St/Cerritos Ave

91 / 100	583 / 294	171 / 62
31 / 161	848 / 1145	117 / 106
123 / 110	322 / 526	195 / 160
102 / 180	741 / 1090	175 / 99

3 Denni St/Cerritos Ave

130 / 82	176 / 116	243 / 96
64 / 125	867 / 1218	88 / 49
24 / 66	98 / 208	65 / 105
139 / 212	811 / 1141	117 / 68

4 Moody St/Cerritos Ave

210 / 155	3 / 0	611 / 268
78 / 235	1100 / 1173	2 / 1
1 / 3	2 / 0	1 / 0
189 / 428	887 / 1274	

5 Walker St/Cerritos Ave

71 / 47	781 / 471	168 / 108
21 / 98	1174 / 1108	516 / 255
118 / 516	261 / 761	54 / 216
108 / 159	859 / 1169	123 / 96

6 Valley View St/Cerritos Ave

275 / 206	1407 / 1113	113 / 148
105 / 329	658 / 882	478 / 285
160 / 352	1276 / 1950	53 / 233
149 / 130	749 / 703	182 / 109

7 I-605 NB ramps/Katella Ave

		404 / 161
120 / 187	1542 / 1877	
	1106 / 779	
855 / 867	1504 / 1725	

8 Wallingsford Rd/Katella Ave

30 / 61	142 / 67	20 / 20
17 / 26	1964 / 2124	343 / 370
556 / 312	161 / 75	120 / 162
15 / 13	1730 / 2141	185 / 185

9 Los Alamitos Blvd/Katella Ave

200 / 235	963 / 987	169 / 149
183 / 275	1586 / 1481	259 / 500
394 / 463	959 / 904	442 / 374
95 / 107	1269 / 1557	333 / 310

10 Bloomfield St/Katella Ave

407 / 184	194 / 163	186 / 177
328 / 283	1655 / 1672	43 / 79
90 / 48	363 / 108	13 / 26
253 / 242	1293 / 1808	31 / 61

11 Lexington Dr/Katella Ave

143 / 110	136 / 144	
111 / 108	1687 / 1599	108 / 73
83 / 95	41 / 66	134 / 163
127 / 130	1527 / 1751	125 / 132

12 Cottonwood Way/Katella Ave

3 / 9	7 / 14	
6 / 28	1744 / 1938	
7 / 8	1650 / 2013	

13 Siboney St/Katella Ave

12 / 65	0 / 3	37 / 76
157 / 167	1800 / 1799	31 / 32
43 / 83	2 / 4	62 / 59
16 / 39	1795 / 1942	108 / 114

14 Winners Cir/Katella Ave

2 / 47	2 / 0	4 / 32
51 / 128	1617 / 1846	58 / 10
9 / 49	1 / 2	6 / 51
6 / 6	1741 / 1928	64 / 39

15 Walker St/Katella Ave

215 / 246	11 / 1	802 / 605
246 / 336	1638 / 1697	14 / 5
3 / 27	0 / 15	0 / 4
370 / 611	1692 / 1837	13 / 0

16 Valley View St/Katella Ave

261 / 273	1107 / 1377	189 / 231
279 / 281	988 / 1094	729 / 1047
867 / 702	1523 / 1501	278 / 183
142 / 220	1208 / 1032	208 / 335

17 Valley View St/Orangewood Ave

48 / 138	1766 / 2167	265 / 594
134 / 114	41 / 38	20 / 22
10 / 19	2086 / 1983	64 / 102
579 / 459	22 / 43	105 / 88

18 Lexington Dr/Farquhar Ave

75 / 98	220 / 71	
78 / 90	85 / 36	
10 / 92	70 / 247	

19 Los Alamitos Blvd/Farquhar Ave

1257 / 1521	124 / 131	
1746 / 1593	168 / 167	
108 / 138	320 / 398	

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XXX / YYY AM / PM Volume

FIGURE 11

Cypress City Center

Opening Year Peak-Hour Volumes

P:\SHO1902\xls\Figures\Fig-13 - Opening Year Peak-Hour Volumes.xlsx (7/16/2019)

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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.

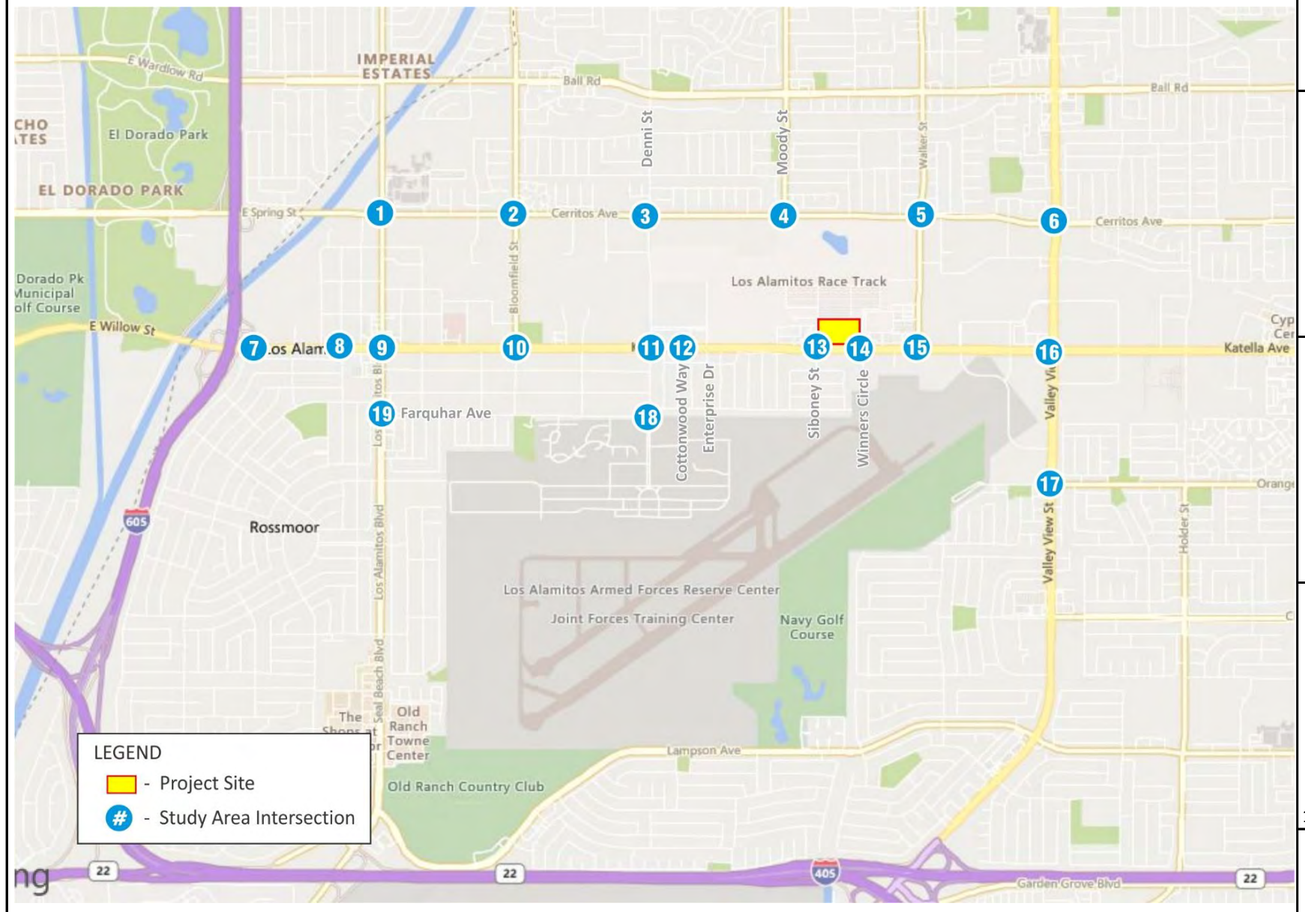
LOS = level of service

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.



92 / 71	778 / 572	95 / 85	↱ 140 / 117	91 / 100	583 / 298	171 / 62	↱ 102 / 180	130 / 82	176 / 120	243 / 96	↱ 139 / 212
136 / 133	821 / 834	153 / 185	← 720 / 827	31 / 161	848 / 1145	117 / 106	← 741 / 1090	64 / 125	867 / 1218	88 / 49	← 811 / 1141
↲	↓	↳	↰ 254 / 303	↲	↓	↳	↰ 175 / 99	↲	↓	↳	↰ 117 / 68
191 / 287	647 / 833	342 / 418	↑	123 / 110	322 / 530	195 / 160	↑	24 / 66	98 / 212	65 / 105	↑
1 Los Alamitos Blvd/Cerritos Ave				2 Bloomfield St/Cerritos Ave				3 Denni St/Cerritos Ave			

210 / 155	3 / 0	611 / 272	↱ 189 / 432	71 / 47	784 / 480	168 / 108	↱ 108 / 159	275 / 206	1413 / 1130	113 / 148	↱ 149 / 130
78 / 235	1100 / 1173	2 / 1	← 887 / 1274	21 / 98	1174 / 1108	516 / 259	← 859 / 1169	105 / 329	663 / 890	478 / 285	← 752 / 711
↲	↓	↳	↰ 1 / 3	↲	↓	↳	↰ 127 / 104	↲	↓	↳	↰ 182 / 109
1 / 3	2 / 0	1 / 0	↑	118 / 520	266 / 768	59 / 223	↑	160 / 352	1286 / 1964	53 / 233	↑
4 Moody St/Cerritos Ave				5 Walker St/Cerritos Ave				6 Valley View St/Cerritos Ave			

		404 / 161	↱ 868 / 881	30 / 61	142 / 67	20 / 20	↱ 15 / 13	200 / 235	963 / 987	172 / 158	↱ 100 / 115
120 / 187	1557 / 1908	→	← 1523 / 1746	17 / 26	1985 / 2169	343 / 370	← 1763 / 2176	183 / 275	1607 / 1525	259 / 500	← 1302 / 1592
↲	→	↳	↰ 1112 / 792	↲	→	↳	↰ 185 / 185	↲	→	↳	↰ 342 / 321
			↑	556 / 312	161 / 75	120 / 162	↑	394 / 463	959 / 904	448 / 388	↑
7 I-605 NB ramps/Katella Ave				8 Wallingsford Rd/Katella Ave				9 Los Alamitos Blvd/Katella Ave			

407 / 184	194 / 163	187 / 182	↱ 253 / 246	143 / 110	138 / 152		↱ 128 / 138	3 / 9	7 / 14		↱ 7 / 8
328 / 283	1686 / 1739	43 / 79	← 1340 / 1862	111 / 108	1719 / 1674	108 / 73	← 1574 / 1812	6 / 28	1778 / 2021	→	← 1698 / 2082
↲	→	↳	↰ 31 / 61	↲	→	↳	↰ 125 / 132	↲	→	↳	
90 / 48	363 / 108	13 / 26	↑	83 / 95	41 / 66	134 / 163	↑				
10 Bloomfield St/Katella Ave				11 Lexington Dr/Katella Ave				12 Cottonwood Way/Katella Ave			

46 / 84	0 / 3	71 / 95	↱ 16 / 39	2 / 47	2 / 0	8 / 72	↱ 6 / 6	223 / 273	11 / 1	802 / 605	↱ 370 / 611
169 / 196	1822 / 1858	31 / 32	← 1810 / 1997	73 / 186	1662 / 1879	58 / 10	← 1775 / 2016	256 / 358	1676 / 1748	14 / 5	← 1719 / 1899
↲	↓	↳	↰ 119 / 129	↲	↓	↳	↰ 64 / 39	↲	↓	↳	↰ 13 / 0
43 / 83	2 / 4	62 / 59	↑	9 / 49	1 / 2	6 / 51	↑	3 / 27	0 / 15	0 / 4	↑
13 Siboney St/Katella Ave				14 Winners Cir/Katella Ave				15 Walker St/Katella Ave			

268 / 290	1107 / 1377	189 / 231	↱ 142 / 220					1266 / 1531	124 / 131		↱ 108 / 138
288 / 296	998 / 1109	748 / 1068	← 1215 / 1049					↓	↳		← 320 / 398
↲	↓	↳	↰ 208 / 335								
879 / 729	1523 / 1501	278 / 183	↑								
16 Valley View St/Katella Ave											

48 / 138	1784 / 2189	265 / 594	↱ 579 / 459	75 / 98	220 / 71						
134 / 114	41 / 38	20 / 22	← 22 / 43	78 / 90	85 / 36						
↲	↓	↳	↰ 105 / 88	↲	↓						
10 / 19	2099 / 2010	64 / 102	↑	10 / 92	70 / 247						
17 Valley View St/Orangewood Ave				18 Lexington Dr/Farquhar Ave				19 Los Alamitos Blvd/Farquhar Ave			

LSA

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XXX / YYY AM / PM Volume

FIGURE 12

Cypress City Center

Opening Year plus Project Peak-Hour Volumes

LSA

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, 6th 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.

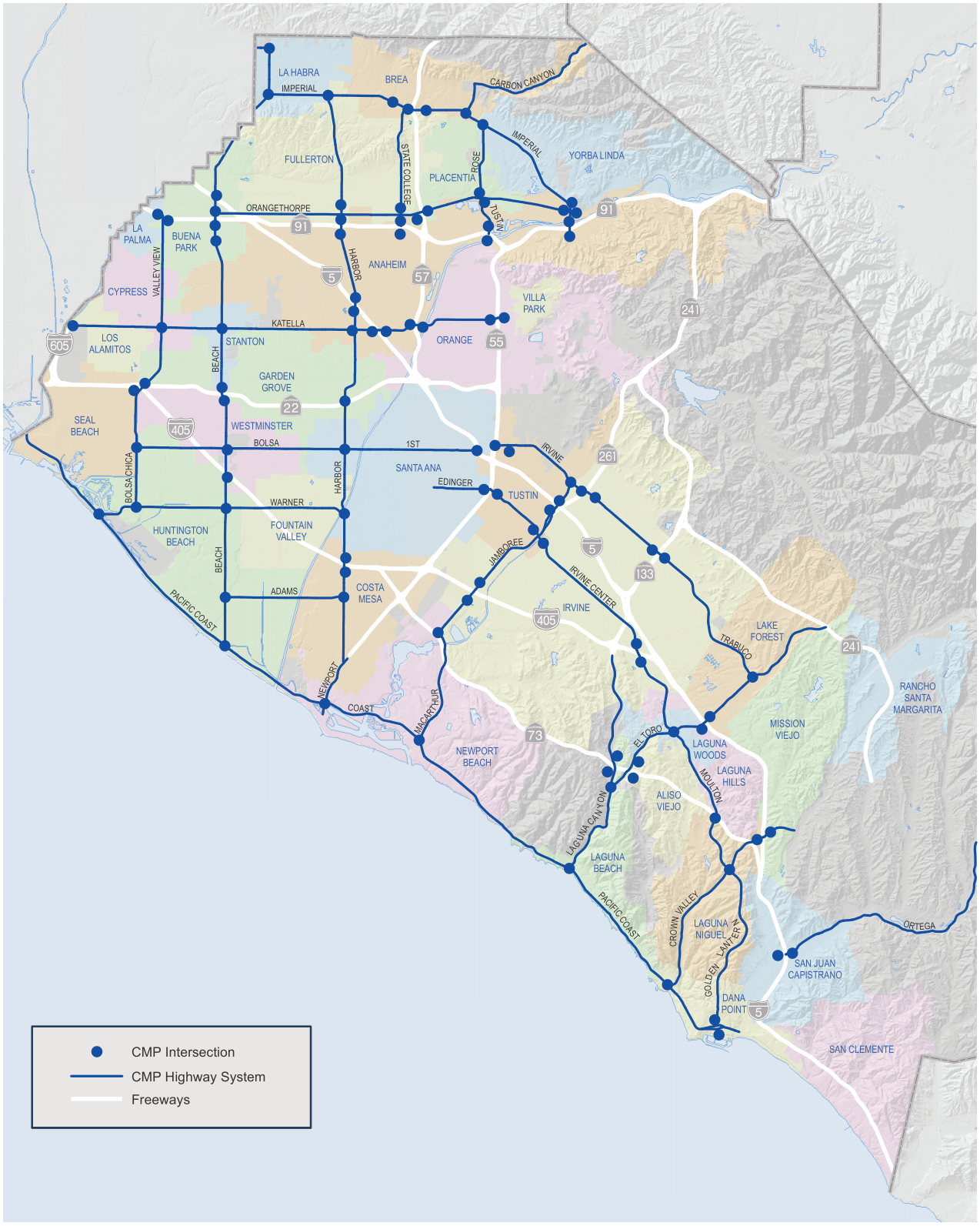


FIGURE 13

LSA

N

0 2.5 5

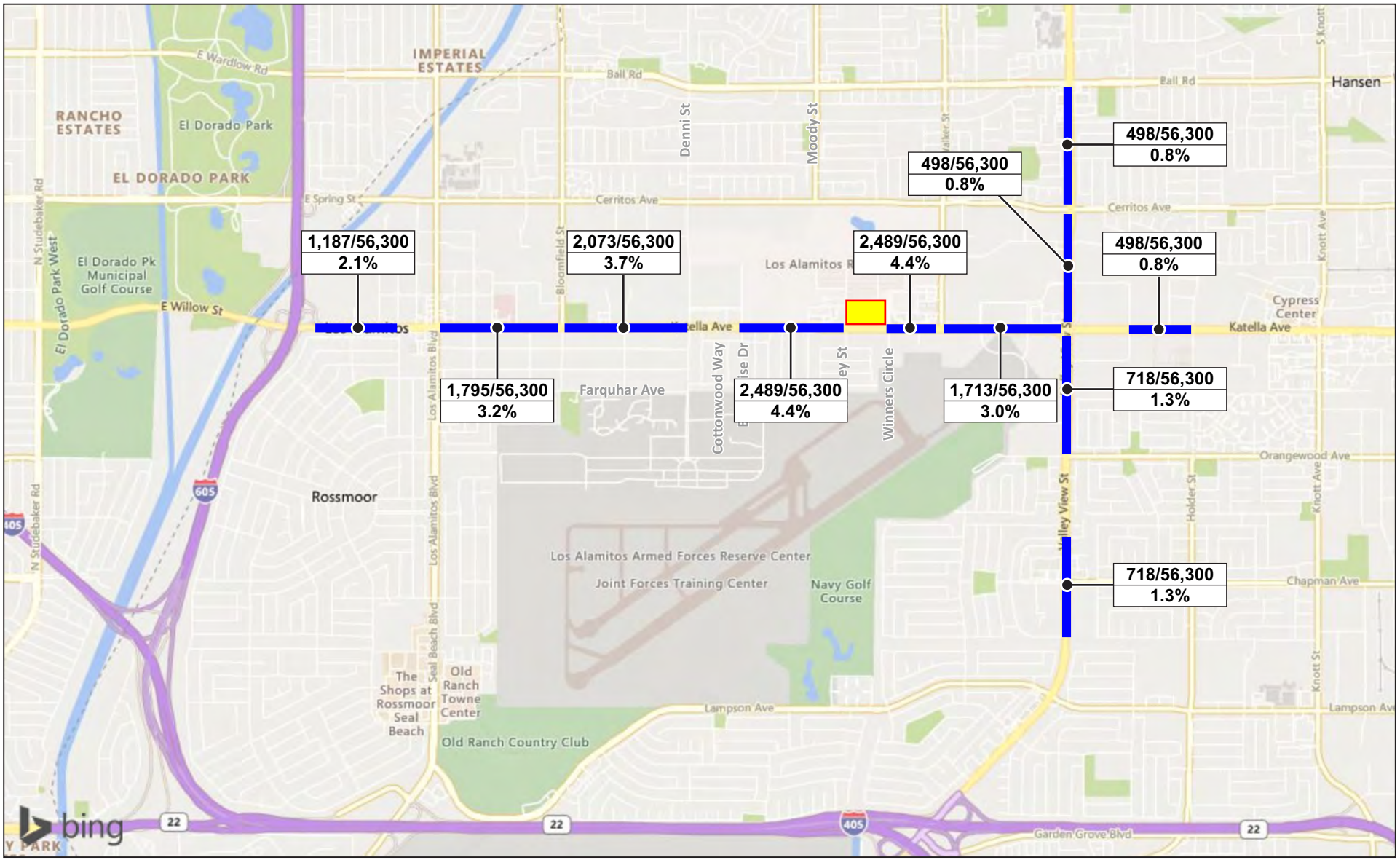
MILES

SOURCE: OCTA

Cypress City Center

County of Orange CMP Highway System

I:\SHO1902\G\CMP Highway System.cdr (7/17/2019)



LSA

LEGEND

- Project Site

XX/YYY - Project ADT/LOS E Capacity
ZZ% - Project Percentage of LOS E Capacity

0 1500 3000
FEET

SOURCE: Bing Maps

FIGURE 14

Cypress City Center
CMP Study Area Determination

I:\SHO1902\G\CMP Determination-Modified Project.cdr (7/17/2019)

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, 6th 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).

20 Executive Park, Suite 200, Irvine, California 92614 949.553.0666 www.lsa.net

LSA is a business name of LSA Associates, Inc.

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.

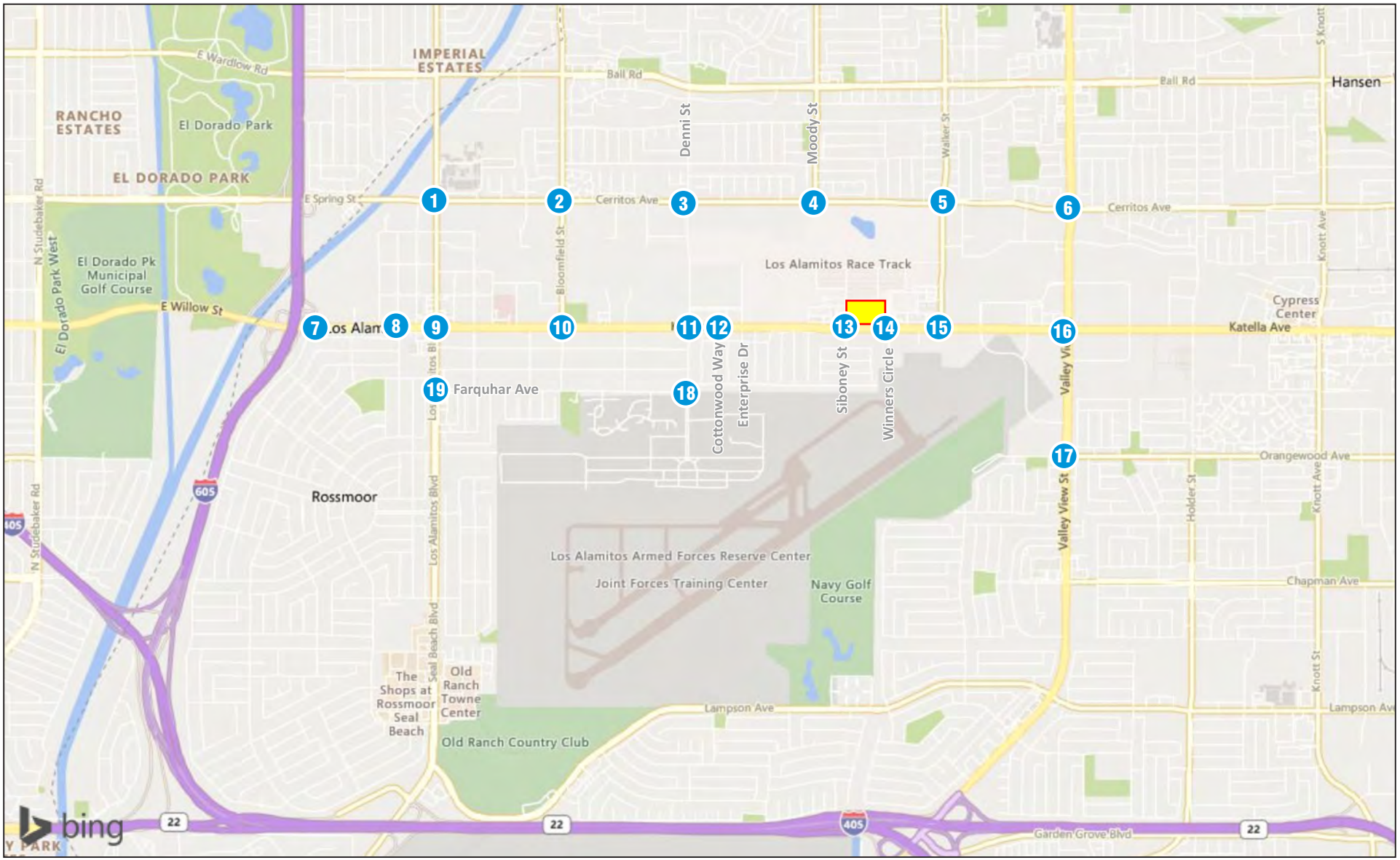
Upon the City's approval of this TIA Scope of Work, LSA will proceed with the TIA.

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

FIGURE 1

LEGEND

- Project Site
- # - Study Area Intersection

0 1500 3000

FEET

SOURCE: Bing Maps

Cypress City Center

Project Location and Study Area Intersections

I:\SHO1902\G\Location&Ints.cdr (7/17/2019)

LSA

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[1]									
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[2]			(375)	(1)	(1)	(2)	(26)	(26)	(52)
Shopping Center Pass-By Trip Reduction (PM-34%)[3]			0	0	0	0	(11)	(12)	(23)
Net Trip Generation			**4,978**	**68**	**96**	**164**	**176**	**147**	**323**

[1] 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.

[2] 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%).

[3] 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[3]		
	ITE LUCs[1]	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[2]				0		
				166	69	97

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

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[5]	164	68	96
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	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%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]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.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]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[3]		
	ITE LUCs[1]	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[2]				0		
				398	213	185

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

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[5]	346	187	159
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	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%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

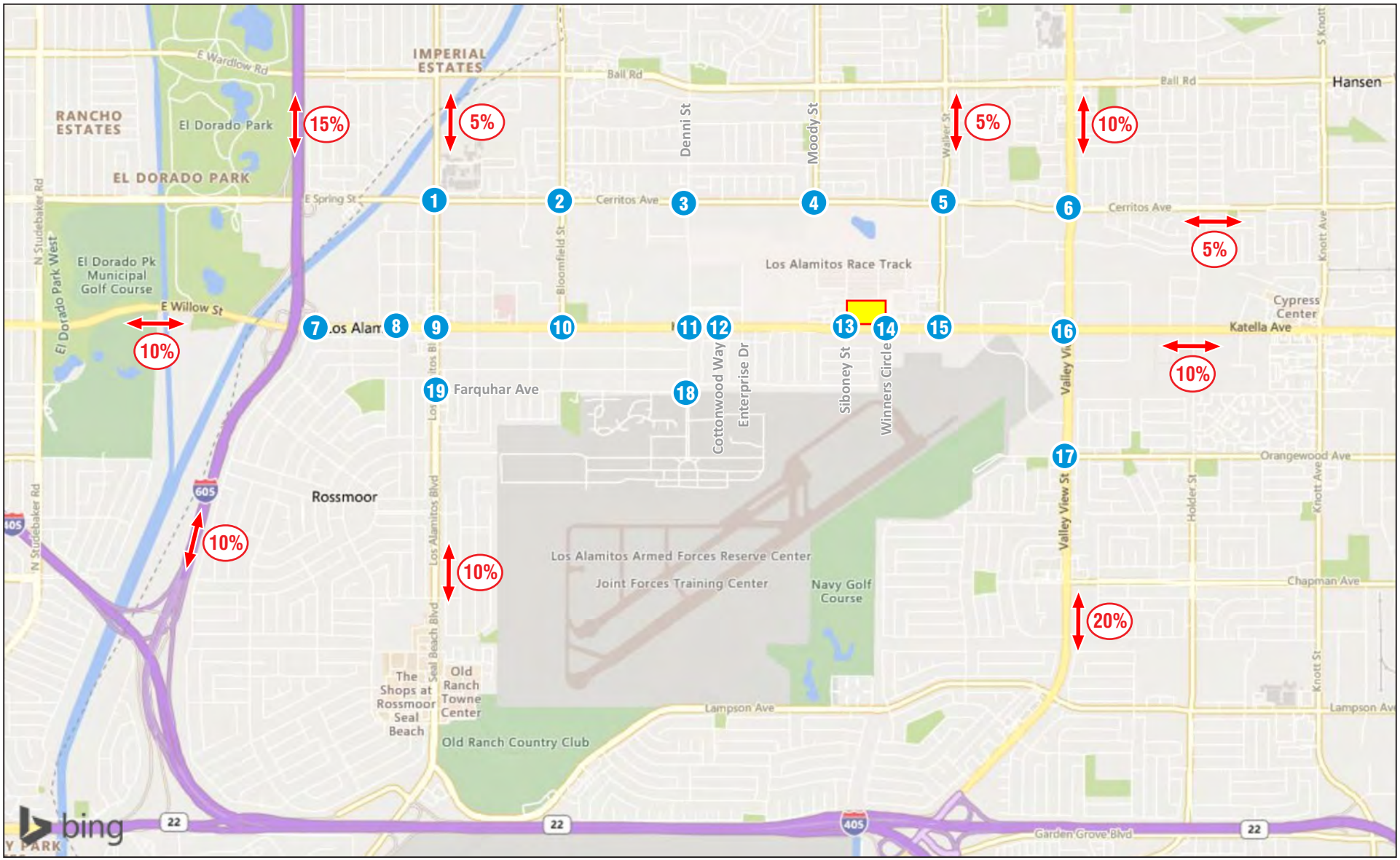
[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]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

FIGURE 2

LEGEND

- Project Site
- # - Study Area Intersection
- XX% - Project Trip Distribution Percentage

0 1500 3000

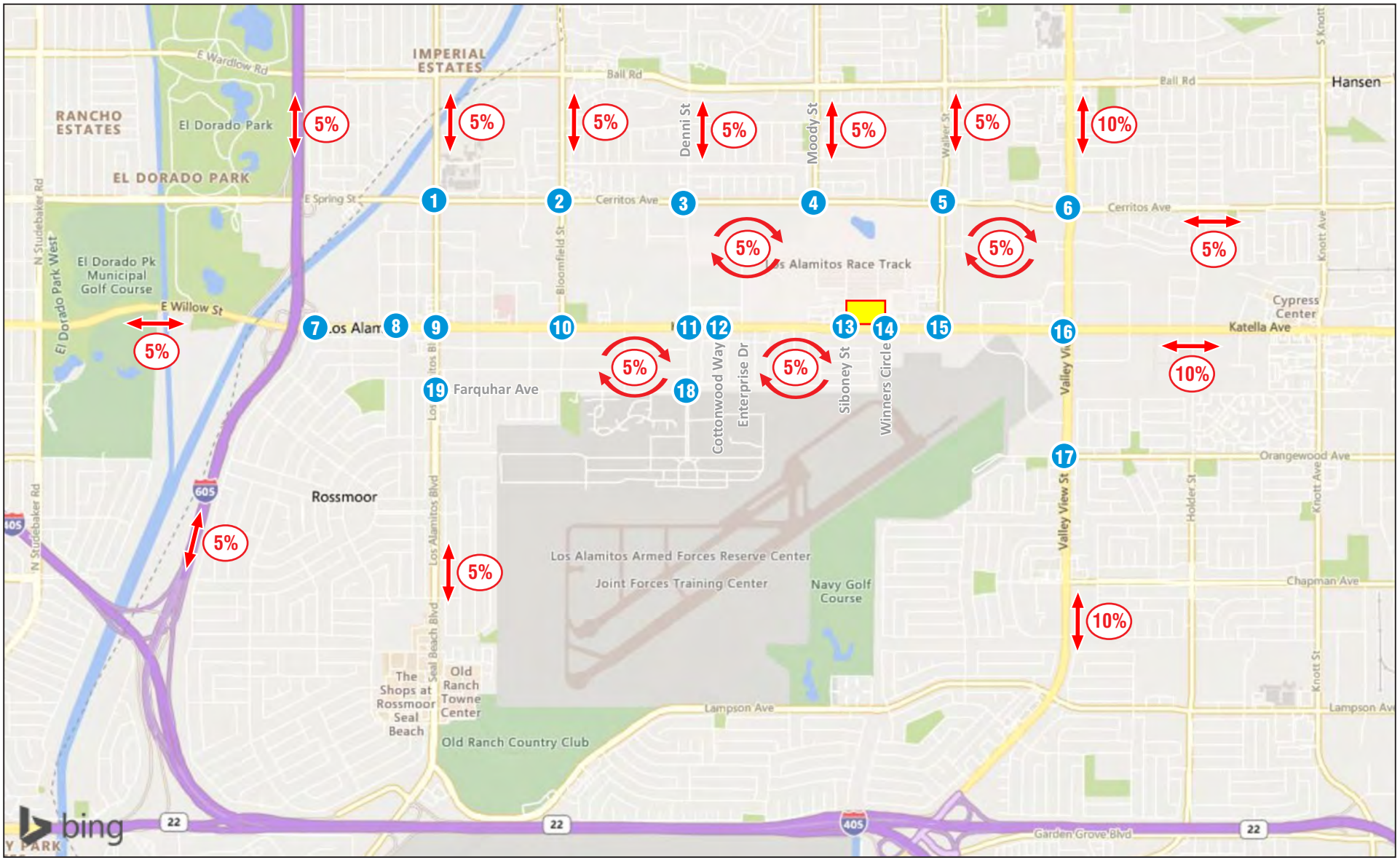
FEET

SOURCE: Bing Maps

Cypress City Center

Project Trip Distribution - Residential

I:\SHO1902\G\Trip Dist-Residential.cdr (7/1/2019)



LSA

LEGEND

- Project Site
- # - Study Area Intersection
- XX% - Project Trip Distribution Percentage

0 1500 3000
FEET

SOURCE: Bing Maps

FIGURE 3

Cypress City Center

Project Trip Distribution - Retail

I:\SHO1902\G\Trip Dist-Retail.cdr (7/1/2019)

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

Total

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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	292	985	618	30	156	1223	175	2	174	1432	290	0	440	1339	191	13	7360
APPROACH %'s :	15.17%	51.17%	32.10%	1.56%	10.03%	78.60%	11.25%	0.13%	9.18%	75.53%	15.30%	0.00%	22.19%	67.52%	9.63%	0.66%	
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	467	1565	770	29	168	1096	118	5	254	1437	339	2	560	1501	230	8	8549
APPROACH %'s :	16.50%	55.28%	27.20%	1.02%	12.11%	79.02%	8.51%	0.36%	12.50%	70.72%	16.68%	0.10%	24.36%	65.29%	10.00%	0.35%	
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

Intersection Turning Movement Count

Location: Bloomfield St & Cerritos Ave
City: Cypress
Control: Signalized

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				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	237	461	303	0	300	986	232	0	77	1532	247	0	296	1522	179	0	6372
APPROACH %'s :	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%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	121	312	192	0	168	569	90	0	31	826	115	0	172	724	100	0	3420
PEAK HR FACTOR :	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				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	214	926	274	0	120	570	186	0	307	2083	212	0	203	1916	320	0	7331
APPROACH %'s :	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%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	108	514	158	0	61	285	99	0	159	1104	104	0	98	1055	177	0	3922
PEAK HR FACTOR :	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				
	0	1	0	0	1	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	53	125	80	0	371	249	223	0	108	1586	144	2	193	1633	222	2	4991
APPROACH %'s :	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%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	23	79	49	0	239	153	128	0	62	845	86	1	111	793	137	1	2707
PEAK HR FACTOR :	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	0.907
	0.821				0.872				0.910				0.886				

NS/EW Streets:	Denni St				Denni St				Cerritos Ave				Cerritos Ave				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	103	356	167	0	179	149	142	0	238	2201	90	0	96	1999	341	1	6062
APPROACH %'s :	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%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	56	180	77	0	95	78	81	0	123	1192	33	0	49	1113	209	0	3286
PEAK HR FACTOR :	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	0.946
	0.943				0.962				0.921				0.914				

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				
	0.5	1	0.5	0	1.5	0.5	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	3	1	0	983	3	405	1	146	1968	3	0	0	1641	274	0	5433
APPROACH %'s :	55.56%	33.33%	11.11%	0.00%	70.62%	0.22%	29.09%	0.07%	6.90%	92.96%	0.14%	0.00%	0.00%	85.69%	14.31%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	2	1	0	583	3	206	1	71	1065	2	0	0	869	174	0	2978
PEAK HR FACTOR :	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				
	0.5	1	0.5	0	1.5	0.5	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	3	1	0	477	0	300	0	418	2122	5	0	0	2166	774	0	6273
APPROACH %'s :	63.64%	27.27%	9.09%	0.00%	61.39%	0.00%	38.61%	0.00%	16.42%	83.38%	0.20%	0.00%	0.00%	73.67%	26.33%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	3	0	0	0	250	0	151	0	224	1131	1	0	0	1228	416	0	3404
PEAK HR FACTOR :	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				
	2	2	1	0	1	2	0	0	1	3	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	206	434	101	0	281	1273	117	0	43	2000	855	0	196	1584	184	0	7274
APPROACH %'s :	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%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	104	241	53	0	166	750	70	0	20	1139	490	0	120	841	106	0	4100
PEAK HR FACTOR :	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				
	2	2	1	0	1	2	0	0	1	3	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	897	1411	356	0	215	872	92	0	159	1985	479	0	185	2021	299	0	8971
APPROACH %'s :	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%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	502	737	213	0	106	449	46	0	95	1068	237	0	93	1124	157	0	4827
PEAK HR FACTOR :	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

Intersection Turning Movement Count

Location: Valley View St & Cerritos Ave
City: Cypress
Control: Signalized

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				
	1	3	1	0	1	3	1	0	2	3	1	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	323	2308	103	2	182	2584	466	13	187	1140	813	0	303	1272	221	0	9917
APPROACH %'s :	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%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	156	1223	44	1	105	1342	270	6	97	639	469	0	170	732	147	0	5401
PEAK HR FACTOR :	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				
	1	3	1	0	1	3	1	0	2	3	1	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	659	3594	397	5	283	2155	389	23	571	1600	516	0	178	1208	246	0	11824
APPROACH %'s :	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%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	342	1893	224	3	136	1059	201	10	317	854	280	0	100	667	128	0	6214
PEAK HR FACTOR :	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

Total

NS/EW Streets:	I-605 NB Ramp				I-605 NB Ramp				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
7:00 AM	2	1	200	0	0	0	51	0	19	303	0	0	0	321	203	0	1100
7:15 AM	0	1	270	0	0	0	70	0	28	375	0	1	0	345	205	0	1295
7:30 AM	0	0	321	0	0	0	87	0	39	470	0	3	0	370	211	0	1501
7:45 AM	0	0	263	0	0	0	119	0	28	352	0	1	0	377	216	0	1356
8:00 AM	0	0	212	0	0	0	122	0	18	310	0	0	0	362	201	0	1225
8:15 AM	0	1	225	0	0	0	90	0	19	289	0	1	0	339	188	0	1152
8:30 AM	0	0	228	0	0	0	74	0	30	279	0	2	0	331	179	0	1123
8:45 AM	0	0	267	0	0	0	35	0	32	320	0	0	0	263	138	0	1055
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	3	1986	0	0	0	648	0	213	2698	0	8	0	2708	1541	0	9807
APPROACH %'s :	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				
	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	TOTAL
4:00 PM	0	0	196	0	0	0	26	0	45	422	0	0	0	360	173	0	1222
4:15 PM	0	0	187	0	0	0	23	0	71	460	0	3	0	382	190	0	1316
4:30 PM	0	0	226	0	0	0	34	0	73	479	0	0	0	347	157	0	1316
4:45 PM	0	0	180	0	0	0	42	0	29	465	0	2	0	410	178	0	1306
5:00 PM	0	0	164	0	0	0	41	0	63	424	0	1	0	439	243	0	1375
5:15 PM	1	0	187	0	0	0	32	0	51	536	0	1	0	387	227	0	1422
5:30 PM	0	0	210	0	0	0	44	0	37	410	0	0	0	439	198	0	1338
5:45 PM	0	0	217	0	0	0	35	0	30	434	0	1	0	366	210	0	1293
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	1567	0	0	0	277	0	399	3630	0	8	0	3130	1576	0	10588
APPROACH %'s :	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				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	964	229	208	0	38	223	75	0	32	3713	519	2	252	3120	23	21	9419
APPROACH %'s :	68.81%	16.35%	14.85%	0.00%	11.31%	66.37%	22.32%	0.00%	0.75%	87.04%	12.17%	0.05%	7.38%	91.33%	0.67%	0.61%	
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				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	602	134	292	1	31	117	100	0	49	4004	757	0	257	3966	27	58	10395
APPROACH %'s :	58.50%	13.02%	28.38%	0.10%	12.50%	47.18%	40.32%	0.00%	1.02%	83.24%	15.74%	0.00%	5.97%	92.06%	0.63%	1.35%	
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

Total

NS/EW Streets:	Los Alamitos Blvd				Los Alamitos Blvd				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2 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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	707	1603	797	0	308	1545	320	0	346	2974	520	0	617	2270	148	0	12155
APPROACH %'s :	22.76%	51.59%	25.65%	0.00%	14.17%	71.10%	14.73%	0.00%	9.01%	77.45%	13.54%	0.00%	20.33%	74.79%	4.88%	0.00%	
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 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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	867	1690	725	0	261	1823	410	0	483	2834	919	0	630	2938	218	0	13798
APPROACH %'s :	26.42%	51.49%	22.09%	0.00%	10.47%	73.10%	16.44%	0.00%	11.40%	66.90%	21.69%	0.00%	16.64%	77.60%	5.76%	0.00%	
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

Total

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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	167	529	28	0	310	300	660	0	521	3021	79	0	63	2350	376	10	8414
APPROACH %'s :	23.07%	73.07%	3.87%	0.00%	24.41%	23.62%	51.97%	0.00%	14.39%	83.43%	2.18%	0.00%	2.25%	83.96%	13.43%	0.36%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	102	201	50	0	351	326	387	0	590	3117	146	0	108	3172	433	16	8999
APPROACH %'s :	28.90%	56.94%	14.16%	0.00%	32.99%	30.64%	36.37%	0.00%	15.31%	80.90%	3.79%	0.00%	2.90%	85.06%	11.61%	0.43%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
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				
	1	1	1	0	1.5	0	0.5	0	2	3	1	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	152	71	229	0	195	26	232	0	181	3022	201	20	218	2777	171	12	7507
APPROACH %'s :	33.63%	15.71%	50.66%	0.00%	43.05%	5.74%	51.21%	0.00%	5.29%	88.26%	5.87%	0.58%	6.86%	87.38%	5.38%	0.38%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	82	39	132	0	114	13	140	0	100	1604	106	9	112	1453	95	6	4005
PEAK HR FACTOR :	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				
	1	1	1	0	1.5	0	0.5	0	2	3	1	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	189	120	348	0	230	28	205	0	203	3099	144	12	233	3210	201	11	8233
APPROACH %'s :	28.77%	18.26%	52.97%	0.00%	49.68%	6.05%	44.28%	0.00%	5.87%	89.62%	4.16%	0.35%	6.37%	87.82%	5.50%	0.30%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	94	55	161	0	126	10	107	0	95	1524	72	10	115	1674	99	9	4151
PEAK HR FACTOR :	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				
	0	0	0	0	1.5	0	0.5	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	13	0	8	0	7	3051	6	14	0	2785	12	0	5896
APPROACH %'s :					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				
	0	0	0	0	1.5	0	0.5	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	5	0	27	0	15	0	21	3601	3	32	0	3528	15	0	7247
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	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				
	1	0	1	0	1.5	0	1.5	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	71	6	87	0	58	1	36	0	101	3121	72	126	67	3113	45	7	6911
APPROACH %'s :	43.29%	3.66%	53.05%	0.00%	61.05%	1.05%	37.89%	0.00%	2.95%	91.26%	2.11%	3.68%	2.07%	96.32%	1.39%	0.22%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	42	2	61	0	36	0	12	0	55	1697	31	69	26	1675	16	1	3723
PEAK HR FACTOR :	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				
	1	0	1	0	1.5	0	1.5	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	141	9	107	0	139	6	124	0	92	3365	70	147	110	3425	76	6	7817
APPROACH %'s :	54.86%	3.50%	41.63%	0.00%	51.67%	2.23%	46.10%	0.00%	2.50%	91.59%	1.91%	4.00%	3.04%	94.69%	2.10%	0.17%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	82	4	58	0	75	3	64	0	50	1701	32	79	65	1825	38	3	4079
PEAK HR FACTOR :	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

Total

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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	16	1	12	0	10	2	6	0	43	2834	89	3	75	2846	12	26	5975
APPROACH %'s :	55.17%	3.45%	41.38%	0.00%	55.56%	11.11%	33.33%	0.00%	1.45%	95.45%	3.00%	0.10%	2.53%	96.18%	0.41%	0.88%	
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	91	4	70	0	61	1	103	0	236	3376	16	7	12	3315	16	75	7383
APPROACH %'s :	55.15%	2.42%	42.42%	0.00%	36.97%	0.61%	62.42%	0.00%	6.49%	92.87%	0.44%	0.19%	0.35%	96.99%	0.47%	2.19%	
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				
	0.5	1	0.5	0	1.5	0.5	2	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	1	5	0	1334	15	364	0	388	2734	24	23	9	2995	633	8	8540
APPROACH %'s :	53.85%	7.69%	38.46%	0.00%	77.88%	0.88%	21.25%	0.00%	12.24%	86.27%	0.76%	0.73%	0.25%	82.17%	17.37%	0.22%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	3	0	0	0	790	11	172	0	205	1526	14	10	8	1568	365	5	4677
PEAK HR FACTOR :	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				
	0.5	1	0.5	0	1.5	0.5	2	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	24	8	1	1116	2	419	0	532	3103	6	58	0	3229	1088	1	9628
APPROACH %'s :	55.41%	32.43%	10.81%	1.35%	72.61%	0.13%	27.26%	0.00%	14.38%	83.89%	0.16%	1.57%	0.00%	74.78%	25.20%	0.02%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	27	15	4	1	596	1	213	0	282	1600	5	30	0	1726	602	0	5102
PEAK HR FACTOR :	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

Intersection Turning Movement Count

Location: Valley View St & Katella Ave
City: Cypress
Control: Signalized

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				
	3	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1621	2762	498	2	352	2070	405	8	407	1699	1224	2	337	2026	252	9	13674
APPROACH %'s :	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%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	821	1498	272	1	179	1087	207	7	234	956	689	0	198	1174	140	4	7467
PEAK HR FACTOR :	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				
	3	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	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1277	2980	367	25	422	2542	446	5	476	2058	1865	14	558	1877	398	7	15317
APPROACH %'s :	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%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	654	1474	176	11	224	1351	230	4	241	1063	1005	5	322	998	217	3	7978
PEAK HR FACTOR :	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

Total

NS/EW Streets:	Valley View St				Valley View St				Orangewood Ave				Orangewood Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	2	3	1	0	1	2	0	0	1	0.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	33	3756	116	1	436	3118	88	3	251	66	36	0	167	37	1037	0	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				
	1	3	0	0	2	3	1	0	1	2	0	0	1	0.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	34	3736	191	7	1066	4139	250	5	212	67	41	0	161	73	867	0	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	0	83
7:15 AM	3	10	0	0	0	38	14	0	7	0	18	0	0	0	0	0	90
7:30 AM	2	20	0	0	0	36	30	0	12	0	11	0	0	0	0	0	111
7:45 AM	3	18	0	0	0	61	18	0	24	0	31	0	0	0	0	0	155
8:00 AM	1	16	0	0	0	74	15	0	17	0	23	0	0	0	0	0	146
8:15 AM	4	15	0	0	0	46	11	0	24	0	19	0	0	0	0	0	119
8:30 AM	3	13	0	0	0	48	6	0	13	0	19	0	0	0	0	0	102
8:45 AM	2	12	0	0	0	47	6	0	9	0	18	0	0	0	0	0	94
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	110	0	0	0	386	108	0	113	0	161	0	0	0	0	0	900
APPROACH %'s :	16.67%	83.33%	0.00%	0.00%	0.00%	78.14%	21.86%	0.00%	41.24%	0.00%	58.76%	0.00%					
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	0	155
4:15 PM	19	69	0	0	0	19	22	0	21	0	12	0	0	0	0	0	162
4:30 PM	25	71	0	0	0	21	25	0	18	0	10	0	0	0	0	0	170
4:45 PM	25	43	0	0	0	10	28	0	26	0	6	0	0	0	0	0	138
5:00 PM	14	53	0	0	0	13	25	0	25	0	9	0	0	0	0	0	139
5:15 PM	9	29	0	0	0	8	24	0	21	0	4	0	0	0	0	0	95
5:30 PM	14	46	0	0	0	12	38	0	24	0	4	0	0	0	0	0	138
5:45 PM	10	31	0	0	0	10	25	0	24	0	3	0	0	0	0	0	103
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	138	402	0	0	0	113	209	0	183	0	55	0	0	0	0	0	1100
APPROACH %'s :	25.56%	74.44%	0.00%	0.00%	0.00%	35.09%	64.91%	0.00%	76.89%	0.00%	23.11%	0.00%					
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

Total

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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3011	293	0	215	2151	0	0	0	0	0	0	509	0	185	0	6364
APPROACH %'s :	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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3017	356	0	257	2882	0	0	0	0	0	0	806	0	275	0	7593
APPROACH %'s :	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Los Alamitos/Cerritos	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C
# 2 Bloomfield/Cerritos	B	xxxxx	0.693	B	xxxxx	0.693	+ 0.000 V/C
# 3 Denni/Cerritos	A	xxxxx	0.594	A	xxxxx	0.594	+ 0.000 V/C
# 4 Moody/Cerritos	A	xxxxx	0.572	A	xxxxx	0.572	+ 0.000 V/C
# 5 Walker/Cerritos	B	xxxxx	0.681	B	xxxxx	0.681	+ 0.000 V/C
# 6 Valleyview/Cerritos	C	xxxxx	0.731	C	xxxxx	0.731	+ 0.000 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.493	A	xxxxx	0.493	+ 0.000 V/C
# 8 Walnut-Wallingsford/Katella	D	xxxxx	0.811	D	xxxxx	0.811	+ 0.000 V/C
# 9 Los Alamitos/Katella	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 10 Bloomfield/Katella	D	xxxxx	0.819	D	xxxxx	0.819	+ 0.000 V/C
# 11 Lexington/Katella	A	xxxxx	0.579	A	xxxxx	0.579	+ 0.000 V/C
# 12 Cottonwood/Katella	A	xxxxx	0.371	A	xxxxx	0.371	+ 0.000 V/C
# 13 Siboney/Katella	A	xxxxx	0.461	A	xxxxx	0.461	+ 0.000 V/C
# 14 Winners/Katella	A	xxxxx	0.396	A	xxxxx	0.396	+ 0.000 V/C
# 15 Walker/Katella	B	xxxxx	0.658	B	xxxxx	0.658	+ 0.000 V/C
# 16 Valleyview/Katella	C	xxxxx	0.723	C	xxxxx	0.723	+ 0.000 V/C
# 17 Valleyview/Orangewood	C	xxxxx	0.784	C	xxxxx	0.784	+ 0.000 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.614	B	xxxxx	0.614	+ 0.000 V/C

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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
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	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 0	1 0	1	1 0	2 0	1	1 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	1 1	0 0	1	1 0	1 1	0	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	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
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	0 1	0	0	0 1	1	0	2 0	0	0	2 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	1	0	1	0	3	1	0	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
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
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	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	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
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
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	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
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
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
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:	1.00	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Los Alamitos/Cerritos	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 2 Bloomfield/Cerritos	C	xxxxx	0.739	C	xxxxx	0.739	+ 0.000 V/C
# 3 Denni/Cerritos	C	xxxxx	0.751	C	xxxxx	0.751	+ 0.000 V/C
# 4 Moody/Cerritos	C	xxxxx	0.756	C	xxxxx	0.756	+ 0.000 V/C
# 5 Walker/Cerritos	C	xxxxx	0.730	C	xxxxx	0.730	+ 0.000 V/C
# 6 Valleyview/Cerritos	D	xxxxx	0.834	D	xxxxx	0.834	+ 0.000 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.590	A	xxxxx	0.590	+ 0.000 V/C
# 8 Walnut-Wallingsford/Katella	C	xxxxx	0.711	C	xxxxx	0.711	+ 0.000 V/C
# 9 Los Alamitos/Katella	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 10 Bloomfield/Katella	C	xxxxx	0.742	C	xxxxx	0.742	+ 0.000 V/C
# 11 Lexington/Katella	A	xxxxx	0.592	A	xxxxx	0.592	+ 0.000 V/C
# 12 Cottonwood/Katella	A	xxxxx	0.447	A	xxxxx	0.447	+ 0.000 V/C
# 13 Siboney/Katella	A	xxxxx	0.524	A	xxxxx	0.524	+ 0.000 V/C
# 14 Winners/Katella	A	xxxxx	0.521	A	xxxxx	0.521	+ 0.000 V/C
# 15 Walker/Katella	B	xxxxx	0.687	B	xxxxx	0.687	+ 0.000 V/C
# 16 Valleyview/Katella	C	xxxxx	0.749	C	xxxxx	0.749	+ 0.000 V/C
# 17 Valleyview/Orangewood	D	xxxxx	0.826	D	xxxxx	0.826	+ 0.000 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.618	B	xxxxx	0.618	+ 0.000 V/C

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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
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	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
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
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 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:	1.00	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	1 1	0	0 1	1 0	1	1 0	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
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:	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	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
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	0 1	0	0	0 1	1	0	2 0	0	0	2 1
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	1	0 1	1	0	3 1	0	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 0	1	0 1	1 0	2	1 0	1 0	2	1 0
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	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:	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
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	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
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	1 1	0 0	2	2 0	2 1	0	1 0	3 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
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:	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Los Alamitos/Cerritos	C	xxxxx	0.704	C	xxxxx	0.705	+ 0.001 V/C
# 2 Bloomfield/Cerritos	B	xxxxx	0.693	B	xxxxx	0.693	+ 0.000 V/C
# 3 Denni/Cerritos	A	xxxxx	0.594	A	xxxxx	0.594	+ 0.000 V/C
# 4 Moody/Cerritos	A	xxxxx	0.572	A	xxxxx	0.572	+ 0.000 V/C
# 5 Walker/Cerritos	B	xxxxx	0.681	B	xxxxx	0.684	+ 0.003 V/C
# 6 Valleyview/Cerritos	C	xxxxx	0.731	C	xxxxx	0.733	+ 0.001 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.493	A	xxxxx	0.498	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	D	xxxxx	0.811	D	xxxxx	0.815	+ 0.003 V/C
# 9 Los Alamitos/Katella	C	xxxxx	0.745	C	xxxxx	0.752	+ 0.007 V/C
# 10 Bloomfield/Katella	D	xxxxx	0.819	D	xxxxx	0.828	+ 0.009 V/C
# 11 Lexington/Katella	A	xxxxx	0.579	A	xxxxx	0.585	+ 0.007 V/C
# 12 Cottonwood/Katella	A	xxxxx	0.371	A	xxxxx	0.377	+ 0.006 V/C
# 13 Siboney/Katella	A	xxxxx	0.461	A	xxxxx	0.480	+ 0.019 V/C
# 14 Winners/Katella	A	xxxxx	0.396	A	xxxxx	0.405	+ 0.009 V/C
# 15 Walker/Katella	B	xxxxx	0.658	B	xxxxx	0.666	+ 0.008 V/C
# 16 Valleyview/Katella	C	xxxxx	0.723	C	xxxxx	0.730	+ 0.007 V/C
# 17 Valleyview/Orangewood	C	xxxxx	0.784	C	xxxxx	0.786	+ 0.003 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.614	B	xxxxx	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
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	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	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
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	0 1	1	0	2 0 1	1	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	1 1	0 0	1	1 0	1 1	0	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
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
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
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
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
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	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
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	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
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	1	0 1	0 1	1	0 3	1 0	1	0 3 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
FinalVolume:	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
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
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	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:	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
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
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
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
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	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	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
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
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:	1.00	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ 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

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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	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
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 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:	1.00	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	1 1	0 0	1	1 0	1 1	0	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
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
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:	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
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
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	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
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	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:	1.00	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	1	0 1	0 1	1	0 3	1 0	1	0 3 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
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
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
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 0	1	0 1	1 0	2	1 0	1 0	2	1 0
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
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
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
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	0	1	0	1! 0	1	0	3	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	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
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
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	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	1 1	0 0	2	2 0	2 1	0	1 0	3 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
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:	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Los Alamitos/Cerritos	C	xxxxx	0.714	C	xxxxx	0.725	+ 0.011 V/C
# 2 Bloomfield/Cerritos	C	xxxxx	0.703	C	xxxxx	0.707	+ 0.004 V/C
# 3 Denni/Cerritos	B	xxxxx	0.602	B	xxxxx	0.626	+ 0.024 V/C
# 4 Moody/Cerritos	A	xxxxx	0.580	A	xxxxx	0.594	+ 0.014 V/C
# 5 Walker/Cerritos	B	xxxxx	0.690	C	xxxxx	0.711	+ 0.021 V/C
# 6 Valleyview/Cerritos	C	xxxxx	0.742	C	xxxxx	0.755	+ 0.013 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.500	A	xxxxx	0.503	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	D	xxxxx	0.823	D	xxxxx	0.828	+ 0.005 V/C
# 9 Los Alamitos/Katella	C	xxxxx	0.755	C	xxxxx	0.764	+ 0.008 V/C
# 10 Bloomfield/Katella	D	xxxxx	0.830	D	xxxxx	0.838	+ 0.008 V/C
# 11 Lexington/Katella	A	xxxxx	0.587	B	xxxxx	0.613	+ 0.026 V/C
# 12 Cottonwood/Katella	A	xxxxx	0.375	A	xxxxx	0.392	+ 0.016 V/C
# 13 Siboney/Katella	A	xxxxx	0.468	A	xxxxx	0.520	+ 0.053 V/C
# 14 Winners/Katella	A	xxxxx	0.401	A	xxxxx	0.424	+ 0.023 V/C
# 15 Walker/Katella	B	xxxxx	0.667	B	xxxxx	0.695	+ 0.028 V/C
# 16 Valleyview/Katella	C	xxxxx	0.733	C	xxxxx	0.756	+ 0.022 V/C
# 17 Valleyview/Orangewood	C	xxxxx	0.795	D	xxxxx	0.805	+ 0.011 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.622	B	xxxxx	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
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	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
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:	1.01	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	0 1	1	0	2 0 1	1	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	1 1	0 0	1	1 0	1 1	0	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
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:	1.01	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
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:	1.01	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	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
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	0 1	0	0	0 1	1	0	2 0	0	0	2 1
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	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	1	0	1	0	3	1	0	1	0	3	0	1
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
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:	1.01	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
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	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
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:	1.01	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
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	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	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:	1.01	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
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:	1.01	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Los Alamitos/Cerritos	C	xxxxx	0.756	C	xxxxx	0.770	+ 0.014 V/C
# 2 Bloomfield/Cerritos	C	xxxxx	0.750	C	xxxxx	0.757	+ 0.007 V/C
# 3 Denni/Cerritos	C	xxxxx	0.762	D	xxxxx	0.812	+ 0.051 V/C
# 4 Moody/Cerritos	C	xxxxx	0.766	C	xxxxx	0.782	+ 0.016 V/C
# 5 Walker/Cerritos	C	xxxxx	0.740	C	xxxxx	0.755	+ 0.016 V/C
# 6 Valleyview/Cerritos	D	xxxxx	0.846	D	xxxxx	0.861	+ 0.015 V/C
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.598	B	xxxxx	0.602	+ 0.004 V/C
# 8 Walnut-Wallingsford/Katella	C	xxxxx	0.721	C	xxxxx	0.726	+ 0.005 V/C
# 9 Los Alamitos/Katella	C	xxxxx	0.755	C	xxxxx	0.766	+ 0.011 V/C
# 10 Bloomfield/Katella	C	xxxxx	0.752	C	xxxxx	0.762	+ 0.010 V/C
# 11 Lexington/Katella	A	xxxxx	0.600	B	xxxxx	0.623	+ 0.023 V/C
# 12 Cottonwood/Katella	A	xxxxx	0.453	A	xxxxx	0.470	+ 0.017 V/C
# 13 Siboney/Katella	A	xxxxx	0.531	A	xxxxx	0.556	+ 0.024 V/C
# 14 Winners/Katella	A	xxxxx	0.528	A	xxxxx	0.560	+ 0.032 V/C
# 15 Walker/Katella	B	xxxxx	0.697	C	xxxxx	0.703	+ 0.006 V/C
# 16 Valleyview/Katella	C	xxxxx	0.760	C	xxxxx	0.771	+ 0.011 V/C
# 17 Valleyview/Orangewood	D	xxxxx	0.838	D	xxxxx	0.848	+ 0.010 V/C
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.627	B	xxxxx	0.630	+ 0.003 V/C

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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	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	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
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:	1.01	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 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	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	1 1	0 0	1	1 0	1 1	0	1 0	1 1	0
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
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:	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	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	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
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	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	1	0 1	0 1	1	0 3	1 0	1	0 3 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 0	1	0 1	1 0	2	1 0	1 0	2	1 0
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
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:	1.01	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
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	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
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:	1.01	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
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	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	1	1 0	0 2	2	0 2	1 0	1	0 3	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
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
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	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	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	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	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	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:	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	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1 Los Alamitos/Cerritos	C	xxxxx	0.714	C	xxxxx	0.726	+ 0.011
# 2 Bloomfield/Cerritos	C	xxxxx	0.703	C	xxxxx	0.707	+ 0.004
# 3 Denni/Cerritos	B	xxxxx	0.602	B	xxxxx	0.626	+ 0.024
# 4 Moody/Cerritos	A	xxxxx	0.580	A	xxxxx	0.594	+ 0.014
# 5 Walker/Cerritos	B	xxxxx	0.690	C	xxxxx	0.714	+ 0.024
# 6 Valleyview/Cerritos	C	xxxxx	0.742	C	xxxxx	0.756	+ 0.014
# 7 I-605 NB Ramps/Katella	A	xxxxx	0.500	A	xxxxx	0.508	+ 0.008
# 8 Walnut-Wallingsford/Katella	D	xxxxx	0.823	D	xxxxx	0.831	+ 0.008
# 9 Los Alamitos/Katella	C	xxxxx	0.755	C	xxxxx	0.770	+ 0.015
# 10 Bloomfield/Katella	D	xxxxx	0.830	D	xxxxx	0.848	+ 0.017
# 11 Lexington/Katella	A	xxxxx	0.587	B	xxxxx	0.620	+ 0.034
# 12 Cottonwood/Katella	A	xxxxx	0.375	A	xxxxx	0.399	+ 0.023
# 13 Siboney/Katella	A	xxxxx	0.468	A	xxxxx	0.543	+ 0.076
# 14 Winners/Katella	A	xxxxx	0.401	A	xxxxx	0.450	+ 0.049
# 15 Walker/Katella	B	xxxxx	0.667	C	xxxxx	0.703	+ 0.036
# 16 Valleyview/Katella	C	xxxxx	0.733	C	xxxxx	0.762	+ 0.029
# 17 Valleyview/Orangewood	C	xxxxx	0.795	D	xxxxx	0.808	+ 0.013
# 19 Los Alamitos/Fraquhar	B	xxxxx	0.622	B	xxxxx	0.625	+ 0.003

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
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	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
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:	1.01	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	0 1	1	0	2 0 1	1	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	1 1	0 0	1	1 0	1 1	0	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):	0.714
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
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:	1.01	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
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:	1.01	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	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
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	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:	1.01	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	1	0	1	0	3	1	0	1	0	3	0	1
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
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	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
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:	1.01	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
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	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	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	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
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	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	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:	1.01	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
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:	1.01	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
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
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
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 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	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	14	0	0	24	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1752	168	124	1266	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	1752	168	124	1266	0	0	0	0	320	0	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1752	168	124	1266	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	1752	168	124	1266	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 LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ 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

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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
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	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	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	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	1 1	0 0	1	1 0	1 1	0	1 0	1 1	0
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
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:	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
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:	1.01	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	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
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	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	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	1	0 1	0 1	1	0 3	1 0	1	0 3 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	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	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	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	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	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	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	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	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	0.23	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	0	1	0 1	1	0	2	1 0	1	0	2	1 0
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
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:	1.01	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
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	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	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	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
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	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	1	1 0	0 2	2	0 2	1 0	1	0 3	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
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
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)

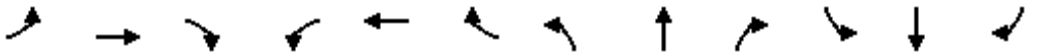
Intersection #19 Los Alamitos/Fraquhar

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	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:	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	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



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	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	112.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

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

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	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	108.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		

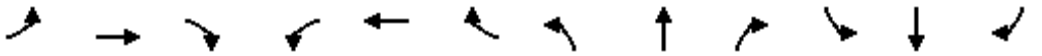
c Critical Lane Group

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



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			c0.72			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	

Intersection Summary			
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		

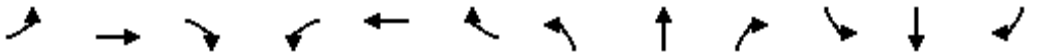
c Critical Lane Group

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



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	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	108.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		

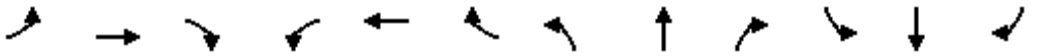
c Critical Lane Group

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



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	

Intersection Summary			
HCM 2000 Control Delay	3.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	117.8%	ICU Level of Service	H
Analysis Period (min)	15		

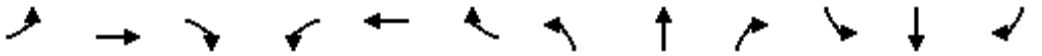
c Critical Lane Group

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



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	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	109.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		

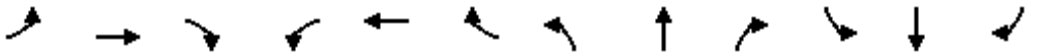
c Critical Lane Group

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



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	

Intersection Summary			
HCM 2000 Control Delay	3.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

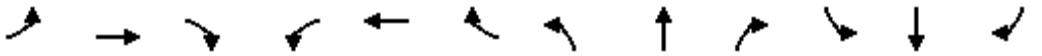
c Critical Lane Group

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



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	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	108.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

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

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APPENDIX K

AB 52 TRIBAL CONSULTATION RECORD

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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

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

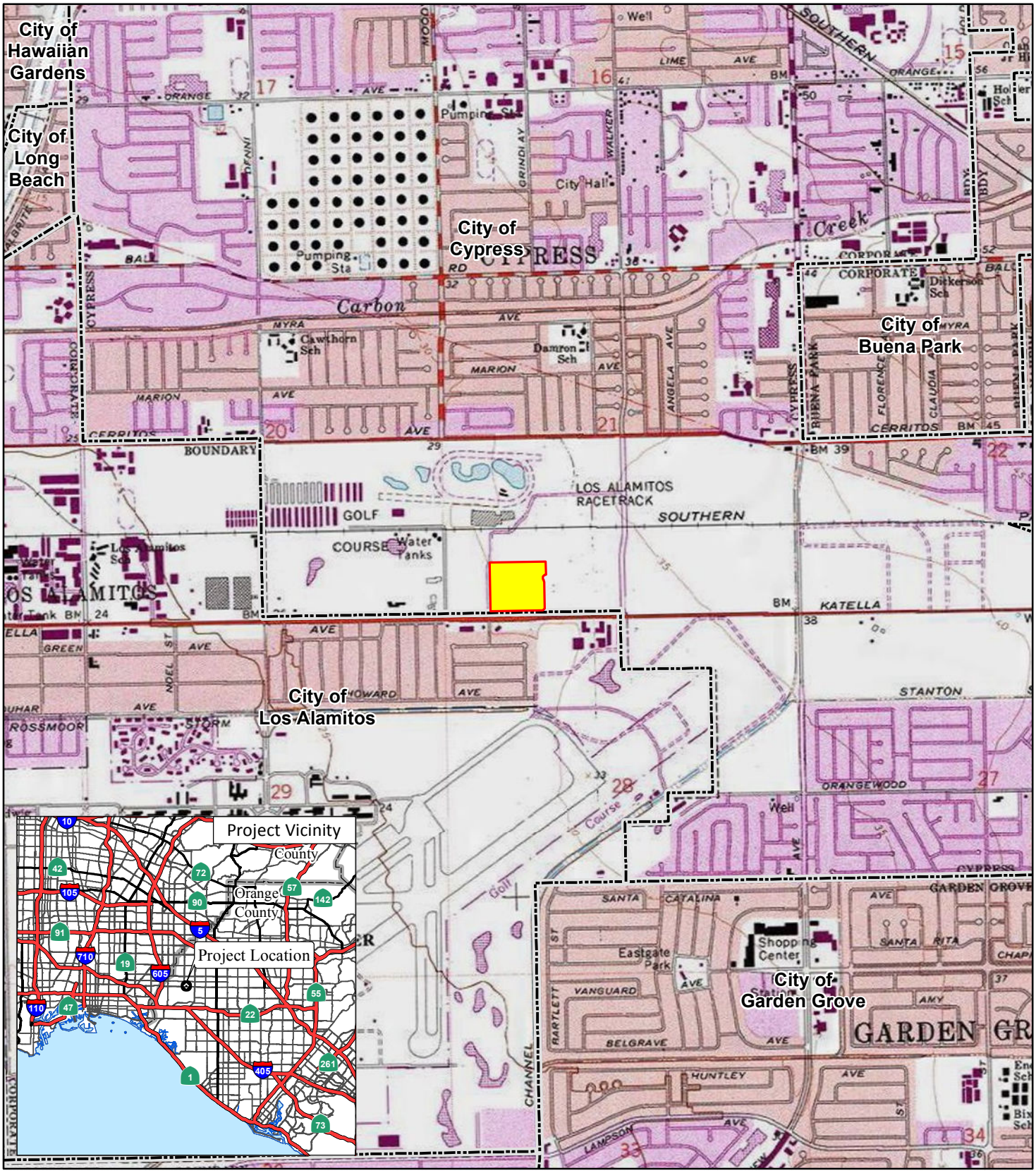


FIGURE 1

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

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

December 4, 2019

John Ramirez
City of Cypress

VIA Email to: 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.

Sincerely,

Steven Quinn

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

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

Ewiiaapaayp Tribe
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Tribe
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

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

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

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

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

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

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

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

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 Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.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

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

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

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
jmiller@LPtribe.net

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

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

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
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

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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.

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

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

Viejas Band of Kumeyaay Indians
John Christman, Chairperson
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337

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

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 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

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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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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 or by phone at (714) 229-6727.

Sincerely,

JPR

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 www.cypressca.org

December 10, 2019

Cheryl Madrigal, Tribal Historic Preservation Officer
Rincon Band of Luiseño 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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John P. Ramirez, AICP
City Planner
City of Cypress

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Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

JM

John P. Ramirez, AICP
City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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 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
Marieilen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 www.cypressca.org

December 10, 2019

Michael Garcia, Vice Chairperson
Ewiiaapaayp 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.

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Sincerely,

JM

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

JPR

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 www.cypressca.org

December 10, 2019

Robert Pinto, Chairperson
Ewiiaapaayp 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.

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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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

Attachment: Figure 1 – Project Location

Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

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Phone 714-229-6700 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.

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Sincerely,

JPR

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

JPR

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Mariellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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Sincerely,

John P. Ramirez, AICP
City Planner
City of Cypress

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Rob Johnson, Mayor
Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
City of Cypress

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Marlellen Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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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 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 **Stacy Berry**, Council Member
Paulo M. Morales, Council Member **Jon E. Peat**, Council Member

CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 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.

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City Planner
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CITY of CYPRESS

5275 Orange Avenue, Cypress, California 90630

Phone 714-229-6700 www.cypressca.org

December 13, 2019

Sam Dunlap
Gabrielino Tongva Tribe
Via email: TongvaTCR@gmail.com

Dear Mr. Dunlap:

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City Planner
City of Cypress

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Marlelien Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
Paulo M. Morales, 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

December 13, 2019

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Gabrielino Tongva Tribe
Via email: TongvaTCR@gmail.com

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Marlelien Yarc, Mayor Pro Tem **Stacy Berry**, Council Member
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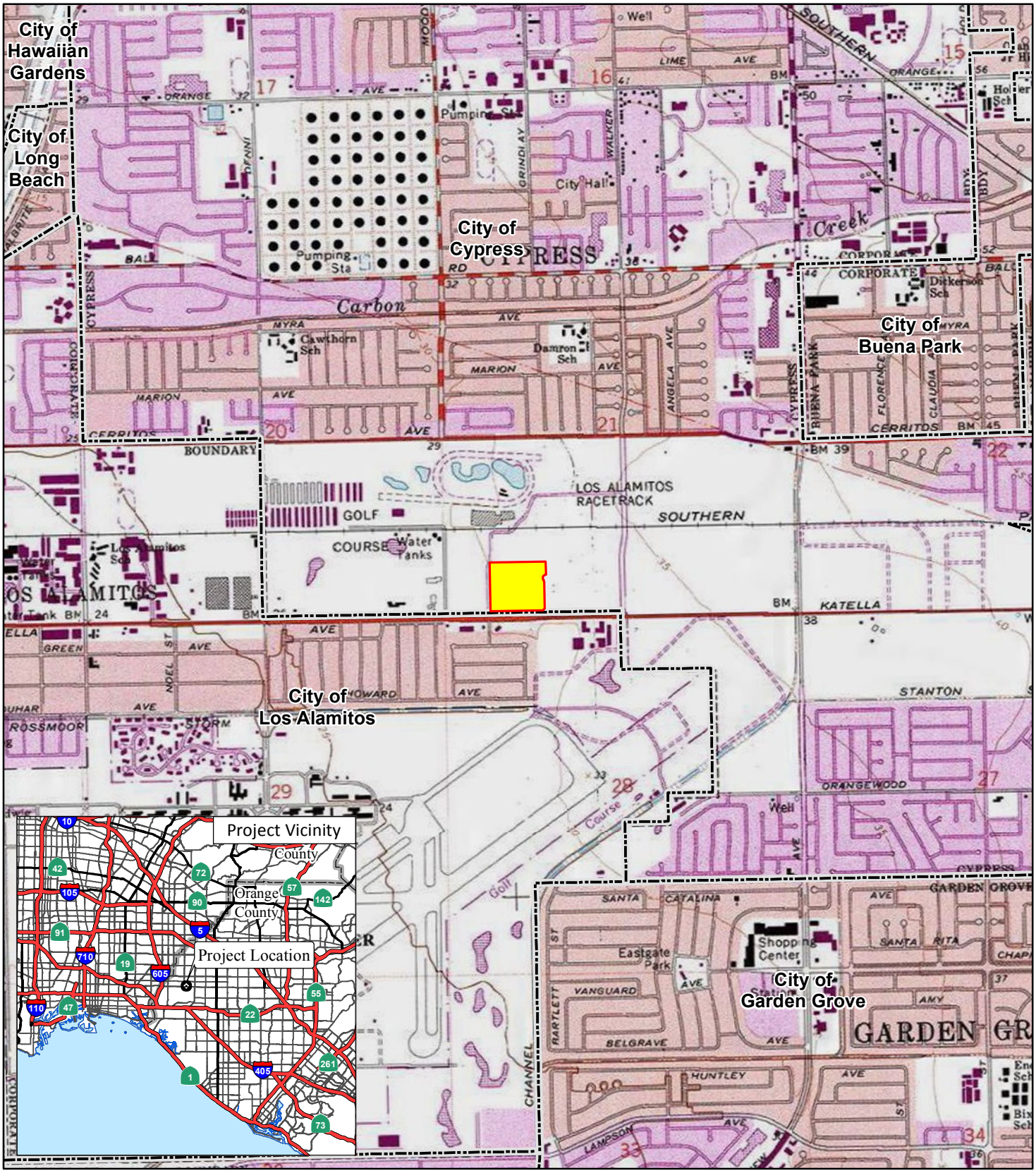


FIGURE 1

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 | Nadine Salas, Vice-Chairman | Dr. Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the council of Elders

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

Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <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' <gabrielenoindians@yahoo.com>
Cc: 'Matthew.Teutimez@gabrielenoindians.org' <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 Section15064.5, PRC 5097.98 (d)(1).
- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

If you are receiving these measures, The Gabrieleño 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 Gabrieleño 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 extant 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 Section15064.5 [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 locationl. 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.

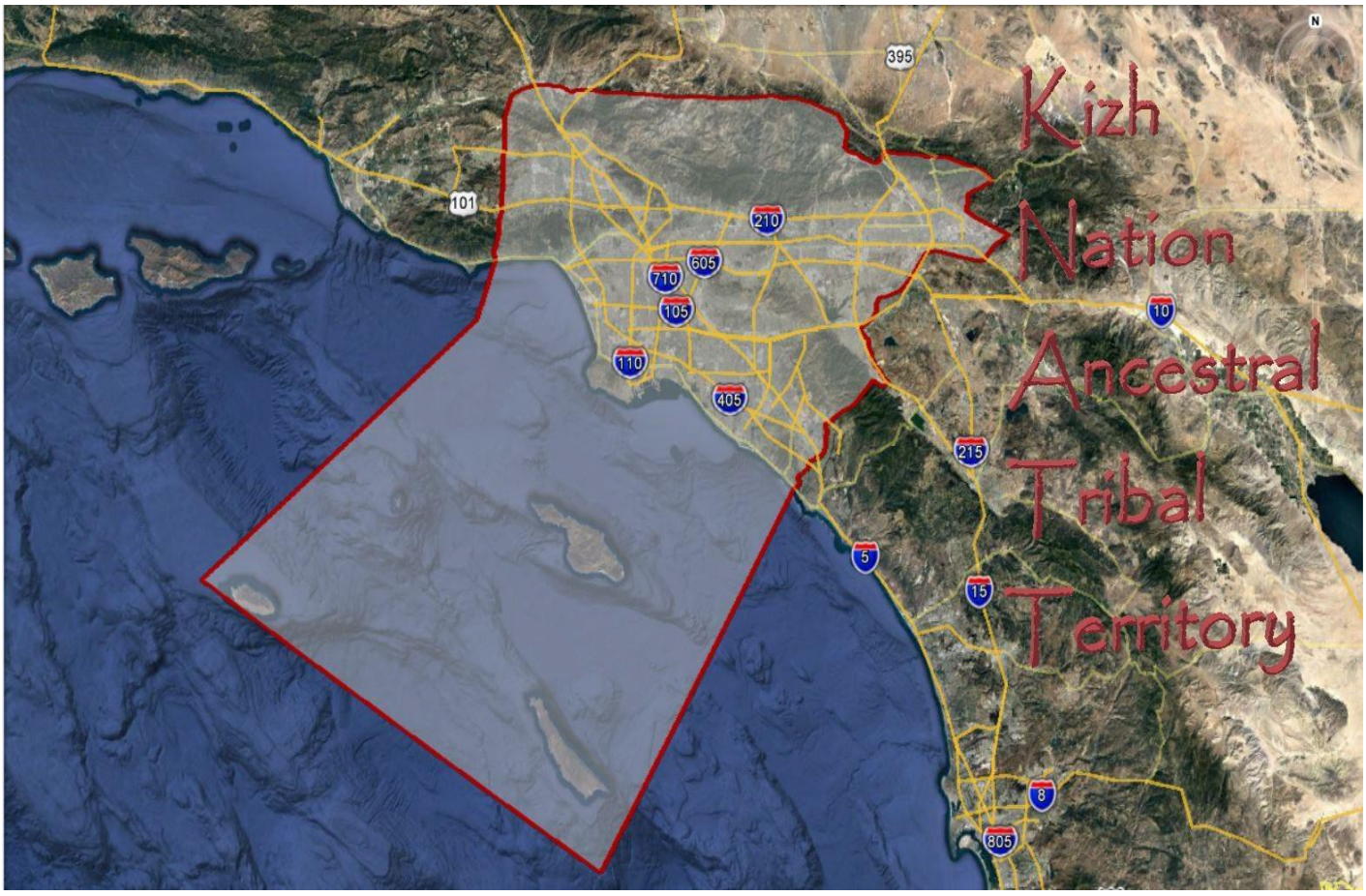
Acceptance of Tribal Government Recommended Mitigation Measures:

By _____ Date: _____
Lead Agency Representative Signature

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>
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

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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

Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <CityPlanner@cypressca.org> wrote:

> Hello Chairman Salas,
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> I wanted to be sure you received this information.
>
> Thank you!
>
> John
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> **John P. Ramirez, AICP**
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> *City Planner*
>
> Community Development Department
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> City of Cypress

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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> 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>
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

Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <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' <gabrielenoindians@yahoo.com>
Cc: 'Matthew.Teutimez@gabrielenoindians.org' <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

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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.

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Agua Caliente Band of Cahuilla Indians Patricia Garcia-Plotkin, Director *Cahuilla*	08/26/2019	No response was received.	09/09/2019, 1:42 PM: A follow-up email was sent to Ms. Garcia-Plotkin. 09/24/2019, 2:37 PM: 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 *Cahuilla*	08/26/2019	No response was received.	09/09/2019, 1:42 PM: 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 *Gabrieleno*	08/26/2019	No response was received.	09/09/2019, 1:45 PM: A follow-up email was sent to Chairperson Salas. At 4:07 PM, 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. 09/23/2019, 9:05 AM: A City Planner with the City of Cypress emailed the tribe, requesting to schedule a consultation call by 10/04/2019 if possible. 09/24/2019, 2:34 PM: 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

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
			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. 01/30/2020, 2:32 PM: The Tribe accepted the proposed mitigation measures and indicated that consultation has concluded.
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson *Gabrieleno*	08/26/2019	No response was received.	09/09/2019, 1:47 PM: A follow-up email was sent to Chairperson Morales. 09/27/2019, 2:53 PM: A second follow-up email was sent to Chairperson Morales.
Gabrielino/Tongva Nation Sandonne Goad, Chairperson *Gabrielino*	08/26/2019	No response was received.	09/09/2019, 1:49 PM: A follow-up email was sent to Chairperson Goad. 09/27/2019, 2:55 PM: A second follow-up email was sent to Chairperson Goad.
Gabrielino Tongva Indians of California Tribal Council Robert Dorame, Chairperson *Gabrielino*	08/26/2019	No response was received.	09/09/2019, 1:50 PM: A follow-up email was sent to Chairperson Dorame. 09/27/2019, 2:56 PM: A second follow-up email was sent to Chairperson Dorame.
Gabrielino-Tongva Tribe Charles Alvarez *Gabrielino*	08/26/2019	No response was received.	09/09/2019, 1:51: A follow-up email was sent to Mr. Alvarez. 09/20/2019: 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. 09/27/2019, 2:56 PM: A second follow-up email was sent to Mr. Alvarez.
Juaneño Band of Mission Indians Sonia Johnston, Tribal Chairperson	08/26/2019	No response was received.	09/09/2019, 1:52 PM: A follow-up email was sent to Chairperson Johnston.

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Juaneño			09/13/2019: 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. 09/27/2019, 2:57 PM: A second follow-up email was sent to Chairperson Johnston.
Juaneño Band of Mission Indians Acjachemen Nation – Belardes Joyce Perry, Tribal Manager *Juaneño*	08/26/2019	No response was received.	09/09/2019, 1:53: A follow-up email was sent to Ms. Perry. 09/27/2019, 2:58 PM: A second follow-up email was sent to Ms. Perry.
Juaneño Band of Mission Indians Acjachemen Nation Matias Belardes, Chairperson *Juaneño*	08/26/2019	No response was received.	09/09/2019, 1:53 PM: A follow-up email was sent to Chairperson Belardes via Ms. Perry. 09/24/2019: 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. 09/27/2019, 2:58 PM: A second follow-up email was sent to Chairperson Belardes via Ms. Perry.
Juaneño Band of Mission Indians Acjachemen Nation – Romero Teresa Romero, Chairperson *Juaneño*	08/26/2019	No response was received.	09/09/2019, 1:54 PM: A follow-up email was sent to Chairperson Romero. 09/24/2019: 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. 09/27/2019, 2:59 PM: A second follow-up email was sent to Chairperson Romero.
La Jolla Band of Luiseño Indians	08/26/2019	No response was received.	09/27/2019, 2:48 PM: A follow-up phone call was

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Fred Nelson, Chairperson *Luiseño*			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 *Cupeño Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:55 PM: A follow-up email was sent to Ms. Gaughen. 09/27/2019, 2:59 PM: A second follow-up email was sent to Ms. Gaughen. 09/30/2019, 8:48 AM: 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 Luiseño Indians Temet Aguilar, Chairperson *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:56 PM: A follow-up email was sent to Chairperson Aguilar. 09/27/2019, 3:00 PM: A second follow-up email was sent to Chairperson Aguilar.
Pechanga Band of Luiseño Indians Paul Macarro, Cultural Resources Coordinator *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1: 56 PM: A follow-up email was sent to Mr. Macarro. At 3:14 PM, 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 Luiseño Indians Mark Macarro, Chairperson *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:57 PM: A follow-up email was sent to Chairperson Macarro. *Please see response from Mr. Paul Macarro, above.*
Rincon Band of Luiseño Indians Jim McPherson, Tribal Historic Preservation Officer *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:58 PM: A follow-up email was sent to Mr. McPherson. 09/27/2019, 3:01 PM: 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

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
			See response from Chairperson Mazzetti, below.
Rincon Band of Luiseño Indians Bo Mazzetti, Chairperson *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:57 PM: A follow-up email was sent to Chairperson Mazzetti. 09/27/2019, 3:00 PM: A second follow-up email was sent to Chairperson Mazzetti. At 3:36 PM, 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 *Luiseño*	08/26/2019	No response was received.	09/09/2019, 1:58 PM: A follow-up email was sent to the Tribal Council. 09/10/2019, 10:11 AM: 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 *Cahuilla Luiseño*	08/26/2019	No response was received.	09/09/2019, 2:00 PM: A follow-up email was sent to Chairperson Cozart via Mr. Ontiveros. 09/27/2019, 3:01 PM: A second follow-up email was sent to Chairperson Cozart via Mr. Ontiveros.
Soboba Band of Luiseño Indians Joseph Ontiveros, Cultural Resource Department *Cahuilla Luiseño*	08/26/2019	No response was received.	09/09/2019, 2:00 PM: A follow-up email was sent to Mr. Ontiveros. 09/27/2019, 3:01 PM: 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

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 _X_ 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:

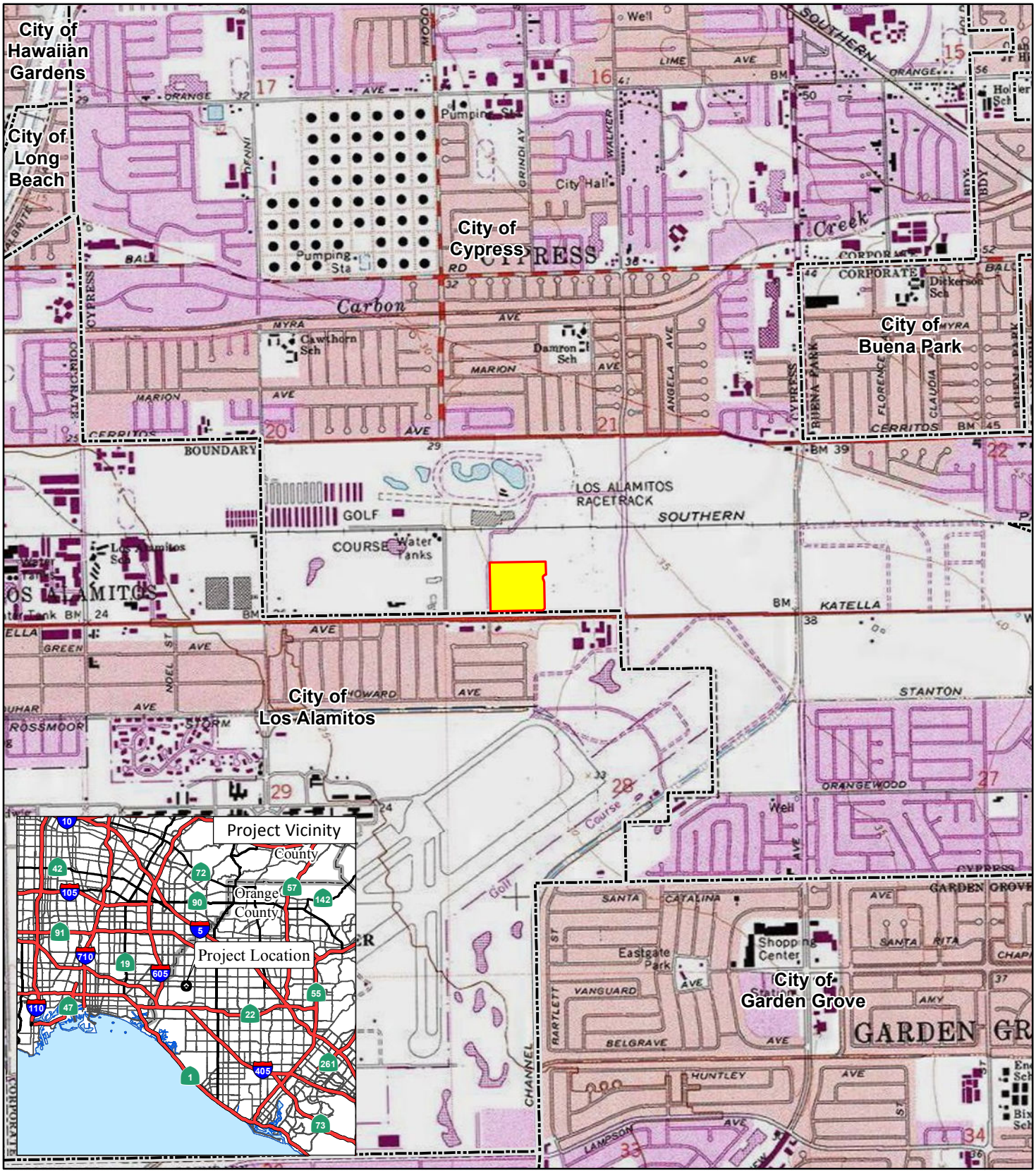
The Project Site is within the boundaries of the Cypress Business and Professional Center Specific Plan, and specifically occupies a portion of Planning Area 5, which is designated as "Professional Office." The Modified Project proposes residential and hotel land uses that are not consistent with allowable 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



LSA

FIGURE 2.1

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

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

August 1, 2019

Amy Stonich
City of Cypress

VIA Email to: cityplanner@cypressca.org

RE: Native American Consultation, Pursuant to Senate Bill 18, Government Code §65352.3 and §65352.4, Cypress Town Center Project, Orange County

Dear Ms. Stonich:

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.

Sincerely,

Steven Quinn

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

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

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

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

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

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

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

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 Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com

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

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

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

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, Luiseno
San Jacinto, CA, 92581
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, Luiseno
San Jacinto, CA, 92583
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) 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) 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.

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Kerrie Collison

From: Kerrie Collison
Sent: Monday, September 09, 2019 1:58 PM
To: 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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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.

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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) 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,
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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

Attachments area

On Mon, Sep 9, 2019 at 1:45 PM Kerrie Collison <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) 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

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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 | Nadine Salas, Vice-Chairman | Dr. Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the council of Elders

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>
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>
Subject: Re: Consultation Letter Follow-up: Cypress City Center Project

Hello John

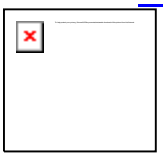
Thank you for your email. The next time we have available for a consultation will be on October 17th at 1pm. Please get back to us to see if this time will work for you.

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



Attachments area

On Mon, Sep 23, 2019 at 9:05 AM City Planner <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
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) 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.

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Kerrie Collison

From: Kerrie Collison
Sent: Friday, September 27, 2019 3:01 PM
To: 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.

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From: Kerrie Collison
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To: vwhipple@rincontribe.org
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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.

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Kerrie Collison, RPA | Senior Cultural Resources Manager

From: Kerrie Collison
Sent: Monday, September 09, 2019 1:57 PM
To: bomazzetti@aol.com
Subject: Consultation Letter Follow-up: Cypress City Center Project

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From: Kerrie Collison
Sent: Friday, September 27, 2019 3:00 PM
To: bennaecalac@aol.com
Subject: RE: Consultation Letter Follow-up: Cypress City Center Project
Attachments: Temet Aguilar.pdf

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From: Kerrie Collison
Sent: Monday, September 09, 2019 1:56 PM
To: bennaecalac@aol.com
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Kerrie Collison

From: Kerrie Collison
Sent: Friday, September 27, 2019 2:59 PM
To: 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.

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Sent: Monday, September 09, 2019 1:55 PM
To: sgaughen@palatribe.com
Subject: Consultation Letter Follow-up: Cypress City Center Project

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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.

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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) 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
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) 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) 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) 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)
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) 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)
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)
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) 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)
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) 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> 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
> **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) 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
ped.palatribe.com


Please consider the environment before printing this email.

THPO
Pala Band of Mission Indians

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

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.

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

Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <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' <gabrielenoindians@yahoo.com>
Cc: 'Matthew.Teutimez@gabrielenoindians.org' <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 Section15064.5, PRC 5097.98 (d)(1).
- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

If you are receiving these measures, The Gabrieleño 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 Gabrieleño 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 extant 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 Section15064.5 [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 locationl. 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.

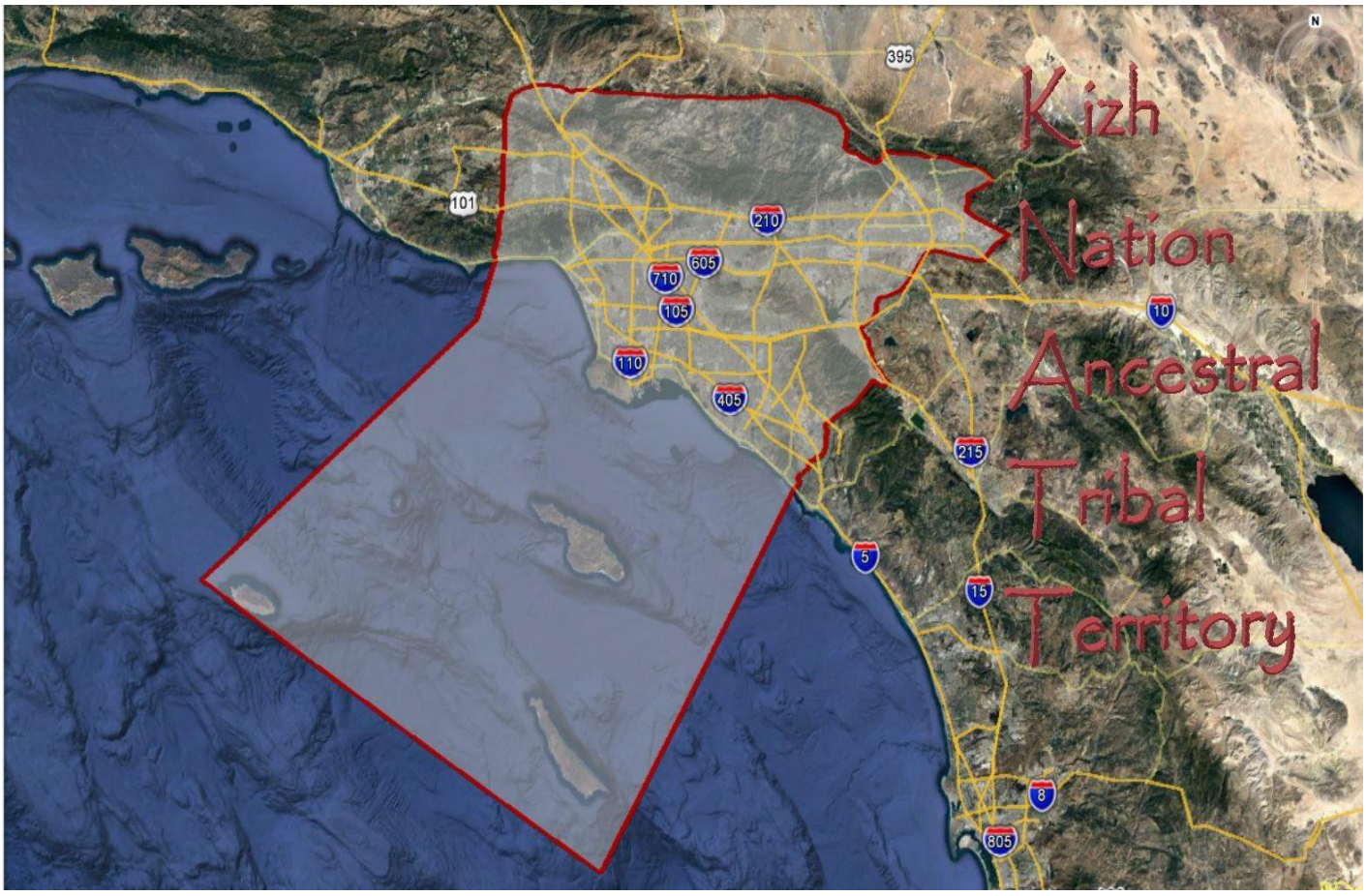
Acceptance of Tribal Government Recommended Mitigation Measures:

By _____ Date: _____
Lead Agency Representative Signature

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>
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

Attachments area

On Fri, Jan 17, 2020 at 12:29 PM City Planner <CityPlanner@cypressca.org> wrote:

> Hello Chairman Salas,
>
> I wanted to be sure you received this information.
>
> Thank you!
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> John
>
> **John P. Ramirez, AICP**
>
> *City Planner*
>
> Community Development Department
>
> City of Cypress

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To: 'gabrielenoindians@yahoo.com' <gabrielenoindians@yahoo.com>
Cc: 'Matthew.Teutimez@gabrielenoindians.org' <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> 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.

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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.

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Community Development Department

City of Cypress

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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

CYPRESS CITY CENTER PROJECT

Draft Environmental Impact Report

SCH No. 2019110458

City of Cypress

February 2020

Prepared by:

LSA







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H: Noise Analysis Results
I: Public Services and Utilities Providers Correspondence
J: Traffic Impact Analysis
K: Tribal Cultural Resources Consultation

ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	average daily trips
AELUP	*Airport Environs Land Use Plan*
afy	acre-feet per year
Agency	Cypress Redevelopment Agency
AGR	agricultural supply
AHS	American Housing Survey
amsl	above mean sea level
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
ASBS	Areas of Special Biological Significance
AST	Aboveground Storage Tanks
ASTM	American Society for Testing Materials
AUHSD	Anaheim Union High School District
AWSC	all-way stop control
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Santa Ana RWQCB's Water Quality Control Plan

bgs	below ground surface
BMPs	Best Management Practices
BTU	British Thermal Units
CAA	(Federal) Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Program
CalEEMod	(CAPCOA's) California Emissions Estimator Model
CALGreen Code	California Green Building Standards Code
California Register	California Register of Historical Resources
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act

CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
cfs/acre	cubic feet per second per acre
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
City	City of Cypress
CMP	Congestion Management Program
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COSR	(Cypress General Plan) Conservation/Open Space/Recreation (Element)
County	County of Orange
CPD	Cypress Police Department
CPT	cone penetrometer test
CPUC	California Public Utilities Commission
CSD	Cypress School District
CTR	California Toxics Rule
CUP	Conditional Use Permit

CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DAMP	Drainage Area Management Plan
dB	decibel(s)
dBA	A-weighted decibel(s)
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
du	dwelling unit(s)
DWR	California Department of Water Resources
EDR	Environmental Data Resources, Inc.
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EJ	Environmental Justice
EMFAC	EMission FACtor Model
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FAR	floor area ratio; also Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Federal Insurance Rate Map
ft	foot/feet
FTA	Federal Transit Administration
g	acceleration due to gravity

GHG	greenhouse gas
GIS	Geographic Information System
gpm	gallons per minute
GSAs	Groundwater Sustainability Agencies
GSWC	Golden State Water Company
GWh	gigawatt-hours
GWP	global warming potential
H_2S	hydrogen sulfide
HA	Hydrologic Area(s)
HCD	Department of Housing and Community Development
HFCs	hydrofluorocarbons
HCM	*Highway Capacity Manual*
HCP	Habitat Conservation Plan
HMBEP	Hazardous Materials Business Emergency Plan
HMD	Hazardous Materials Disclosure
HRI	(California) Historic Resources Inventory
HSA	Hydrologic Subarea(s)
HSC	California Health and Safety Code
HU	Hydrologic Unit(s)
HVAC	heating ventilation and air conditioning
I-405	Interstate 405
I-605	Interstate 605
ICU	Intersection Capacity Utilization
inch/sec	inch(es) per second

IND	industrial service supply
IPaC	(USFWS) Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IS/MND	Initial Study/Mitigated Negative Declaration
JFTB	Los Alamitos Joint Forces Training Base
kWh	Kilowatt hours
LACM	Natural History Museum of Los Angeles County
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night average noise level
LED	light-emitting diode
L_{eq}	equivalent continuous sound level
LID	Low Impact Development
LIP	Local Implementation Plan
L_{max}	maximum A-weighted sound level
L_{min}	minimum A-weighted sound level
LOS	level of service
LSI	Limited Soil Investigation
LST	Localized Significance Threshold
Ma	million years ago
MATES-III	SCAQMD's *Multiple Air Toxics Exposure Study*
MBTA	Migratory Bird Treaty Act
MBTE	methyl tertiary butyl ether
MFI	median family income

mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
mgd	million gallons per day
mL	milliliters
MLD	Most Likely Descendant
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
MS4	Municipal Separate Storm Sewer System
MT	metric tons
MT CO_2e	metric tons of carbon dioxide equivalent
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year
MT $CO_2e/SP/yr$	metric tons of carbon dioxide equivalent per service population per year
MTBE	methyl tertiary butyl ether
MUN	municipal and domestic supply
MW	megawatt
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Southern California
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NALMA	North American Land Mammal Age
National Register	National Register of Historic Places
NCCP/HCP	Natural Communities Conservation Plan/Habitat Conservation Plan
NFIP	National Flood Insurance Program
NHTSA	National Highway Traffic Safety Administration
NMAs	Neighborhood Mobility Areas
NMG	NMG Geotechnical, Inc.
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCPL	Orange County Public Libraries
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OCWR	Orange County Waste and Recycling
OFFROAD	Off-Road Emissions Inventory Program Model
OHP	(California) Office of Historic Preservation
OPR	(California) Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration

P.A.C.E.	Positive Actions through Character Education
Pb	lead
PBP	Planned Business Park
PCB	polychlorinated biphenyls
PCH	Pacific Coast Highway
pCi/L	picocuries per liter
PFCs	perfluorocarbons
PGA	peak ground acceleration
pH	percentage of hydrogen
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppb	parts per billion
ppm	parts per million
PRC	California Public Resources Code
PROC	industrial process supply
proposed project	Cypress City Center Project
PVC	polyvinyl chloride
RAP	rammed aggregate piers
RCP	Regional Comprehensive Plan
RECs	recognized environmental conditions
RHNA	Regional Housing Needs Assessment
ROGs	reactive organic gases
Roux Associates	Roux Associates, Inc.

RPS	Renewables Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SARWQCB	Santa Ana Regional Water Quality Control Board
SAFE Vehicles Rule	*The Safer Affordable Fuel-Efficient* (SAFE) *Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
SEMS	Standard Emergency Management System
sf	square foot/feet
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHL	(California) State Historical Landmarks
SHMA	Seismic Hazard Mapping Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan

SLF	Sacred Lands File
SO_2	sulfur dioxide
SO_X	sulfur oxides
SoCalGas	Southern California Gas Company
Specific Plan	Amended and Restated Cypress Business and Professional Center Specific Plan (2012)
SPHI	(California) State Points of Historical Interest
sq mi	square mile(s)
SR-1	State Route 1
SR-22	State Route 22
SR-55	State Route 55
SRA	Source Receptor Area
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TDS	total dissolved solids
TERPS	Terminal Instrument Procedures
TGD	(County of Orange) Technical Guidance Document
TIA	Traffic Impact Analysis
TMDL	Total Maximum Daily Load
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
USACE	United States Army Corps of Engineers

USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
v/c	volume-to-capacity
VC	vinyl chloride
VdB	vibration velocity decibels
VMT	vehicle miles traveled
VOCs	volatile organic compounds
vph	vehicles per hour
WQMP	Water Quality Management Plan
ZEVs	zero emission vehicles
ZNE	zero net energy

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that local government agencies, before taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a document designed to provide to the public and to local and State governmental agency decision-makers an analysis of potential environmental consequences of a project to support informed decision-making.

This EIR has been prepared by the City of Cypress (City) to evaluate environmental impacts associated with the proposed Cypress City Center Project (proposed project); to discuss alternatives; and to propose mitigation measures that will minimize, offset, or otherwise reduce or avoid the identified potentially significant environmental impacts.

This EIR has been prepared pursuant to the requirements of CEQA and the *State CEQA Guidelines*. The City is the Lead Agency, and as such, has reviewed all submitted drafts, technical studies, and reports for consistency with applicable City regulations and policies and has commissioned the preparation of this EIR to reflect its own independent judgment.

Data for this EIR were obtained from on-site field observations; discussion with affected agencies; review of adopted plans and policies; review of available studies, reports, and data; and specialized environmental assessments prepared for the project (e.g., air quality, noise, and traffic).

The Executive Summary is intended to highlight the major areas of importance in the environmental analysis for the proposed project as required by *State CEQA Guidelines* Section 15123. The Executive Summary includes a brief description of the proposed project, areas of controversy known to the City, including issues raised by agencies and the public, a summary of the significant unavoidable impacts of the proposed project, and a summary of alternatives evaluated in the EIR. This Executive Summary also provides a table summarizing (1) the potential environmental impacts that would occur as a result of project implementation and operation; (2) the level of significance prior to implementation of mitigation measures; (3) regulatory compliance measures and mitigation measures that avoid or reduce the significant impacts of the proposed project, and (4) the level of significance after mitigation measures are implemented.

1.2 SUMMARY OF PROJECT DESCRIPTION

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 the City. In its existing setting, the project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines. 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 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 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 market-rate 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 property within an existing storm drain easement are also included. The proposed project may also reconstruct the portion of Siboney Street along the western side of the project site to public standards, providing a crowned road section and sufficient slope to drain to Katella Avenue without ponding.

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 an amendment to the Cypress Business and Professional Center Specific Plan 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.

1.3 AREAS OF CONTROVERSY

Pursuant to *State CEQA Guidelines* Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City or were raised during the scoping process. The City held a public scoping meeting at the Cypress Community Center on Wednesday, December 11, 2019, to present the proposed project and to solicit input from interested parties regarding environmental issues that should be addressed in this EIR. The issues and concerns raised in response to the Notice of Preparation (NOP) or at the scoping meeting included:

- **Traffic:** Concerns about additional traffic in the Cities of Cypress and Los Alamitos, specifically on Katella Avenue, north of Katella Avenue in the vicinity of existing schools, intersections along Katella Avenue, Walker Street, and Lexington Drive, and specific intersections (Katella Avenue/ Los Alamitos Boulevard, Katella Avenue/I-605, and Valley View Street/I-405). Concerns about traffic on Katella Avenue during peak hours and about additional traffic generated by students. Request to evaluate the potential traffic impacts on Katella Avenue due to its inclusion as part of the Congestion Management Program Highway System.

- **Population and Housing:** Concerns about the lack of affordable housing in the City and about overpopulation in the City. Concerns about the population generation from the proposed apartment, hotel, retail, and commercial uses. Suggestion that higher household sizes should be considered in the analysis because higher rents in Orange County are leading to the overcrowding of residential units.

- **Noise:** Suggestion about adding landscaping along all sides of the property to reduce noise on the project site from surrounding sources and general concern about noise impacts.

- **Aesthetics:** Concerns about the height of the four-story apartment structure. Concern that the residential structure and parking garage would not be aesthetically representative of the City. Concern about off-site blighted retail buildings and off-site City maintenance of buildings.

- **Land Use:** Opposition to zoning changes to allow residential uses on the project site. Concerns related to the density of the residential structure and zoning changes to allow residential uses and higher density development. Suggestion that the residential structure be moved to the Winners Circle side of the project site. Concerns that parking will be underprovided.

- **Air Quality:** Concerns about air quality impacts from the proposed project and from increased traffic on Katella Avenue. Suggestions to adhere to guidelines from the SCAQMD and its *CEQA Air Quality Handbook* and recommendations on the identification of mitigation measures, alternatives, permits, and appropriate data sources.

- **Alternatives:** Suggestions to evaluate a reduced density alternative, and alternatives with the replacement of the apartment structure with a family-friendly entertainment center, a high-end grocery store, or senior apartments. Suggests an alternative with a decrease height of the residential structure to two stories and the elimination of the parking garage.

- **Hydrology:** Concern was raised about existing ponding along Siboney Street and on the project site. Requested that drainage facilities convey stormwater so as not to result in ponding on the Los Alamitos Racetrack property to the north.

- **Public Services:** Concern that schools in the City cannot accommodate students generated by the proposed project. Concern about increased demand for fire, police, library, emergency services, school, and park facilities/services. Concern about impacts on emergency services from traffic impacts on Katella Avenue.

- **Recreation:** Suggestions that parkland/public parks be provided on the project site. Concern about the amount of green space in the City and about impacts on existing parks.

- **Utilities and Service Systems:** Concern about increases in energy demand. Concern about added load to the power grid and water supply.

This is not an exhaustive list of areas of controversy, but rather key issues that were raised during the scoping process. This EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures and/or alternatives designed to reduce or eliminate potentially significant impacts. Appendix A to this EIR includes the NOP and copies of written comments received in response to the NOP, as well as written comment cards received in response to the public scoping meeting. Appendix A also includes a comment summary.

1.4 SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the *State CEQA Guidelines* requires that an EIR describe significant environmental impacts that cannot be avoided, including those effects that can be mitigated but not reduced to a less than significant level. The following is a summary of the impacts that are considered significant adverse and unavoidable after all mitigation is applied. These impacts are also described in detail in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

1.4.1 Greenhouse Gas Emissions

The proposed project would be designed in compliance with existing regulations aimed at reducing GHG emissions. Specifically, the project would meet the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24) and the California Green Building Standards Code (CALGreen). Although compliance with CCR Title 24 and CALGreen would help to reduce the proposed project's GHG emissions, the overall emissions attributable to construction and operation of the proposed project of 7,208 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr) are expected to exceed the South Coast Air Quality Management District's (SCAQMD) thresholds of 3,000 MT CO_2e/yr. The proposed project's greenhouse gas emissions per service population of 7.9 MT CO_2e per service population per year (CO_2e/SP/yr) would also exceed the SCAQMD's threshold of 4.3 MT CO2e/SP/yr for 2022. Therefore, the proposed project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to greenhouse gas emissions and conflict with an applicable greenhouse gas reduction plan, policy, or regulations. The proposed project includes mitigation measures that require the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater to be designed and built to be 10 percent more energy-efficient than 2019 Title 24 requirements or the current Title 24 requirements, whichever are more stringent, and the implementation of a Transportation Demand Management (TDM) Program for on-site residents and workers to reduce vehicle miles traveled. However, because the type and extent of measures that would be feasible to be implemented would be dependent on the individual tenants that occupy the project, the total amount of reductions toward the greenhouse gas reduction analysis cannot be quantified at this time. Furthermore, it may not be feasible for all projects to achieve the reduction targets. For example, the ability of a business to affect employee and patrons vehicle miles traveled would depend in part on the number of employees and patrons, where they live, and the availability of regional programs such as transit buses. Therefore, impacts related to generation of greenhouse gas emissions would remain significant and unavoidable.

1.5 ALTERNATIVES

1.5.1 Alternatives Evaluated in this EIR

Public Resources Code (PRC) Section 21100 and *State CEQA Guidelines* Section 15126 require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. The following three alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the proposed project but that may avoid

or substantially lessen any of the significant impacts of the proposed project. Therefore, the alternatives considered in this EIR include the following:

- **Alternative 1 – No Project Alternative:** CEQA requires analysis of a "No Project" Alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. According to *State CEQA Guidelines* Section 15126.6(e)(3)(C), the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. The No Project Alternative assumes that the project site would remain in the same condition as it was at the time the NOP was published and no new development of any kind would occur on the project site. The project site would remain a paved parking lot that would continue to be used for vehicle parking during events at the nearby Los Alamitos Race Course. Other short-term uses of the project site would also continue, including use as a Christmas tree lot, a truck staging area, and auxiliary truck and trailer storage. The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site.

- **Alternative 2 – Reduced Project Alternative:** The Reduced Project Alternative includes a mixed use development on the project site with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative includes construction of six retail buildings accommodating 41,600 sf of retail and restaurant uses and a 43,175 sf theater with approximately 840 seats. In addition, the Reduced Project Alternative includes development of 80 residential units at a density of 6.02 dwelling units per acre (du/ac) on the 13.29-acre project site. The residential units would include a combination of two-story condominium buildings arranged around motor courts and three-story row townhomes. Because of the reduced residential uses, the above-grade parking structure would not be required to serve the residents on the project site. The Reduced Project Alternative includes the same size hotel (120 rooms with approximately 96,800 sf) as the proposed project.

- **Alternative 3 – Commercial/Retail Alternative:** The Commercial/Retail Alternative includes development of 122,556 sf of major retail space, 21,000 sf of other retail/quick-serve restaurant space, and 9,353 sf of sit-down restaurant space on the project site. The Commercial/Retail Alternative includes construction of one building with four major retail tenants, one freestanding restaurant pad, and three retail/restaurant buildings. The Commercial/Retail Alternative also includes construction of a surface parking lot with 717 parking stalls. The project site was entitled until recently for development of the Commercial/Retail Alternative, which was environmentally cleared in the 2008 IS/MND that was prepared for the project site. However, these entitlements have since expired.

1.5.2 Identification of the Environmentally Superior Alternative

CEQA requires the identification of an Environmentally Superior Alternative among the project and the alternatives evaluated in an EIR. *State CEQA Guidelines* Section 15126.6(e)(2) provides that, if

the No Project/No Build Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives and the proposed project. The Reduced Project Alternative would have the least impact on the environment because the project site would be developed at a reduced density, thereby reducing the most of the proposed project's environmental impacts compared to the other alternatives (other than the No Build Alternative). Although the Reduced Project Alternative would result in less total greenhouse gas emissions than the proposed project, it would generate a greater amount of greenhouse gas emissions per capita than the proposed project. Therefore, its impacts would also be significant and unavoidable. The Reduced Project Alternative would potentially meet all of the project alternatives, but to a lesser extent than the proposed project. Accordingly, it is determined that the Reduced Project Alternative is the Environmentally Superior Alternative because it would meet all of the project objectives and would result in reduced environmental impacts as compared to the proposed project.

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A identifies the potential project environmental impacts, proposed mitigation measures, and level of significance after mitigation is incorporated into the project. Environmental topics addressed in this EIR include: Aesthetics, Air Quality, Biological Resources, Cultural Resources, 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 and Traffic, Tribal Cultural Resources, and Utilities.

1.6.1 Secondary Effects of Mitigation Measures

In accordance with *State CEQA Guidelines* Section 15126.4(a)(1)(D), if any mitigation measure would cause one or more significant effects in addition to those that would be caused by the proposed project, the effects of the mitigation measure shall be discussed. The mitigation measures proposed (as listed on Table 1.A) require the Applicant/Developer to provide the City with lighting, grading, excavation or other construction plans, or provide evidence that the project would adhere to existing programs, regulations, or recommendations in technical reports. The regulations and policies listed in the mitigation measures have been evaluated during their respective adoptions or approval processes. No secondary effects related to the proposed mitigation measures are expected to occur.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.1: AESTHETICS		
Threshold 4.1.1: Would the project have a substantial adverse effect on a scenic vista? **No Impact**. The City is almost entirely developed and neither the project site nor other properties in the project vicinity provide substantial views of any water bodies, mountains, hilltops, or any other significant visual resources. As such, the City has not designated any scenic corridors or scenic vistas within the City. Therefore, the proposed project would not have any impacts on a scenic vista. No mitigation is required.	No mitigation is required.	No Impact.
Threshold 4.1.2: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? **No Impact**. The project site is not located within the vicinity of a state scenic highway. Therefore, the proposed project would not damage any scenic resources within a State Scenic Highway. Additionally, the project site consists of a paved parking lot and does not contain any historic buildings. Therefore, there would be no impact, and no mitigation is required.	No mitigation is required.	No Impact.
Threshold 4.1.3: In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? **Less Than Significant Impact.** The proposed project is located in an urbanized area and would conform to architectural and landscape guidelines of the Specific Plan and all applicable development standards in the Cypress Zoning Ordinance. The proposed Specific Plan Amendment includes minor amendments to the design guidelines included in the Specific Plan to allow super graphics (large graphics) and projecting signage for the proposed movie theater structure. With approval of the Specific Plan Amendment, the proposed project would be consistent with the Specific Plan design guidelines for the project site. Therefore, impacts would be less than significant, and no mitigation would be required.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.1.4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? **Less Than Significant Impact.** **Construction.** Construction activities would occur only during daylight hours. Any construction-related illumination during evening and nighttime hours would be used for safety and security purposes only and would occur only for the duration required for the temporary construction process. Light resulting from construction activities would not substantially impact sensitive uses, substantially alter the character of surrounding uses, or interfere with the performance of off-site activities. In addition, construction activities are not anticipated to result in flat, shiny surfaces that would reflect sunlight or cause other natural glare. **Operation.** New light sources created by the proposed project would include interior and exterior building lighting, security lighting, signage, and parking lot lighting. The proposed lighting sources would be similar to other lighting sources in the project vicinity and would not generate artificial light levels that are out of character with the surrounding area, which is densely developed and characterized by a high degree of human activity and ambient light during the day and night. For these reasons, the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the surrounding urban area.	No mitigation is required.	Less Than Significant Impact
Cumulative Aesthetic Impacts. **Less Than Significant Impact.** The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to aesthetics. With compliance with these regulations, cumulative impacts related to aesthetics would be less than significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to aesthetics.	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.2: Air Quality		
Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan? **Less Than Significant Impact.** The proposed project would not conflict with or obstruct implementation of the 2016 AQMP because (1) the project's construction and operational emissions would not exceed the SCAQMD regional significance thresholds, and (2) the proposed project is consistent with the current General Plan land use designation on the project site and would not exceed the growth assumptions in the AQMP, is consistent with land use planning strategies set forth by SCAQMD, and includes implementation of all feasible air quality mitigation measures. In order to further reduce construction impacts, the project would comply with emission reduction measures required by the SCAQMD, including SCAQMD Rules 402, 403, 445, and 1113. Therefore, impacts related to the conflict with or obstruction of implementation of the applicable air quality plan would be less than significant, and no mitigation is required.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to further reduce emissions. **Regulatory Compliance Measure AQ-1:** **SCAQMD Rule 403.** During clearing, grading, earth moving, or excavation operations, excessive fugitive dust emissions shall be controlled by regular watering or other dust preventative measures by using the following procedures, in compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 during construction. All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on-site or off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized so as to prevent excessive amounts of dust. These control techniques shall be indicated in project specifications. Compliance with this measure shall be subject to periodic site inspections by the City. Visible dust beyond the property line emanating from the project shall be prevented to the maximum extent feasible. **Regulatory Compliance Measure AQ-2:** All trucks that are to haul excavated or graded material shall comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2) and (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads. **Regulatory Compliance Measure AQ-3:** Prior to approval of the project plans and specifications, the Planning Division shall confirm that the construction bid packages specify: Contractors shall use high-pressure-low-volume paint applicators with a minimum transfer efficiency of at least 50 percent; Coatings and solvents that will be utilized have a volatile organic compound content lower than required under South Coast Air Quality Management District Rule 1113; and To the extent feasible, construction/building materials shall be composed of pre-painted materials. **Regulatory Compliance Measure AQ-4:** The project shall comply with South Coast Air Quality Management District Rule 402. **Regulatory Compliance Measure AQ-5:** The project will meet the Statewide 2019 Building Energy Efficiency Standards, formally known as Title 24, Part 6.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.2.2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? **Less Than Significant Impact.** Construction and operation of the proposed project would not exceed the significance thresholds of criteria pollutants for which the project region is nonattainment under the CAAQS or NAAQS. According to the SCAQMD, projects that do not exceed the significance thresholds are generally not considered to result in cumulatively considerable air quality impacts. Therefore, based on the fact that the emissions during construction and operation of proposed project would not exceed any of the air quality significance thresholds for any criteria pollutants, the proposed project would not have a cumulatively considerable impact. In order to further reduce construction impacts, the project would comply with emission reduction measures required by the SCAQMD, including SCAQMD Rules 402, 403, 445, and 1113. Therefore, impacts related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measures AQ-1 through AQ-5, above.	Less Than Significant Impact.
Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations? **Less Than Significant Impact.** Construction and operation emissions associated with the proposed project would not exceed the LSTs established by SCAQMD. In order to further reduce construction impacts, the project would comply with emission reduction measures required by the SCAQMD, including SCAQMD Rule 403. Because the project would not exceed the LSTs with compliance with regulatory requirements, impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measures AQ-1 through AQ-5, above.	Less Than Significant Impact.
Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? **Less Than Significant Impact.** **Construction.** Heavy-duty equipment on the project site during construction would emit odors; however, this would be temporary in nature and would cease to occur after construction is completed. No other sources of objectionable odors would occur during construction of the proposed project, and no mitigation measures are required. **Operation.** Potential airborne odors could result from cooking activities associated with new restaurants and trash receptacles. These odors would be confined to the immediate vicinity of the project and minimized by SCAQMD odor regulations and lids on trash receptacles. The proposed uses are not anticipated to emit any other types of objectionable odors. Therefore, operation of the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and this impact would be less than significant. No mitigation is required.	No mitigation is required. Refer to Regulatory Compliance Measures AQ-1 through AQ-5, above.	Less Than Significant Impact.
Cumulative Air Quality Impacts. **Less Than Significant Impact.** The cumulative impact area for air quality related to the proposed project is the South Coast Air Basin. Air pollution is inherently a cumulative impact measured across an air basin. The incremental effects of projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable per SCAQMD guidelines. The proposed project's construction- and operation-related regional daily emissions are less than the SCAQMD significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations on a project-by-project basis would substantially reduce potential impacts associated with the related projects and basin-wide air pollutant emissions. Therefore, the proposed project would not have a cumulatively considerable increase in emissions, and the proposed project's cumulative air quality impacts would be less than significant.	No mitigation is required.	Less Than Significant Impact.
4.3: Biological Resources		
Threshold 4.3.1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? **No Impact.** In its existing condition, the project site does not contain any vegetation. The disturbed condition of the project site is generally not suitable to support special-status plant or animal species. **Special-Status Animals.** According to the California Natural Diversity Database (CNDDB) Sensitive Species database potential occurrences of special status animal species were identified within the project area; however no special-status plant or animal	No mitigation is required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
species were observed during the site survey and suitable habitat for such species is absent from the proposed project disturbance limits. No special-status species are anticipated to be adversely impacted by the project. **Special-Status Habitat/Vegetation.** The USFWS Critical Habitat for Threatened & Endangered Species map does not identify any locations of critical habitat within the project site. The closest known critical habitat is the Bolsa Chica Ecological Reserve, approximately 6.5 miles south of the project site. According to the CNDDB Sensitive Species Database, no sensitive plant species have been documented on the project site or in the project vicinity. The project site is located within an area that is covered by the Orange County Transportation Authority Natural Communities Conservation Plan/Habitat Conservation Plan (OCTA NCCP/HCP) that covers the entirety of Orange County. Only some portions of the Plan Area fall within a designated Permit Area, or the area in which OCTA would request authorization from CDFW and USFWS to issue permits due to potential project-related impacts to certain identified species. Because the project site does not fall within the Permit Area, the proposed project would not conflict with any local, regional, or State HCP. No special-status species are anticipated to be directly affected by the project due to the lack of suitable habitat on the project site. Therefore, no impacts to sensitive or special-status species would result from implementation of the proposed project, and no mitigation is required.		
Threshold 4.3.2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? **No Impact.** The project site is highly disturbed and developed with an asphalt-paved parking lot and does not support any special-status or sensitive riparian habitat as identified in regional plans, policies, or regulations, or by the CDFW or USFWS. Therefore, no significant impacts related to riparian habitat or other sensitive natural communities identified in a local or regional plan would result from project implementation, and no mitigation is required.	No mitigation is required.	No Impact.
Threshold 4.3.3: Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? **No Impact.** According to the National Wetlands Inventory managed by USFWS, the project site does not contain federally protected wetlands. The project site is located entirely outside of streambeds, banks, and riparian habitat. No potential waters of the U.S. or CDFW jurisdictional areas are located on the project site. Although construction activities have the potential to result in temporary indirect effects to water quality including a potential increase in erosion and sediment transport into adjacent or downstream aquatic areas and the contamination of waters from construction equipment, these potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of best management practices (BMPs) and a water quality management plan as discussed in Section 4.8 Hydrology and Water Quality. Specifically, adherence to Regulatory Compliance Measure HYD-1 during construction would ensure that erosion-related impacts during construction would be less than significant by requiring the implementation of construction site BMPs to avoid erosion and sedimentation impacts to nearby creeks and water quality. As such, impacts on state or federally protected wetlands would be less than significant, and no mitigation is required.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce hydrology and water quality impacts. No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided below in Section 4.9, Hydrology and Water Quality. **Regulatory Compliance Measure HYD-1:** **Construction General Permit.** Prior to commencement of construction activities, the Applicant shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit),* NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Cypress Community Development Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to, preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS.	
Threshold 4.3.4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? **Less Than Significant Impact.** The entire project site is highly disturbed and located within a fully urbanized area. The project site is not located within any local or regional wildlife movement corridor and does not function as a special linkage for wildlife movement. In addition, there are no bodies of water on the project site with native resident or migratory fish. Due to the lack of sensitive or special-status species or their habitats on the project site, the project would not result in impacts on candidate, sensitive, or special-status animal species. The proposed project would avoid impacts on nesting resident and/or migratory birds either by avoiding vegetation removal during the avian nesting season (February 1 through August 31) or by implementing Regulatory Compliance Measure BIO-1. The proposed project would avoid impacts on the nests of raptors (which are migratory birds) if the existing trees in the ornamental vegetation area are removed outside the raptor nesting season (February 1 through June 30) and they contain raptor nests. Regulatory Compliance Measure BIO-1, below, would also address any impact to nesting raptors should it be necessary to conduct vegetation removal during the nesting season and raptors are present.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce biology resource impacts. **Regulatory Compliance Measure BIO-1:** **Nesting Bird Survey and Avoidance:** If vegetation removal, construction, or grading activities are planned to occur within the active nesting bird season (February 1 through August 31), the City of Cypress, (or designee), shall confirm that the Applicant/Developer has retained a qualified biologist who shall conduct a preconstruction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust, etc. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist	Less Than Significant Impact.
Threshold 4.3.5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? **Less Than Significant Impact.** The Landmark Tree Ordinance in the City's Municipal Code protects designated landmark trees, which are specifically identified in the City's *Inventory of Landmark Trees* (July 1996). As shown in this inventory, there are no landmark trees on the proposed project site. The removal of any on-site trees or vegetation would not conflict with the City's Landmark Tree Ordinance. Per Article IV of the Municipal Code, Street Trees, any tree within the public right-of-way belongs to the City of Cypress. Any work to street trees conducted as part of the proposed project would be done in accordance with the City Council's adopted Parkway Tree Policy. Therefore, the project would result in less than significant impacts related to conflicts with local policies or ordinances protecting biological resources. No mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.3.6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? **No Impact.** There is no adopted Habitat Conservation Plan (HCP), NCCP, or other habitat conservation plan in the City. However, the OCTA's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) includes a Plan Area that covers the entirety of Orange County. Only some portions of the Plan Area fall within a designated Permit Area, or the area in which OCTA would request authorization from CDFW and USFWS to issue permits due to potential project-related impacts to certain identified species. Because the project site does not fall within the Permit Area, the proposed project would not conflict with any local, regional, or State HCP. Therefore, the proposed project would result in no impacts related to conflict with an HCP, and no mitigation is required.	No mitigation is required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Cumulative Biological Resource Impacts. **Less Than Significant Impact.** Although the project site is located in the Orange County Transportation Authority Natural Community Conservation Plan/Habitat Conservation Plan (OCTA NCCP/HCP), the project site is not within the Permit Area of the Plan Area. As such, development of the proposed project would not result in the removal of any sensitive habitat species identified in the OCTA NCCP/HCP. Therefore, the proposed project would not contribute to the cumulative loss of biological resources, and impacts on biological resources would be less than cumulatively significant.	No mitigation is required.	Less Than Significant Impact.
4.4: Cultural Resources		
Threshold 4.4.1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? **No Impact.** The SCCIC record search results and archaeological pedestrian field survey identified no previously recorded cultural resources on or in soils on the project site. As such, there are no historical resources as defined in Section 15064.5 of the *State CEQA Guidelines* located within the project site. The proposed project would not cause a substantial adverse change in the significance of a historical resource, and no mitigation is required.	No mitigation is required.	No Impact.
Threshold 4.4.2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? **Less than Significant with Mitigation Incorporated.** The SCCIC record search included the project site and the areas within 0.25 mile of the project site. No archaeological resources have been previously recorded within the project site. There has been one archaeological resource previously recorded within 0.25 mile of the project site, the historic-period Navy Golf Course in Seal Beach (P 30-176854), which would not be impacted by project-related construction activities. As a result of seasonal flooding, the floodplain containing the project site would not have been conducive to the accumulation and preservation of intact archaeological cultural deposits. As such, there is a low likelihood of encountering intact buried archaeological deposits during ground-disturbing construction activities. However, there is a possibility that isolated archaeological cultural resources may be encountered during construction activities. Implementation of Mitigation Measure CUL-1 would reduce any potential impacts of the proposed project on the significance of archaeological resources to a less than significant level.	**Mitigation Measure CUL-1:** **Archaeological Resources.** Prior to the issuance of a grading permit, a qualified professional archaeologist shall be retained by the Applicant/Developer to provide cultural resources awareness training to construction personnel. The qualified professional archaeologist shall also be retained by the Applicant/Developer on an on-call basis. This training shall 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 shall be used in the event of inadvertent discoveries of cultural resources during construction. In the event that construction personnel encounter any archaeological deposits during construction activities, the retained qualified professional archaeologist shall be contacted immediately. If any such resources are discovered, contractors shall stop work in the immediate area of the find and contact the retained archaeologist to assess the nature of the find and determine if future studies and/or monitoring is appropriate. Upon completion of any monitoring activities, the archaeologist shall prepare a report to document the methods and results of monitoring activities. This report shall be submitted to the South Central Coastal Information Center (SCCIC).	Less than Significant with Mitigation Incorporated.
Threshold 4.4.3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries? **Less than Significant Impact.** No previously identified human remains are present on the project site, and there are no facts or evidence indicating that Native Americans or people of European descent are buried on the project site. However, undiscovered human remains may be present below the ground surface on any property. Regulatory Compliance Measure CUL-1 requires compliance with the State's Health and Safety Code for the treatment of human remains. Adherence to regulatory standards included in Regulatory Compliance Measure CUL-1 would reduce the impact of the proposed project on human remains to less than significant. No mitigation is required.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measure would be required to reduce impacts to human remains. **Regulatory Compliance Measure CUL-1:** **Human Remains.** If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to State PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.5: Energy		
Threshold 4.5.1: Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? **Less Than Significant Impact.** **Construction.** The project would consume approximately 72,347 gallons of diesel fuel and approximately 162,160 gallons of gasoline during construction, which would increase the annual construction generated fuel use in Orange County by approximately 0.05 percent for diesel fuel usage and approximately 0.01 percent for gasoline fuel usage. As such, project construction would have a negligible effect on local and regional energy supplies. Furthermore, impacts related to energy use during construction would be temporary and relatively small in comparison to Orange County's overall use of the State's available energy sources. No unusual project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the State. Therefore, construction of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant. **Operation.** Energy use consumed by operation of the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project. Operation of the proposed project would increase the annual consumption of electricity, natural gas, diesel fuel, and gasoline in Orange County by approximately 0.02 percent, 0.04 percent, 0.02 percent, and 0.03 percent, respectively. With implementation of Regulatory Compliance Measure E-1, requiring compliance with Title 24 standards, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Therefore, impacts related to consumption of energy resources during operation would be less than significant.	No mitigation is required, but Regulatory Compliance Measure E-1 would apply to the proposed project. **Regulatory Compliance Measure E-1:** **California Code of Regulations (CCR), Title 24.** Prior to the issuance of building permits, the City of Cypress (City) Chief Building Official, or designee, shall confirm that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and green building standards, as well as those listed in Part 11 (California Green Building Standards [CalGreen Code]). The City's Chief Building Official shall confirm that the project complies with the mandatory measures listed in the CalGreen Code for residential and non-residential building construction.	Less Than Significant Impact.
Threshold 4.5.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? **Less Than Significant Impact.** Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the overall use in the County. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the overall use in Orange County, and the State's available energy sources. Therefore, energy impacts at the regional level would be negligible. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the California Energy Commission's (CEC) Integrated Energy Policy Report. Additionally, as demonstrated above under Threshold 4.5.1, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Potential impacts related to conflict with or obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Cumulative Energy Impacts. **Less Than Significant Impact.** The proposed project would result in an increased services demand in electricity and natural gas. Although the proposed project would result in a net increase in electricity usage, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts. Additionally, it is anticipated that SoCalGas would be able to meet the natural gas demand of the proposed project without additional facilities. Furthermore, the proposed project's percent of cumulative electricity and natural gas consumption would be negligible, and there are sufficient planned natural gas and electricity supplies in the region for the estimated increases in energy demands. Transportation related energy use would also increase as part of the proposed project. However, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and to the total number of vehicle trips and vehicle miles traveled (VMT) throughout Orange County and the region. Further, compliance with the existing mitigation measures would ensure that the proposed project does not result in an inefficient, wasteful, and unnecessary consumption of energy. Therefore, the proposed project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.6: Geology and Soils		
Threshold 4.6.1(i): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidences of known fault? (Refer to Division of Mines and Geology Special Publication 42) **No Impact.** According to the California Department of Conservation 2010 Fault Activity Map, there are no known earthquake faults that run through the project site nor is there any other evidence of a known fault that runs through the project site. Therefore, the proposed project would not result in any impact related to the rupture of a known earthquake fault, and there would be no impact.	No mitigation is required.	No Impact.
Threshold 4.6.1(ii): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking? **Less Than Significant with Mitigation Incorporated.** A design-level peak ground acceleration (PGA) of 0.55 g has been calculated for the project site. This indicates that strong seismic ground shaking generated by seismic activity is considered a potentially significant impact that may affect people or structures associated with the proposed project. With the implementation of Mitigation Measure GEO-1 and adherence to the regulatory standards described in Regulatory Compliance Measure GEO-1, potential project impacts related to seismic ground shaking would be reduced to a less than significant level.	**Mitigation Measure GEO-1:** **Compliance with the Recommendations in the Project Geotechnical Assessment.** The Applicant/Developer's construction contractor shall implement the recommendations of the *Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California* (NMG Geotechnical, June 2019; Geotechnical Assessment) prepared for the proposed project, as applicable to the satisfaction of the City of Cypress' (City) Chief Building Official or designee, including, but not limited to: To address potential liquefaction potential and seismically induced settlement, stone columns or (Geopier brand) rammed aggregate piers (RAP) or equivalent ground improvement method alternatives shall be used and installed to a depth of 15 feet (ft). Building areas where the ground is improved with RAPs or stone columns shall provide a minimum 2 ft thick layer of newly compacted fill. The smaller retail buildings may be supported on a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement. Fill material shall be a minimum of 5 ft below finish grade or 3 ft below the bottoms of foundations, whichever is deeper. The bottom of the excavation shall have a layer of geogrid, such as Tensar 130 or BX1515 and a minimum of 2 ft of aggregate base. The remaining fill may be compacted native soil. The deeper undocumented fill in the southeast corner of the project site (future retail shops area) should be completely removed and replaced with engineered fill. To address shallow groundwater and wet soil, some type of ground stabilization, such as cement treatment or aggregate or a combination of both shall be used. 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. Concrete slabs shall be used for all foundations and slabs on grade and shall be a minimum of 4 inches thick. Additional site testing and final design evaluation shall be conducted by the Project Geotechnical Consultant to refine and enhance these requirements. The Applicant/Developer shall require the Project Geotechnical Consultant to assess whether the requirements in that report need to be modified or refined to address any changes in the project features that occur prior to the start of grading. If the Project Geotechnical Consultant identifies modifications or refinements to the requirements, the Applicant/Developer shall require appropriate changes to the final project design and specifications. Design, grading, and construction shall be performed in accordance with the requirements of the City of Cypress Municipal Code and the California Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the requirements of the Project Geotechnical Consultant as summarized in a final written report, subject to review by the City of Cypress Director of Public Works, or designee, prior to commencement of grading activities.	Less Than Significant with Mitigation Incorporated.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	Grading plan review shall also be conducted by the Director of Public Works, or designee, prior to the start of grading to verify that the requirements developed during the geotechnical design evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the Project Geotechnical Consultant as summarized in a final report based on the CBC applicable at the time of grading and building, and the City's Building Code. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and the City of Cypress Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans. Prior to the final grading permits, the Project Geotechnical Consultant shall submit a Final Testing and Observation Geotechnical Report for Rough Grading to the City of Cypress Director of Public Works/City Engineer, or designee. **Regulatory Compliance Measure GEO-1:** **California Building Code Compliance Seismic Standards.** All structures shall be designed in accordance with the seismic parameters presented in the Geotechnical Assessment prepared for this project (NMG Geotechnical, Inc., 2019) and applicable sections of the most current California Building Code (CBC). Prior to the issuance of building permits for planned structures, the Project Soils Engineer and the City of Cypress Chief Building Official, or designee, shall review building plans to verify that the structural design conforms to the requirements of the Geotechnical Assessment and the City of Cypress Municipal Code.	
Threshold 4.6.1(iii): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction? **Less Than Significant with Mitigation Incorporated.** Based on the results of the Geotechnical Assessment, the maximum estimated vertical settlement was calculated to be approximately 2.9 inches for the cone penetrometer test (CPT) locations within the project site. This is well within the commonly accepted limitations of structural mitigation described above (i.e., 4 inches). Additionally, predicted liquefaction-induced total settlement with respect to most of the project site would be addressed by incorporating deep foundations or ground improvement for the larger buildings into the design (Mitigation Measure GEO-1). The best suited ground improvement to mitigate settlement of the large structures would be stone columns or (Geopier brand) rammed aggregate piers (RAP) approximately 15 ft deep. Mitigation Measure GEO-1 also includes ground improvement recommendations (a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement) in the areas of the smaller retail buildings to mitigate potential impacts related to liquefaction-induced settlement. The deeper undocumented fill in the southeast corner of the project site (future retail shops area) would also be completely removed and replaced with engineered fill (Mitigation Measure GEO-1). With the incorporation of Mitigation Measure GEO-1, the potential adverse effects of seismic-related ground failure including liquefaction would be less than significant.	Refer to Mitigation Measure GEO-1, above.	Less Than Significant with Mitigation Incorporated.
Threshold 4.6.1(iv): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides? **No Impact.** The project site and vicinity are relatively flat, and the site is not located within a zone of earthquake induced landslide as mapped by the California Geological Survey (CGS) (CGS, 1998). Historically, there have been no recorded landslides within the City's boundaries (City of Cypress, 2001, page 4.6-7). No landslides are anticipated as the result of the proposed project, and there would be no impact.	No mitigation is required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.6.2: Would the project result in substantial soil erosion or the loss of topsoil? **Less Than Significant Impact.** 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. The total surface area of these existing unpaved areas is approximately 1 acre. During project construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. The Construction General Permit requires preparation of a SWPPP (Regulatory Compliance Measure HYD-1). The SWPPP would detail Erosion Control and Sediment Control BMPs to be implemented during project construction to minimize erosion and retain sediment on site. With compliance with the requirements of the Construction General Permit and with implementation of the construction BMPs, construction impacts related to on-site erosion and the loss of topsoil would be less than significant, and no mitigation is required.	No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided below in Section 4.9, Hydrology and Water Quality.	Less Than Significant Impact.
Threshold 4.6.3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse? **Landslides and Unstable Slopes.** **Less Than Significant Impact.** Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking. Because the project site is located in a relatively flat area, landslides or other forms of natural slope instability do not represent a significant hazard to the project. In addition, as stated above, the site is not within a State-designated hazard zone for Earthquake-Induced Landslide. Therefore, potential impacts related to landslides would be less than significant, and no mitigation is required. **Lateral Spreading.** **Less Than Significant Impact.** Lateral spreading often occurs on very gentle slopes or flat terrain. The dominant mode of movement is lateral extension accompanied by shear or tensile fracture. This failure is caused by liquefaction and is usually triggered by rapid ground motion, such as that experienced during an earthquake, but can also be artificially induced. When coherent material, either bedrock or soil, rests on materials that liquefy, the upper units may undergo fracturing and extension and may then subside, translate, rotate, disintegrate, or liquefy and flow. As discussed above, the Geotechnical Assessment indicates that lateral spreading is not a potential concern with respect to the proposed project. Therefore, potential impacts related to lateral spreading would be less than significant, and no mitigation is required. **Subsidence.** **No Impact.** Subsidence refers to broad-scale changes in the elevation of land. Common causes of land subsidence are pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils (hydrocompaction). Subsidence is also caused by heavy loads generated by large earthmoving equipment. The project site is not located within an area of known subsidence that may be associated with groundwater, peat loss, or oil extraction. Therefore, the proposed project would not be subject to potential geotechnical hazards related to subsidence, and no mitigation is required. **Liquefaction and Compressible/Collapsible Soils.** **Less Than Significant with Mitigation Incorporated.** As discussed in detail under Threshold 4.6.1(iii) above, implementation of Mitigation Measure GEO-1 and adherence to the regulatory standards described in Regulatory Compliance Measure GEO-1 would be required to address the proposed project's impacts with respect to liquefaction and compressible soils. Provided that design and remedial grading, ground improvement (as necessary), and design of building foundation systems are performed in accordance with the applicable requirements in the CBC (adopted by the City as its Building Code with certain amendments), and current standards of practice in the area, excessive settlement resulting from liquefaction and compression of existing undocumented fill and native alluvial soils on the project site would be reduced to a less than significant level.	Refer to Mitigation Measure GEO-1 and Regulatory Compliance Measure GEO-1, which are provided above.	Less Than Significant with Mitigation Incorporated.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Wet Soils. **Less Than Significant with Mitigation Incorporated.** Due the presence of shallow groundwater, excavations deeper than 3–4 ft are likely to encounter groundwater and/or soft, wet soil. Implementation of Mitigation Measure GEO-1, which requires that the ground stabilization recommendations in the Geotechnical Assessment be implemented during grading and construction, would address soft ground conditions due to shallow groundwater. With implementation of Mitigation Measure GEO-1, the proposed project's impacts related to wet soils would be less than significant.		
Threshold 4.6.4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property? **Less Than Significant Impact.** The project site stratigraphy consists soil types have low shrink-swell potential and, therefore, are not susceptible to expansion. In the event that, following the completion of grading, it is determined that near-surface soils within building pad areas exhibit an elevated expansion potential, potential impact of those expansive soils would be addressed through design of structural foundations and floor slabs in compliance with applicable requirements in the California Building Code, as adopted by the City of Cypress in its Municipal Code (Regulatory Compliance Measure GEO-1). Since the potential for expansive soils is low and any potential expansion would be addressed through compliance with applicable code requirements, the proposed project would not create substantial potential risks to life or property and there would be less than significant impacts.	No mitigation is required. Refer to Regulatory Compliance Measure GEO-1, which is provided above.	Less Than Significant Impact.
Threshold 4.6.5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? **No Impact.** The proposed project would not include the use of septic tanks or alternative wastewater disposal systems because sanitary sewer and wastewater facilities are available in the vicinity of the project site. Therefore, the project would have no impact with respect to septic tanks or alternative wastewater disposal systems.	No mitigation is required.	No Impact.
Threshold 4.6.6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? **Less Than Significant with Mitigation Incorporated.** Ground disturbance associated with the various components of the proposed project is expected to extend to depths of 10 ft or less below the existing ground surface, with the exception of the rammed aggregate piers, which will be used for supports for the larger buildings (i.e., theater, five-story hotel, and apartment complex). The rammed aggregate piers are expected to extend to a depth of 15 ft below the existing surface. The Young Alluvial Fan Deposits, Unit 2 that lie below surficial Artificial Fill within the project site have low paleontological sensitivity from the surface to a depth of 10 ft and high sensitivity below a depth of 10 ft. As such, the majority of project activities will remain in deposits with low paleontological sensitivity. Although the rammed aggregate piers are expected to extend up to 5 ft into deposits with high paleontological sensitivity, drilling for aggregate piers has a limited impact area and presents challenges to collecting fossils and the contextual information necessary for scientific importance. Considering the paleontological sensitivity of the deposits in the project site and the excavation parameters, there is a potential for the proposed project to impact scientifically important paleontological resources. To mitigate adverse impacts to unknown, buried paleontological resources that may exist on-site, Mitigation Measure GEO-2 requires that if paleontological resources are discovered during ground-disturbing activities, a qualified paleontologist shall be contacted to assess the discovery for scientific importance. The qualified paleontologist shall then make recommendations regarding treatment and disposition of the discovery, the need for paleontological monitoring, and preparation of the appropriate report. Implementation of Mitigation Measure GEO-2 would ensure that impacts to paleontological resources are reduced to a level that is less than significant.	**Mitigation Measure GEO-2:** **Procedures for Unexpected Paleontological Resources Discoveries.** If paleontological resources are discovered during ground-disturbing activities associated with the proposed project, construction personnel shall immediately halt work within 50 ft of the discovery, and the Applicant/Developer or construction supervisor shall contact a qualified paleontologist to assess the discovery for scientific importance. A qualified paleontologist is defined as a person with an M.S. or Ph.D. in geology or paleontology and who meets the standards set forth by the Society of Vertebrate Paleontology. The paleontologist shall make recommendations regarding the collection, treatment, and disposition of the discovery. Scientifically important resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a museum repository. If paleontological resources are discovered, regardless of their scientific importance, paleontological monitoring shall be required for subsequent ground-disturbing activities at a frequency, depth, and/or interval determined by the paleontologist. Paleontological monitoring shall be conducted by a qualified paleontological monitor as set forth in the Society of Vertebrate Paleontology standards. At the conclusion of monitoring, a final monitoring report shall be prepared by the paleontologist to document the results of monitoring and project compliance with all regulations and project requirements. If scientifically important paleontological resources are recovered, this report shall also document those paleontological resources with a catalog, descriptions, and photographs as determined appropriate by the paleontologist. The final monitoring report shall be submitted to the City of Cypress Director of Community Development Department or designee for review and approval. A copy of this final report shall also accompany the fossil material to the museum repository.	Less Than Significant with Mitigation Incorporated.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Cumulative Geology and Soils Impacts. **Less Than Significant with Mitigation Incorporated.** Typically, geology and soils impacts are specific to a particular project site and there is little, if any, cumulative relationship between the development of a proposed project and development within a larger cumulative area. Moreover, while seismic conditions are regional in nature, seismic impacts on a given project site are site-specific. Therefore, the proposed project would not affect the level of intensity at which a seismic event on an adjacent site is experienced. It is not anticipated that the development of nearby projects would have any geotechnical impact on the project site or the buildings that would be constructed as part of the proposed project, nor would the development of the proposed project have impacts on nearby projects. Therefore, the proposed project and the applicable related projects would not have the potential to cause cumulatively significant adverse impacts related to geology and soils. Potential impacts of the proposed project to unknown paleontological resources and unique geologic features, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Cypress, could contribute to a cumulatively significant impact due to the overall loss of paleontological remains unique to the region. Implementation of Mitigation Measure GEO-2 would ensure that the proposed project, together with cumulative projects, would not result in significant cumulative impacts to unique paleontological resources or unique geologic features.	Refer to Mitigation Measure GEO-2, which is provided above.	Less Than Significant with Mitigation Incorporated.
4.7 Greenhouse Gas Emissions		
Threshold 4.7.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? **Significant and Unavoidable Impact.** Although compliance with CCR Title 24 and the CALGreen Code would help to reduce the proposed project's GHG emissions, the overall emissions attributable to construction and operation of the proposed project of 7,208 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr) are expected to exceed the South Coast Air Quality Management District's (SCAQMD) thresholds of 3,000 MT CO_2e/yr. The proposed project's greenhouse gas emissions of 7.9 MT CO_2e per service population per year (CO_2e/SP/yr) would also exceed the SCAQMD's threshold of 4.3 MT CO_2e/SP/yr for 2022. Therefore, the proposed project would result in a significant impact related to greenhouse gas emissions. The proposed project includes mitigation measures that require the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater to be designed and built to be 10 percent more energy-efficient than the 2019 Title 24 requirements or the current Title 24 requirements, whichever are more stringent, and the implementation of a Transportation Demand Management (TDM) program for on-site residents and workers to reduce vehicle miles traveled. Mitigation for greenhouse gas emissions can include energy conservation, area source emissions reductions, water conservation, implementation of a TDM program, and recycling requirements. However, because the type and extent of measures that would be feasible and that could be implemented would be dependent on the individual tenants that occupy the project, greenhouse gas emission reductions of the individual developments within the project area, the total amount of reductions toward the greenhouse gas reduction analysis cannot be quantified at this time. Furthermore, it may not be feasible for all projects to achieve the reduction targets. For example, the ability of a business to affect employee and patron vehicle miles traveled would depend in part on the number of employees and patrons, where they live, and the availability of regional programs such as transit buses. Therefore, impacts related to the generation of greenhouse gas emissions would remain significant and unavoidable.	**Mitigation Measure GHG-1:** **Energy Conservation.** Prior to the issuance of building permits, the Applicant/Developer shall provide evidence to the satisfaction of the City of Cypress Director of Community Development Department, or designee, that the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater shall be designed and built to be 10 percent more energy-efficient than 2019 Title 24 requirements or the current Title 24 requirement, whichever is more stringent. **Mitigation Measure GHG-2:** **Transportation Demand Management (TDM) Program.** The Applicant/Developer shall develop a TDM Program for on-site residents and workers with the goal of reducing project-related vehicle miles traveled (VMT). The TDM strategies shall include, but not be limited to, the following: i. Prior to the issuance of a building permit for any of the project's buildings, the Applicant/ Developer shall provide evidence to the satisfaction of the Director of the City of Cypress Community Development Department, or designee, that a bicycle rack or a secured bicycle storage area shall be installed within 50 feet of each proposed building. ii. Prior to the issuance of a certificate of occupancy for the apartment building, the Apartment Building Manager shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that bike route maps, local transit route maps and schedules, and other transportation information, such as the existing carpooling program sponsored by the Orange County Transportation Authority (OCTA), are displayed in a prominent area accessible to residents and employees. iii. Prior to the issuance of a certificate of occupancy for the project's movie commercial buildings, the Applicant/Developer shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that the lease agreements executed with any tenants contain provision requiring each business to provide cash incentives for employees to use public transit and display bike route maps, local transit route maps and schedules, and other transportation information, such as OCTA's existing carpooling program in a prominent area accessible to employees.	Significant and Unavoidable Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	iv. The Applicant/Developer shall organize an annual event on the project site promoting the use of transit, carpooling programs, and non-motorized methods of transportation by project residents, employees, and visitors. The City of Cypress Director of Community Development Department, or designee, shall be responsible for confirming that the event is held.	
Threshold 4.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? **Less than Significant Impact.** Applicable plans adopted for the purpose of reducing greenhouse gas emissions include CARB's Scoping Plan and SCAG's 2016–2040 RTP/SCS. Although measures in the Scoping Plan apply to State agencies and not the proposed project, the project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project would be consistent with the CARB Scoping Plan. Based on the nature of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS. Therefore, the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to greenhouse gas emissions, and impacts are considered less than significant. No mitigation is required.	No mitigation is required.	Less than Significant Impact.
Cumulative Greenhouse Gas Emissions Impacts. **Significant and Unavoidable Impact.** Because the proposed project is not consistent with the GHG emissions reduction target from CARB, and because its impacts alone would cause or significantly contribute to global climate change, project-related greenhouse gas emissions would be considered cumulatively considerable. Therefore, the proposed project would have a cumulatively considerable increase in emissions, and the proposed project's cumulative greenhouse gas emission impacts would remain significant and unavoidable.	Refer to the mitigation measures under Threshold 4.7.1.	Significant and Unavoidable.
4.8 Hazards and Hazardous Materials		
Threshold 4.8.1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **Less Than Significant Impact.** **Construction.** Construction of the proposed project would temporarily increase the regional transport, use, and disposal of construction-related hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). Construction activities would be required to comply with applicable State and federal regulations for proper transport, use, storage, and disposal of excess hazardous materials and hazardous construction waste. In addition, the proposed project would comply with Regulatory Compliance Measures HYD-1 and HYD-2, which require compliance with the waste discharge permit requirements to avoid potential impacts to water quality due to spills or runoff from hazardous materials used during construction. Therefore, with adherence to the regulatory standards included in Regulatory Compliance Measures HYD-1 and HYD-2, impacts related to the routine transport, use, or disposal of hazardous materials during construction would be less than significant. **Operations.** Retail and restaurant uses included in the proposed project may include the use and disposal of typical cleaning products along with limited use of pesticide and herbicides for landscape maintenance. Trucks accessing the businesses on site would contain oil and gasoline, to power their engines, which could have the potential to result in minor releases of such substances through drips or leaks from truck loading areas. Prior to the issuance of grading permits, conditions of approval would be applied to the proposed project by the Orange County Fire Authority (OCFA) to reduce hazardous material impacts and insure that any hazardous waste that is generated on-site would be transported to an appropriate disposal facility by a licensed hauler in accordance with State and federal law. Therefore, implementation would result in less than significant impacts related to the routine transport, use, or disposal of hazardous materials.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-2, which are provided below in Section 4.9, Hydrology and Water Quality.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.8.2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? **Less Than Significant Impact.** Because no significant hazards would be created by uses associated with the proposed project, the potential for the proposed project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.8.3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? **Less Than Significant Impact.** Grace Christian School is located approximately 0.75 mile northwest of the project site, and the Cottonwood Christian Center preschool facility is located approximately 0.5 mile west of the project site. The proposed project's uses would not pose a significant threat of hazardous emissions or significant handling of hazardous materials or substances. Therefore, impacts on schools would be less than significant.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.8.4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? **Less Than Significant Impact.** The project site is not included on a list of hazardous materials sites that could create a significant hazard to the public or the environment and is not a recorded Superfund site. The Phase I Environmental Site Assessment (ESA) identified several listings for off-site adjacent or nearby properties on databases potentially indicative of a contamination concern. However, the Phase I ESA concluded that these sites do not pose a potential hazard to the project site. In addition, soil sampling undertaken as part of the Phase II Limited Soil Investigation (LSI) did not identify elevated concentrations of metals, TPH, or VOCs in the soil at the project site. Therefore, impacts related to hazardous materials sites would remain less than significant.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.8.5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? **Less Than Significant Impact.** The project site is located approximately 0.5 mile from the Joint Forces Training Base (JFTB) Los Alamitos. According to the Airport Land Use Commission's 2016 Airport Environs Land Use Plan (AELUP) for Joint Forces Training Base Los Alamitos, the project site is located in the FAA Part 77 Notification Area and the AELUP height restriction zone for JFTB Los Alamitos. Implementation of the proposed project would not result in a safety hazard for people working in the project area because the project would comply with all appropriate FAA standards and requirements, including Regulatory Compliance Measure HAZ-1, which requires that the FAA be notified of any proposed structure(s) that would penetrate the 100 to 1 imaginary surface that surrounds the runway at JFTB Los Alamitos. The FAA would then be responsible for reviewing the height of the proposed structures and determining whether they pose a potential aviation hazard. With adherence to the regulatory standards provided in Regulatory Compliance Measure HAZ-1, implementation of the proposed project would result in less than significant impacts related to safety hazards for people working in the project area.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce hazards and hazardous materials impacts. **Regulatory Compliance Measure HAZ-1:** **Federal Aviation Regulation Title 14 Part 77.** The Applicant/Developer shall notify the Federal Aviation Administration (FAA) of any proposed structure(s) that would penetrate the 100 to 1 imaginary surface that surrounds the runway at Joint Forces Training Base Los Alamitos at least 45 days prior to beginning construction.	Less Than Significant Impact.
Threshold 4.8.6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? **No Impact.** The project site is not located along an emergency evacuation route. Therefore, implementation of the proposed project would not interfere with the adopted emergency response plan and/or the emergency evacuation plan. No impact would occur.	No mitigation is required.	No Impact.
Threshold 4.8.7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? **No Impact.** The project site is located within a fully urbanized area. There are no wildlands adjacent or in the vicinity of the project site, and the project site is not designated as a Fire Hazard Severity Zone on the Statewide CAL FIRE Map. Therefore, there will be no risk of loss, injury, or death involving wildland fires. No impact would occur.	No mitigation is required.	Less Than Significant Impact.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Cumulative Hazards and Hazardous Materials Impacts. **No Impact.** For the proposed project, impacts due to hazardous materials would less than significant. Although some of the cumulative projects listed also have potential impacts associated with hazardous materials, the environmental concerns associated with hazardous materials are site specific. Each project is required to address any issues related to hazardous material or wastes. Federal, state, and local regulations require mitigation to protect against site contamination by hazardous materials. Therefore, there would be no cumulative hazardous materials impacts.	No mitigation is required.	No Impact.
4.9: Hydrology and Water Quality		
Threshold 4.9.1: Would the project violate any water quality standards or waste discharge requirements? **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction and operational BMPs. Construction and operational BMPs would reduce pollutants of concern in stormwater runoff, and would ensure that water quality impacts are less than significant.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce hydrology and water quality impacts. **Regulatory Compliance Measure HYD-1:** **Construction General Permit.** Prior to commencement of construction activities, the Applicant shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit),* NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Cypress Community Development Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to, preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction activities and stabilization of the Project site, a Notice of Termination shall be submitted via SMARTS. **Regulatory Compliance Measure HYD-3:** **Best Management Practices.** The Applicant/Developer shall implement the Best Management Practices identified in Section IV of the Water Quality Management Plan and the drainage improvements identified in the Hydrology and Hydraulics Study. In addition, the Property Management Association shall be the responsible party for inspection and maintenance of the Best Management Practices as identified in Section V of the Preliminary Water Quality Management Plan.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.9.2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? **Less Than Significant Impact.** Construction and operation of the proposed project would not involve direct groundwater extraction, and increased water use would not substantially affect groundwater supplies. Additionally, groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.9.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? **Less Than Significant Impact.** The proposed project would comply with the requirements of the Construction General Permit and would implement construction BMPs to reduce impacts related to on-site, off-site, or downstream erosion or siltation. In addition, the proposed project would not increase downstream erosion or siltation impacts during operation because downstream receiving waters are not susceptible to hydromodification.	No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided above.	Less Than Significant Impact.
Threshold 4.9.4: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? **Less Than Significant Impact.** The proposed project would comply with existing NPDES requirements and would implement construction BMPs, proposed storm drain systems, and a detention system. Two scenarios are proposed to convey off-site runoff that exceeds the capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue. Under Scenario 1, flow that exceeds the capacity of the Winners Circle stormdrain system would be conveyed west toward Siboney Street. Siboney Street would be reconstructed to crown the road to provide sufficient slope to allow stormwater to drain to Katella Avenue without ponding. Additionally, a portion of the parking lot to the north of the project site would be repaved. Under Scenario 2, flow exceeding the capacity of the Winners Circle stormdrain system would be conveyed across the project site via an underground storm drain to the Katella Avenue storm drain system near the existing on-site driveway. With implementation of the proposed stormdrain systems and detention system, impacts related to a substantial increase in the rate or amount of surface runoff, flow, and volume that would result in flooding would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided above.	Less Than Significant Impact.
Threshold 4.9.5: Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? **Less Than Significant Impact.** The proposed project would comply with existing NPDES requirements to prevent substantial additional sources of polluted runoff being discharged to the storm drain system, and would target pollutants of concern in runoff from the Project site through implementation of construction and operational BMPs. The proposed project includes proposed stormdrain systems and detention system to reduce stormwater runoff so as to not exacerbate the existing stormdrain capacity deficit.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce hydrology and water quality impacts. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above. **Regulatory Compliance Measure HYD-2:** **Groundwater Dewatering Permit.** If groundwater dewatering is required during excavation activities, the Applicant shall obtain coverage under the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality (*Order No. R8-2009-0003, NPDES No. CAG998001) (De Minimus Permit). This shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to the start of dewatering. Groundwater dewatering activities shall comply with all applicable provisions in the permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.	Less Than Significant Impact.
Threshold 4.9.6: Would the project otherwise substantially degrade water quality? **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction and operational BMPs. Construction and operational BMPs would reduce pollutants of concern in stormwater runoff to ensure that the proposed project would not substantially degrade water quality.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.9.7: Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? **No Impact.** The project site is not located within a 100-year floodplain; therefore, the project would not place housing or structures within a 100-year flood hazard area. According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) No. 06059C0116J (December 3, 2009), the project site is located within Zone X, which comprises areas of 0.2 percent annual chance flood (500-year flood).	No mitigation is required.	No Impact.
Threshold 4.9.8: Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows? **No Impact.** The project site is not located within a 100-year floodplain; therefore, the project would not place housing or structures within a 100-year flood hazard area. According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) No. 06059C0116J (December 3, 2009), the project site is located within Zone X, which comprises areas of 0.2 percent annual chance flood (500-year flood).	No mitigation is required.	No Impact.
Threshold 4.9.9: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? **Less Than Significant Impact.** The project site is located within the inundation zone of Prado Dam and the Carbon Canyon Dam. Although the project would construct new structures in an inundation zone, the proposed project would not increase the chance of inundation from failure of Carbon Canyon Dam or Prado Dam. Additionally, the City's emergency evacuation plans would be implemented if these dams were susceptible to rupture during heavy rains or other events.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.9.10: Would the project be subject to inundation by seiche, tsunami, or mudflow? **No Impact.** The project site is relatively flat and not at risk of mudflow, and is not located within an inundation zone of a seiche or tsunami.	No mitigation is required.	No Impact.
Threshold 4.9.11: Would the project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash). **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction and operational BMPs. Construction and operational BMPs would reduce pollutants of concern in stormwater runoff, and would ensure that increased pollutant discharge during project construction and operation would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above.	Less Than Significant Impact.
Threshold 4.9.12: Would the project result in significant alteration of receiving water quality during or following construction? **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction and operational BMPs. Construction and operational BMPs would reduce pollutants of concern in stormwater runoff, and would ensure that alteration of receiving water quality during project construction and operation would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above.	Less Than Significant Impact.
Threshold 4.9.13: Could the proposed project result in increased erosion downstream? **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction BMPs to reduce impacts related to on-site, off-site, or downstream erosion or siltation. In addition, the proposed project would not increase downstream erosion or siltation impacts during operation because downstream receiving waters are not susceptible to hydromodification.	No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided above.	Less Than Significant Impact.
Threshold 4.9.14: Would the project result in increased impervious surfaces and associated increased runoff? **No Impact.** The proposed project would not change the impervious surface area on site and therefore would not increase stormwater runoff from the project site. The proposed project would also include a detention system to reduce peak discharges from the Project site.	No mitigation is required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.9.15: Would the project create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes? **Less Than Significant Impact.** The proposed project would comply with the requirements of the Construction General Permit and would implement construction BMPs, proposed storm drain systems, and a detention system to reduce impacts related to a substantial increase in the rate or amount of surface runoff, flow, and volume that would result in flooding.	No mitigation is required. Refer to Regulatory Compliance Measure HYD-1, which is provided above.	Less Than Significant Impact.
Threshold 4.9.16: Would the project be tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired? **Less Than Significant Impact.** The proposed project would comply with the requirements of the Construction General Permit and would implement construction and operational BMPs to target and reduce pollutants in stormwater runoff from the project site, including those contributing to downstream water quality impairments.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1, HYD-2, and HYD-3, which are provided above.	Less Than Significant Impact.
Threshold 4.9.17: Would the project be tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions? **No Impact.** The nearest CWA Section 303(d) impaired waterbody is San Gabriel River, which is located approximately 6 miles downstream of the project site. The project would not discharge directly into this CWA Section 303(d) impaired water.	No mitigation is required	No Impact.
Threshold 4.9.18: Would the project have a potentially significant environmental impact on surface water quality to either marine, fresh, or wetland waters? **Less Than Significant Impact.** The proposed project would comply with existing NPDES regulations and would implement construction and operational BMPs. Construction and operational BMPs would reduce pollutants of concern in stormwater runoff, and would ensure that environmental impacts on surface water quality to marine, fresh, or wetland waters during project construction and operation would be less than significant.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above.	Less Than Significant Impact.
Threshold 4.9.19: Would the project have a potentially significant adverse impact on groundwater quality? **Less Than Significant Impact.** Because minimal infiltration would occur and no groundwater injection would occur, project activities would not substantially degrade groundwater quality.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.9.20: Would the project cause or contribute to an exceeded applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses? **Less Than Significant Impact.** Because minimal infiltration would occur and no groundwater injection would occur, project activities would not result in the exceedance of water quality objectives or degradation of beneficial uses.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.9.21: Would the project impact aquatic, wetland, or riparian habitat? **No Impact.** There are no aquatic, wetland, or riparian habitat present on the project site. Los Alamitos Channel, the downstream receiving water, is concrete-lined and does not provide aquatic, wetland, or riparian habitat.	No mitigation is required.	No Impact.
Threshold 4.9.22: Would the project include new or retrofitted stormwater treatment control Best Management Practices (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g., increased vectors or odors)? **Less Than Significant Impact.** The project would include implementation of post-construction BMPs (underground detention basins) to reduce impacts related to hydrology and water quality. The post-construction BMPs would be underground and would be designed and routinely inspected and maintained to reduce impacts related to vectors and odors.	No mitigation is required.	Less Than Significant Impact.
Cumulative Hydrology and Water Quality Impacts. **Less Than Significant Impact.** The proposed project and other related projects would comply with the applicable NPDES requirements and would implement construction and operational BMPs and drainage facilities to reduce impacts related to hydrology and water quality.	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.10: Land Use and Planning		
Threshold 4.10.1: Would the project physically divide an established community? **No Impact.** The area surrounding the project site is developed with a variety of racetrack, office, business park, commercial and retail services, and residential land uses as well as several religious facilities. The proposed project would replace approximately 13 acres of surface parking with a mix of residential, hotel, entertainment, and retail uses. As a result, the project would not result in physical divisions in any established community. No mitigation is required.	No mitigation is required.	No Impact.
Threshold 4.10.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect **Less than Significant Impact.** The proposed project would be consistent with the 2016–2040 RTP/SCS, the City's General Plan, and the amended Specific Plan. Therefore, the proposed project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Cumulative Land Use and Planning Impacts. **Less Than Significant Impact.** The cumulative impact area for land use for the proposed project is the City of Cypress. Several development projects are approved and/or pending within the City. The City of Cypress is an urbanized area with a wide variety of established land uses. The land around the project site has been developed with a variety of residential, business park, racetrack, and commercial, land uses. The proposed project would amend the Specific Plan to modify the land use designation of the project site from Professional Office to Mixed Use Commercial/Residential (Planning Area 5B) to accommodate the project's proposed uses. The proposed project would also amend the Specific Plan to update the land use tables to incorporate the new Planning Area 5B and include site development standards and building floor area ratio (FAR) and site coverage standards specific to Planning Area 5B. In addition to modifying the parking requirements that would apply to Planning Area 5B, the proposed Specific Plan Amendment would amend several of the goals and objectives of the Specific Plan. Should the City Council approve the proposed project, the proposed project would be consistent with the Specific Plan and cumulative land use impacts would be considered less than significant.	No mitigation is required.	Less Than Significant Impact.
4.11: Noise		
Threshold 4.11.1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? **Construction Noise.** **Less Than Significant with Mitigation Incorporated.** During project construction, exterior noise levels could affect sensitive receptors in the vicinity. The closest residences are located approximately 890 ft west and 350 ft south of the project site. In addition, the closest church is located approximately 465 ft west of the project site. Construction activities would expose nearby sensitive receptors to peak noise levels from 64.1 dBA to 66.5 dBA L_{max} during the site preparation and grading phase (Phase 1), 65.8 dBA to 68.3 dBA L_{max} during the construction of buildings phase (Phase 2), and 64.9 dBA to 67.4 dBA L_{max} during the paving phase (Phase 3). Noise levels generated from where the installation of Geopiers would take place would range from 64.9 to 73.1 dBA L_{max} at the closest sensitive receptors. These noise levels would not exceed the anytime maximum daytime exterior noise standard of 80 dBA L_{max} in the City of Cypress and noise levels would not exceed the anytime maximum daytime exterior noise standard of 75 dBA L_{max} in the City of Los Alamitos. The proposed project would comply with the permitted construction hours from 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays specified in the Specific Plan. No construction shall be permitted outside of these hours or on Sundays or federal holidays (Regulatory Compliance Measure NOI-1). The implementation of Mitigation Measure NOI-1 would further minimize construction-related noise to a less than significant impact. **Operational Noise.** **Less Than Significant Impact.** Operational noise sources associated with the proposed project include mobile and stationary (i.e., truck delivery and unloading activities, HVAC equipment, trash pick-up/compactor operations, and parking lot activities) sources. The proposed project would not result in any exceedances in mobile-source or stationary source noise standards. Operational impacts would be less than significant. No mitigation is required.	**Mitigation Measure NOI-1:** Prior to the issuance of a grading permit, the construction contractor shall demonstrate, to the satisfaction of the City of Cypress Director of Community Development, or designee, the following: ● Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices. ● Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. ● During construction, stationary construction equipment shall be placed such that emitted noise is directed away from noise-sensitive receptors. ● All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners and residents to contact the job superintendent with concerns. If the Applicant/Developer receives a noise-related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request. **Mitigation Measure NOI-2:** Prior to the issuance of building permits, the project Applicant/Developer shall demonstrate,	Less Than Significant with Mitigation Incorporated.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	to the satisfaction of the City of Cypress Director of Community Development, or designee, that on-site stationary noise sources, such as rooftop air conditioners, shall not exceed City noise standards as stated within the City's Municipal Code Sections 13-68 and 13-69. **Regulatory Compliance Measure NOI-1:** The construction contractor shall limit all construction-related activities to between the hours 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. No construction shall be permitted outside of these hours or on Sundays or a federal holiday. **Regulatory Compliance Measure NOI-2**: Mechanical equipment, including air conditioning units in residential, commercial, and industrial zoning districts, shall be enclosed within a structure or completely screened from view from surrounding properties by the use of a fence or wall consistent with Section 3.11.100(b) of the City of Cypress Municipal Code. **Regulatory Compliance Measure NOI-3:** Trash collection and compacting shall be limited to between the hours of 5:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts and between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts that are within 200 feet of residential zoning districts, consistent with Section 3.10.070(C) of the City of Cypress Municipal Code.	
Threshold 4.11.2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels? **Less Than Significant with Mitigation Incorporated.** Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment. Based on the vibration levels presented in Caltrans' *Transportation and Construction Vibration Guidance Manual* (2013), ground vibration generated by heavy-duty equipment at the closest residential, church, office, and commercial building would not be anticipated to exceed the community annoyance thresholds. In addition, vibration levels would not result in building damage because vibration levels would not exceed the FTA's damage threshold of 94 VdB (0.2 PPV [inch/sec]) and nearby buildings were observed to be constructed of non-engineered timber and masonry. The project construction contractor would be required implement Mitigation Measure NOI-1 to further minimize construction-related vibration. Therefore, ground-borne vibration and ground-borne noise levels generated by project construction activities would be less than significant with the implementation of mitigation measures.	Refer to Mitigation Measure NOI-1, which is provided above.	Less Than Significant with Mitigation Incorporated.
Threshold 4.11.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? **Less Than Significant Impact.** The closest airport to the project site is the JFTB Los Alamitos, located approximately 0.5 mile south of the project site. The project site is within the 60 dBA CNEL noise contour, but outside of the 65 dBA CNEL noise contour for JFTB Los Alamitos. Therefore, aircraft noise generated from the closest airport would not expose people residing or working on the project site to excessive noise levels due to the proximity of a public airport. This noise impact would be less than significant, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Cumulative Noise Impacts. **Construction Noise.** **Less Than Significant with Mitigation Incorporated.** Construction activities associated with the proposed project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to each construction site. Construction noise for the proposed project was	Refer to Mitigation Measure NOI-1, which is provided above.	Less Than Significant with Mitigation Incorporated.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
determined to be less than significant with the implementation of Mitigation Measure NOI-1, which requires compliance with the construction hour restrictions specified in the Specific Plan. Cumulative development in the vicinity of the project site could result in elevated construction noise levels at sensitive receptors in the area surrounding the project site. However, each project would be required to comply with the applicable City's Municipal Code limitations on construction. Therefore, cumulative construction noise impacts would be less than significant with the implementation of Mitigation Measure NOI-1. **Operational Stationary Source Noise.** **Less Than Significant Impact.** Long-term stationary noise sources associated with the development at the proposed project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the proposed project and related projects together could result in higher noise levels than considered separately. As previously described, on-site noise sources associated with the proposed project would not exceed any applicable noise standards. Additionally, each of the related projects would be required to comply with the City's noise level standards and include mitigation measures if standards are exceeded. Therefore, cumulative noise impacts from stationary noise sources would be less than significant. **Operational Traffic Source Noise Impacts.** **Less Than Significant Impact.** Project-related traffic would result in small (1.7 dBA or less) noise level increases along roadway segments in the vicinity of the project site under the project opening year (2021) condition. Therefore, none of the roadway segments in the vicinity of the project site would experience a substantial noise level increase greater than the applicable noise thresholds and the proposed project would not have a cumulatively significant traffic noise impact.		
4.12: Population and Housing		
Threshold 4.12.1: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? **Less Than Significant Impact.** The proposed project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). The proposed 251 apartment units would generate approximately 758 new residents. The addition of 758 residents represents a population increase of approximately 1.5 percent over existing conditions as of January 2019. SCAG recently updated its regional forecast in conjunction with its efforts to prepare and adopt the 2020–2045 RTP/SCS. Growth forecasts included in the Draft 2020–2045 RTP/SCS indicate that the City's population is projected to grow by 1,700 persons from 2016 to 2045 and the projected population in the City is 51,300 persons in 2045. If SCAG's updated growth forecast was used in this analysis instead of the 2016–2040 RTP/SCS Growth Forecast, the population increase of 758 residents as a result of the proposed project would be within these updated population projections. For all these reasons, the proposed project would not directly induce substantial unplanned population growth. Therefore, the proposed project's direct impact on population growth would be less than significant, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.12.2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? **No Impact.** In the existing condition, the project site is a paved parking lot and, therefore, does not contain any population or housing. The proposed project would not displace any existing housing or populations on the project site. Therefore, there would be no impact related to the displacement of substantial numbers of existing people or housing. No mitigation is required.	No mitigation is required.	No Impact.
Cumulative Population and Housing Impacts. **Less Than Significant Impact.** The proposed project's contribution to cumulative impacts associated with population, housing, and employment growth would be less than significant.	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.13: Public Services		
Threshold 4.13.1(i): Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection? **Less Than Significant with Mitigation Incorporated.** The proposed project would incrementally increase demand for fire protection an emergency service calls. OCFA indicated that all OCFA uses a fair share approach to mitigate fire service response impacts and facility/equipment needs. To address potential impacts to fire services, the proposed project would be required to implement Mitigation Measure PS-1, which requires the Applicant/Developer to enter into a secure fire protection agreement. Mitigation Measure PS-1 would reduce potential impacts to a less than significant level.	**Mitigation Measure PS-1:** **Secured Fire Protection Agreement**: Prior to the issuance of any building permits, the Applicant/Developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). This Agreement shall specify the Applicant/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.	Less Than Significant with Mitigation Incorporated.
Threshold 4.13.1(ii): Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection? **Less Than Significant Impact.** As stated in Section 4.12, Population and Housing, the proposed project would not induce substantial population growth. Although the proposed project may incrementally contribute to the need for one additional police officer to meet future demand, the addition of one new police officer would not necessitate the expansion of the City's existing police facilities because the new police officer would be accommodated in existing facilities. Additionally, the proposed hotel, apartment building, movie theater, and retail buildings are anticipated to hire private security, enhancing on-site surveillance and potentially reducing the demand for police services to the project site. Therefore, the proposed project would not result in any substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.13.1(iii): Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools? **Less Than Significant Impact.** The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools. Pursuant to the provisions of Government Code Section 65996, a project's impact on school facilities is fully mitigated through payment of the requisite school facility development fees current at the time a building permit is issued. Therefore, with payment of the required fees, as outlined in Regulatory Compliance Measure PS-1, potential impacts to school services and facilities associated with implementation of the proposed project would be less than significant.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measure would be required to reduce public service impacts. **Regulatory Compliance Measure-PS-1:** **Payment of School Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof to the Director of the City of Cypress Community Development Department, or designee, that payment of school fees to the Anaheim Union High School District has been made in compliance with Section 65995 of the California Government Code.	Less Than Significant Impact.
Threshold 4.13.1(iv): Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks? **Less Than Significant Impact.** The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks. The incremental increase in demand for park facilities created by the project's proposed 251 residential units would result in limited use of existing recreation facilities in the project vicinity. However, this increased demand would be offset by the payment of park fees required by Regulatory Compliance Measure REC-1. Additionally, on-site amenities included in the proposed project include: fitness area, open air courtyard, and club room, which would be available to residents and their guests. The inclusion of these recreational facilities would offset some of the demand for parks and recreational facilities associated with the new residents.	No mitigation is required. Refer to Regulatory Compliance Measure REC-1, which is provided in Section 4.14, Recreation, below.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.13.1(v): Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities? **Less Than Significant Impact.** The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities. Demand for library services is typically determined based on the size of the resident population. As stated in Section 4.12, Population and Housing, the proposed project would result in 758 new residents, which is not substantial. As of 2015, the Cypress Branch Library consisted of a 15,000 sf facility with approximately 88,000 books, CDs, and videos. According to the County's service standards of 0.2 sf of library space per capita and 1.5 books per capita, the Cypress Branch Library has the capacity to accommodate a population of 75,000 and enough books to serve a population of 58,667. The City currently exceeds the County's standards for size and number of books since the City's most current population estimate is 49,833. Accordingly, the Cypress Branch Library has sufficient capacity to accommodate the additional population growth associated with the proposed project.	No mitigation is required.	Less Than Significant Impact.
Cumulative Public Services Impacts. **Less Than Significant Impact.** The project site is a vacant parking lot located in an urban area with existing services provided by public service providers in the vicinity. The cumulative area for public services is listed below for each individual public service provider. As described above, the proposed project's potential impacts to fire services, police protection, school services, and public libraries are limited. These impacts by their very nature are cumulative impacts. Thus, because the project would result in less than significant impacts related to the provision of fire services, police protection, school services, and public libraries, the project impacts would not be cumulatively considerable.	No mitigation is required.	Less Than Significant Impact.
4.14: Recreation		
Threshold 4.14.1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated **Less Than Significant Impact.** The proposed project would result in an increase in residents in the City, increasing the use of existing neighborhood and regional parks. However, the City will require the Applicant/Developer to pay fees and/or dedicate parkland as identified in Regulatory Compliance Measure REC-1. Therefore, the proposed project would not result in a substantial increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of any such facility would occur or be accelerated, and the proposed project's impact would be less than significant, and no mitigation is required.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measure would be required to reduce impacts on parks and recreational facilities. **Regulatory Compliance Measure REC-1:** **Dedication of Parkland and/or Payment of Park Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof of compliance with the applicable provisions of Chapter 25 (Subdivisions), Article 6, Park and Recreational Facilities, of the City of Cypress Municipal Code to the Director of the City of Cypress Community Development Department, or designee.	Less Than Significant Impact.
Threshold 4.14.2: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment **Less Than Significant Impact.** The proposed project includes the construction of recreational facilities available to residents and their guests. The potential adverse effects associated with the construction and operation of the proposed project's recreational facilities has been considered throughout the analysis in this Environmental Impact Report and mitigated as appropriate. Additionally, the Applicant/Developer is required by the City to pay in-lieu park fees as required by Regulatory Compliance Measure REC-1. Therefore, impacts related to the construction or expansion of recreational facilities included as part of the proposed project would be less than significant and no mitigation is required.	No mitigation is required. Refer to Regulatory Compliance Measure REC-1 above.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Cumulative Recreation Impacts. **Less Than Significant Impact.** The proposed project, in conjunction with the related projects in the City, has the potential to increase demand on the City's recreational resources. However, the related projects would also be subject to Municipal Code requirements for the provision of parkland and/or payment of in-lieu fees. Therefore, the cumulative impact of the proposed project and the applicable related projects would be less than significant with respect to recreational facilities.	No mitigation is required. Refer to Regulatory Compliance Measure REC-1 above.	Less Than Significant Impact.
4.15: Transportation		
Threshold 4.15.1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? **Less Than Significant Impact.** The proposed project would be required to comply with General Plan policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The proposed project would also be required to comply with the City's transportation-related goals, policies, and metrics for determining traffic impacts, as well as the Orange County Congestion Management Program (CMP) (2019). A trip generation analysis was conducted to determine the number of trips that would occur following implementation of the project. The project has the potential to generate approximately 4,978 average daily trips (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. Project impacts are based on LOS significance criteria for the City of Cypress (for Cypress intersections) and the City of Los Alamitos (for Los Alamitos intersections). Vehicle access to the project site will be provided via Siboney Street, Winners Circle, and a right-turn-in/out-only driveway directly on Katella Avenue. Both intersections of Siboney Street/Katella Avenue and Winners Circle/Katella Avenue are analyzed as study intersections in the TIA, and would operate at LOS B or better during both peak hours in the Existing Plus Project and Opening Year Plus Project Conditions. As such, the proposed project would not conflict with applicable provisions in the City's General Plan Circulation Element regarding the maintenance of a safe, efficient, economical, and aesthetically pleasing transportation system providing for the movement of people, goods, and services to serve the existing and future needs of the City of Cypress. Additionally, the proposed project would be consistent with all relevant goals included in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy regarding transit and active transportation. **Conformance with the Orange County CMP.** As previously noted, a TIA is required for CMP purposes for any proposed development generating 2,400 or more daily trips, with the exception of developments that will directly access a CMP Highway System roadway segment, for which the threshold for requiring a TIA is reduced to 1,600 or more trips per day. Because the proposed project is estimated to generate 4,978 daily trips, a TIA was prepared for the proposed project in compliance with CMP standards. 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 traffic study area boundaries based on the distribution of project trips throughout the traffic study area. Therefore, the traffic 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.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.15.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? **Less Than Significant Impact.** According to *State CEQA Guidelines* Section 15064.3(a), project-related transportation impacts are generally best measured by evaluating the project's vehicle miles traveled (VMT). VMT refers to the amount and distance of automobile travel attributable to a project. At this time, the City has not adopted a methodology to analyze VMT impacts within its jurisdiction. In addition, the City does not currently have thresholds or standards in place for assessing potential VMT impacts. Therefore, traffic impacts in this Draft EIR are based on the City's LOS thresholds and the analysis provided under Threshold 4.15.1, above.	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.15.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **Less Than Significant Impact.** As discussed in Chapter 3.0, Project Description, the proposed project does not propose any major traffic infrastructure improvements. In addition, as described in Section 4.10, Land Use and Planning, the project would not include any land uses that would be incompatible with surrounding uses. The proposed project would generate a similar vehicle mix to other surrounding land uses, consisting primarily of single-occupancy vehicles and distribution trucks. Additionally, all new driveways at the project site would be subject to the provisions of the City of Cypress design standards to alleviate design feature and safety hazards, which would reduce any potential impacts to less than significant levels. Therefore, the proposed project's impacts would be less than significant. No mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.15.4: Result in inadequate emergency access? **Less Than Significant Impact.** The project site would be accessed 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. As discussed above under Threshold 4.15.3, the project driveways will be designed to conform to the City's standards. Therefore, the project's impacts associated with emergency access would be less than significant. No mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Cumulative Transportation Impacts. **Less Than Significant Impact.** According to the Applicant/Developer, the project will open in 2021. To develop a Year 2021 condition, an ambient growth rate of 0.5 percent per year (i.e., 1.5 percent total growth for 3 years) was applied to the existing traffic counts. This condition also included the proposed project trips. 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 in the project vicinity. Cumulative peak hour LOS analysis for the study area intersections. The addition of the proposed 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.	No mitigation is required.	Less Than Significant Impact.
4.16: Tribal Cultural Resources		
Threshold 4.16.1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? **No Impact.** A cultural resources record search was completed on January 9, 2020, at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) at California State University, Fullerton. Additionally, Native American consultations were conducted in compliance with SB 18 and AB 52. As part of these consultations, review of the SLF by the NAHC yielded negative results. No information regarding specific known tribal cultural resources on the project site was provided by the Tribe. Therefore, no tribal cultural resources listed or eligible for listing in the California Register or in a local register exist within the project area, and there are no known tribal cultural resources on the project site. The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource defined as a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register or in a local register of historical resources as defined in PRC Section 5020.1(k), and no mitigation is required.	No mitigation is required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
Threshold 4.16.2: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. **Less than Significant with Mitigation Incorporated.** Native American consultation was conducted in compliance with SB 18 and AB 52. During that process, the Gabrieleno Band of Mission Indians – Kizh Nation (Tribe) stated that the project site is within their tribal territory and requested consultation with the Lead Agency. During a phone consultation meeting with the City, Chairperson Andrew Salas provided the City with the history of his Tribe and the context in which its members lived in the area, and he indicated specific areas that were prehistoric travel routes for the Tribe. Due to concerns regarding the lack of historical development on the project site and the level of fill, the Tribe sent the City proposed mitigation measures for tribal cultural resources. The City received the Tribe's proposed mitigation measures. The Tribe's recommendations have been incorporated into mitigation measures for the proposed project. Adherence to regulatory standards included in Regulatory Compliance Measure CUL-1 would reduce the impact of the proposed project on human remains to less than significant and addresses tribal concerns regarding the treatment of human remains. Mitigation Measure TCR-1 requires the retention of a Gabrieleno Native American Tribal representative to monitor specified ground-disturbing construction and cultural awareness training requirements. With the implementation of Regulatory Compliance Measure CUL-1 and Mitigation Measure TCR-1, impacts would be less than significant.	Refer to Regulatory Compliance Measure CUL-1, which is provided above in Section 4.4, 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 associated with pad grading of Retail Building C (the northernmost retail building proposed directly to the west of Winners Circle) and 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.	
4.17: Utilities and Service System		
Threshold 4.17.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? **Less Than Significant Impact.** The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, or electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. The proposed project would implement Regulatory Compliance Measures UTIL-1 through UTIL-3. With adherence to these Regulatory Compliance Measures, the proposed project would result in less than significant impacts related to these facilities. No mitigation is required.	No mitigation is required. Refer to Regulatory Compliance Measures HYD-1 and HYD-3, which are provided above in Section 4.9, Hydrology and Water Quality, and Regulatory Compliance Measure E-1, which is provided above in Section 4.5, Energy. In addition, although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measures would be required to reduce utility impacts. **Regulatory Compliance Measure UTIL-1:** **Sewer Improvement Standards.** All required sewer improvements shall be designed and constructed to City and OCSD standards and shall be approved by the City Engineer prior to development. These improvements may be constructed in a phased sequence depending upon the development process. Facilities shall be dedicated to the City and/or OCSD at the completion of construction. **Regulatory Compliance Measure UTIL-2:** **Drainage Improvement Standards.** Drainage system improvements shall be designed and constructed to City and OCFCD standards, if applicable, and will be approved by those agencies prior to development. Improvements may be constructed in a phased sequence depending	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measure, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	upon the development process. Facilities shall be dedicated to the City at completion of construction to the extent required by the City. (Source: Mitigation Measure No. 64, page 151, Cypress Business and Professional Center Specific Plan EIR.) **Regulatory Compliance Measure UTIL-3:** **Water Conservation.** The Applicant/Developer shall comply with all State laws for water conservation measures and use of reclaimed water. Voluntary water conservation strategies shall be encouraged. The Building Division shall determine compliance prior to issuance of building permits. (Source: Mitigation Measure No 75, pages 157 and 158, Cypress Business and Professional Center Specific Plan EIR).	
Threshold 4.17.2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? **Less Than Significant Impact.** The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years with the implementation of Regulatory Compliance Measure UTIL-4. Therefore, with implementation of Regulatory Compliance Measure UTIL-3, impacts to water supplies would be less than significant. No mitigation is required.	No mitigation is required. Refer to Regulatory Compliance Measure UTIL-3, which is provided above.	Less Than Significant Impact.
Threshold 4.17.3: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? **Less Than Significant Impact.** The proposed project would not result in a significant contribution to the capacity of wastewater treatment facilities. Additionally, fees required by the Orange County Sanitation District (OCSD) would sufficiently offset potential impacts generated by the proposed project. Therefore, the proposed project would result in less than significant impacts related to the wastewater treatment capacity and no mitigation measures are required	No mitigation is required.	Less Than Significant Impact.
Threshold 4.17.4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? **Less Than Significant Impact.** The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Therefore, the proposed project would result in less than significant impacts related to solid waste and landfill facilities, and no mitigation is required.	No mitigation is required.	Less Than Significant Impact.
Threshold 4.17.5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? **Less Than Significant Impact.** The proposed project would comply with applicable regulations related to solid waste. Therefore, the proposed project would not result in any potential conflicts with applicable regulations related to solid waste with adherence to Regulatory Compliance Measure UTIL-4. No mitigation is required.	No mitigation is required. Although project-related impacts would be less than significant, incorporation of the following Regulatory Compliance Measure would be required to reduce utility impacts. **Regulatory Compliance Measure UTIL-4:** **Construction and Demolition Ordinance.** The Construction Contractor shall comply with the provisions of City Ordinance No. 1166 and the 2016 California Green Building Standards Code, which would reduce construction and demolition waste. Ordinance No. 1166 is codified in Article VIII, Materials Questionnaire for Certain Construction and Demolition Project within the City of Cypress in the City of Cypress Municipal Code.	Less Than Significant Impact.
Cumulative Utilities and Service Systems Impacts. **Less Than Significant Impact.** The proposed project's potential impacts to wastewater, portable water, solid waste, electricity, natural gas, and telecommunications services are not cumulatively considerable.	No mitigation is required.	Less Than Significant Impact.

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2.0 INTRODUCTION

This Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the proposed Cypress City Center Project (proposed project) in Cypress, California. The City of Cypress (City) is the "public agency which has the principal responsibility for carrying out or approving the project"[1] and, as such, is the "Lead Agency" for the proposed project under the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.). CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action on the proposed project. This EIR is intended to serve as an informational document to be considered by the City and any Responsible Agencies during deliberations on the proposed project. CEQA Section 21069 defines a "Responsible Agency" as a public agency other than the Lead Agency that has responsibility for carrying out or approving a project. The approvals and permits associated with the proposed project are described in Chapter 3.0, Project Description.

The City, as Lead Agency, determined that the proposed project may have a significant effect on the environment and that an EIR would be required to more fully evaluate potential adverse environmental impacts that may result from development of the proposed project. As a result, this EIR has been prepared in accordance with CEQA and the *State CEQA Guidelines* (California Code of Regulations [CCR], Title 14, Section 15000 et seq.). This EIR also complies with the procedures established by the City for the implementation of CEQA.

Questions regarding the preparation of this document and City review of the proposed project should be referred to the following person:

Jeff Zwack, Project Planner
City of Cypress Community Development Department
5275 Orange Avenue
Cypress, CA 90630
Phone: (714) 229-6720
Email: projectplanner@cypressca.org

2.1 PURPOSE AND TYPE OF EIR/USES OF THE EIR

This EIR has been prepared to evaluate potential environmental impacts that could result from implementation of the proposed project. As the Lead Agency, the City has the principal responsibility for approving the proposed project. In that capacity, the City has decided to prepare this EIR and, after the public review process, will decide whether to certify the Final EIR.

The City and any Responsible Agencies have the authority to make decisions on discretionary actions relating to development of the proposed project. As stated previously, this EIR is intended to serve as an informational document to be considered by the City and Responsible Agencies during deliberations on the proposed project. This EIR evaluates a reasonable worst-case scenario of potential impacts associated with the proposed project and identifies feasible mitigation and alternatives for any identified potentially significant impacts.

[1] As defined in Public Resources Code Section 21067.

This EIR will serve as a project EIR pursuant to *State CEQA Guidelines* Section 15161. According to Section 15161 of the *State CEQA Guidelines*, a project EIR is appropriate for specific development projects and should examine the environmental impacts that could result from all phases of the project, including planning, construction, and operation.

As the Lead Agency for the proposed project under CEQA, the City must consider the information contained in the Final EIR prior to taking any discretionary action with respect to the proposed project. This EIR provides information to the Lead Agency and other public agencies, the general public, and decision-makers regarding the potential environmental impacts from construction and operation of the proposed project. The purpose of the public review of this EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with CEQA. *State CEQA Guidelines* §15151 states the following regarding the standards from which adequacy is judged:

> "An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have not looked for perfection but for adequacy, completeness, and a good faith effort at full disclosure."

Public Resources Code Section 21002.1(a) states:

> "The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided."

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the *State CEQA Guidelines* and provides the information needed to assess the environmental consequences of a proposed project. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

2.2 PUBLIC REVIEW PROCESS

In compliance with CEQA and the *State CEQA Guidelines,* the City has taken steps to promote opportunities for the public and other public agencies to participate in the environmental review process. The City conducted the scoping process, issued a Notice of Preparation (NOP), and determined that an EIR was required to evaluate the potentially significant environmental effects of the proposed project and related actions. Additionally, a public scoping session was conducted, as discussed below.

2.2.1 Notice of Preparation/Scoping Meeting

On November 22, 2019, an NOP for the proposed project was distributed by the City via the State Clearinghouse (SCH) and was circulated for review from November 22 to December 23, 2019. The

SCH issued a project number for this EIR (SCH No. 2019110458). In accordance with *State CEQA Guidelines* Section 15082, the NOP was circulated to the agencies and individuals that were provided in Appendix A, and was posted at the Orange County Clerk's Office for a period of 30 days, during which time written comments were solicited pertaining to environmental issues/topics that this EIR should evaluate. The NOP was also made available for public review at the City's Planning Department and on the City's website during the review period. The City held a public scoping meeting at the Cypress Community Center on Wednesday, December 11, 2019, to present the proposed project and to solicit input from interested parties regarding environmental issues that should be addressed in this EIR.

Responses to the NOP were received from the following agencies:

- City of Los Alamitos
- California Department of Transportation (Caltrans District 12)
- Governor's Office of Planning and Research, State Clearinghouse
- Native American Heritage Commission (NAHC)
- Orange County Transportation Authority (OCTA)
- South Coast Air Quality Management District (SCAQMD)

In addition, the following organizations and interested parties submitted written comments on the NOP:

- Angie Mizrahi
- Bill Wostenberg
- Brent Marino
- Brooke Nafarrete
- Carlo Nafarrete
- Christine Scheichl
- Clyde Schechter
- Cynthia O'Malley
- Deanna and Alex Borodayko
- Donna Ballard
- George Pardon
- Heidi Butcher
- Howard Nista
- Jane Lench
- Jimmy Fuller
- Joe and Judy Yenawine
- Jon and Yolie Miasnik
- Lector and Carolyn Orrick
- Leo Friedland
- Linda Lawrence
- Linda Zimmerman
- Lynn Pardon
- Marcela Valencia
- Melody Nista
- Millage House, Jr.
- Peter Korody
- Rincon Band of Luiseño Indians
- Robin and Larry Itzler
- Shaunna Hargrave
- Star Johnson
- Steven Mauss
- TR Maccauley
- Tracy Mackey
- Trisha Ovabuena
- Wayne M. Comeau
- Wayne Yenawine
- William Hutchins
- Yvette and Louis Krebs

2.2.2 Areas of Controversy

Issues and concerns raised in response to the NOP or at the scoping meeting included:

- **Traffic:** Concerns about additional traffic in the Cities of Cypress and Los Alamitos, specifically on Katella Avenue, north of Katella Avenue in the vicinity of existing schools, intersections along Katella Avenue, Walker Street, and Lexington Drive, and specific intersections (Katella Avenue/ Los Alamitos Boulevard, Katella Avenue/I-605, Valley View Street/I-405). Concerns about traffic on Katella Avenue during peak hours and about additional traffic generated by students. Request to evaluate the potential traffic impacts on Katella Avenue due to its inclusion as part of the Congestion Management Program Highway System. Request that the City of Cypress work with the City of Los Alamitos to establish a mitigation fee program designed to pay for the future maintenance of Katella Avenue within the City of Los Alamitos.

- **Population and Housing:** Concerns about the lack of affordable housing in the City and about overpopulation in the City. Concerns about the population generation from the proposed apartment, hotel, retail, and commercial uses. Suggestion that higher household sizes should be considered in the analysis because higher rents in Orange County are leading to the overcrowding of residential units.

- **Noise:** Suggestion about adding landscaping along all sides of the property to reduce noise on the project site from surrounding sources and general concern about noise impacts.

- **Aesthetics:** Concerns about the height of the four-story apartment structure. Concern that the residential structure and parking garage would not be aesthetically representative of the City. Concern about off-site blighted retail buildings and off-site City maintenance of buildings.

- **Land Use:** Opposition to zoning changes to allow residential uses on the project site. Concerns related to the density of the residential structure and zoning changes to allow residential uses and higher density development. Suggestion that the residential structure be moved to the Winners Circle side of the project site. Concerns that parking will be underprovided.

- **Air Quality:** Concerns about air quality impacts from the proposed project and from increased traffic on Katella Avenue. Suggestions to adhere to guidelines from the SCAQMD and its Air Quality Handbook and recommendations on the identification of mitigation measures, alternatives, permits, and appropriate data sources.

- **Alternatives:** Suggestions to evaluate a reduced density alternative, and alternatives with the replacement of the apartment structure with a family-friendly entertainment center, a high-end grocery store, or senior apartments. Suggests an alternative with a decrease height of the residential structure to two stories and the elimination of the parking garage.

- **Hydrology:** Concern was raised about existing ponding along Siboney Street and on the project site. Requested that drainage facilities convey stormwater so as not to result in ponding on the Los Alamitos Racetrack property to the north.

- **Public Services:** Concern that schools in the City cannot accommodate students generated by the proposed project. Concern about increased demand for fire, police, library, emergency services, school, and park facilities/services. Concern about impacts on emergency services from traffic impacts on Katella Avenue.

- **Recreation:** Suggestions that parkland/public parks be provided on the project site. Concern about the amount of green space in the City and about impacts on existing parks.

- **Utilities and Service Systems:** Concern about increases in energy demand. Concern about added load to the power grid and water supply.

This is not an exhaustive list of areas of controversy, but rather key issues that were raised during the scoping process. This EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures and/or alternatives designed to reduce or eliminate potentially significant impacts. Appendix A to this EIR includes the NOP and copies of written comments received in response to the NOP, as well as written comment cards received at the public scoping meeting. Appendix A also includes a comment summary.

2.2.3 EIR Public Review Period

This EIR is being distributed to numerous public agencies and other interested parties for review and comment. This EIR is also available at the following locations and on the City's website for the proposed project (add website location):

City of Cypress
Community Development Department
5275 Orange Avenue
Cypress, CA 90630

Cypress Branch Library
5331 Orange Avenue
Cypress, CA 90630

All comments received from agencies and individuals on this EIR will be accepted during the public comment period, which will not be less than 45 days, in compliance with CEQA and *the State CEQA Guidelines*. All comments on this EIR should be sent to the following City contact person:

Jeff Zwack, Project Planner
City of Cypress Community Development Department
5275 Orange Avenue
Cypress, CA 90630
Email: projectplanner@cypressca.org

Following the close of the public comment period, the City will prepare written responses to all written comments received during the public comment period and will compile these comments and responses, together with any text changes to this EIR, into a Final EIR that includes all of the information required pursuant to *State CEQA Guidelines* Section 15132. The Final EIR will be provided to all public agencies that submitted comments on this EIR at least 10 days prior to certification of the Final EIR. The Final EIR shall consist of the EIR or a revision of the draft;

comments and recommendations received on the EIR either verbatim or in summary; a list of persons, organizations, and public agencies commenting on the EIR; the response of the City to significant environmental points raised in the review and consultation process and in comments submitted on the Draft EIR; and any other information added by the City.

The City will make findings regarding the extent and nature of the impacts as presented in the Final EIR. The Final EIR must be certified as complete by the City Council prior to making a decision on the requested entitlements for the proposed project. Public input is encouraged at all public hearings regarding the proposed project.

2.3 SCOPE OF THIS EIR

As required by *State CEQA Guidelines* Section 15128, this EIR must identify the effects of the proposed project that are determined to be significant. Environmental topics addressed in this EIR include: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Energy, Geology and Soils and Paleontological Resources; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Noise; Population and Housing; Public Services; Recreation; Transportation and Traffic; Tribal Cultural Resources; and Utilities and Service Systems.

2.4 FORMAT OF THE EIR

This EIR contains the information and analysis required by CEQA and the *State CEQA Guidelines,* including Section 15122–15131, and is generally organized as follows:

- **Chapter 1.0: Executive Summary.** Chapter 1.0 contains the Executive Summary of this EIR, which lists all significant project impacts, feasible mitigation measures that have been recommended to reduce any significant impacts of the proposed project, and the level of significance of each impact following feasible mitigation. The summary is presented in a table format.

- **Chapter 2.0: Introduction.** Chapter 2.0 contains a discussion of the purpose and intended use of this EIR.

- **Chapter 3.0: Project Description.** Chapter 3.0 includes a discussion of the proposed project's geographical setting, the project site's previous uses and approvals, and the proposed project's objectives, characteristics, components, and construction phases, as well as the anticipated discretionary and ministerial permits and approvals for the proposed project.

- **Chapter 4.0: Environmental Impact Analysis.** Chapter 4.0 includes an analysis of the proposed project's environmental impacts. It is organized into the following topical sections: aesthetics, air quality, biological resources, cultural resources, 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 system. The environmental setting discussions describe the "existing conditions" of the environment on the project site and in the vicinity of

the site as they pertain to the environmental issues being analyzed (*State CEQA Guidelines §*15125).

The impact discussions identify and focus on the potentially significant environmental effects of the proposed project. The direct and indirect effects of the proposed project on the environment are identified and described, giving due consideration to both the short-term and long-term effects, as necessary (*State CEQA Guidelines* §15126.2[a]).

Chapter 4.0 also includes within the analysis of each environmental topic a discussion of the cumulative effects of the proposed project when considered in combination with other projects causing related impacts, as required by *State CEQA Guidelines §*15130*.* Cumulative impacts are based on the build out of the proposed project and the known relevant approved and proposed projects in the surrounding area.

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen potentially significant impacts for each significant environmental effect identified in this EIR (*State CEQA Guidelines* §15126[e]). The levels of significance before and after mitigation are provided. Significant unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to less than significant levels.

- **Chapter 5.0: Alternatives to the Proposed Project.** In accordance with CEQA, the alternatives discussion in Chapter 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the proposed project and are capable of eliminating or substantially reducing any of the proposed project's significant unavoidable adverse environmental effects or reducing them to a less than significant level. The alternatives analyzed in Chapter 5.0 include three alternatives: (1) the No Project Alternative, (2) the Reduced Project Alternative, and (3) the Commercial/Retail Alternative.

- **Chapter 6.0: Other CEQA Considerations.** Chapter 6.0 contains discussions on the following topics as required by *State CEQA Guidelines* §15126: (1) growth-inducing impacts of the proposed project; and (2) whether there are any significant irreversible environmental changes caused by the proposed project, adverse environmental impacts associated with the proposed project for which either no mitigation or only partial mitigation is feasible.

- **Chapter 7.0: Mitigation Monitoring and Reporting Program.** *State CEQA Guidelines* §15091(d) requires that public agencies adopt a mitigation monitoring and reporting program for any changes that it has either required in a project or made a condition of approval to avoid or substantially lessen significant environmental effects. Chapter 7.0 provides a list of all proposed project mitigation measures, defines the parties responsible for implementation and review/, and identifies the timing for implementation of each mitigation measure.

- **Chapter 8.0: Significant Unavoidable Impacts.** Chapter 8.0 summarizes the significant unavoidable adverse impacts that cannot be avoided or mitigated identified in Chapters 4.0 and 6.0.

- **Chapter 9.0: List of Preparers.** Chapter 9.0 provides the organizations and persons contacted during preparation of this EIR, the EIR preparers and technical report authors, and other experts involved in the preparation of this EIR.

- **Chapter 10.0: References.** Chapter 10.0 provides the references used in this EIR.

2.5 INCORPORATION BY REFERENCE

An EIR may incorporate by reference all or portions of another document that is a matter of public record or is generally available to the public, consistent with *State CEQA Guidelines* §15150. Informational details from the documents that have been incorporated by reference are summarized in the appropriate sections of this EIR, along with descriptions regarding how the public may review these documents. All documents are available for review at the City of Cypress, Community Development Department. These documents include:

- City of Cypress General Plan (available online at: https://www.cypressca.org/government/departments/community-development/planning-division/city-plans)

- City of Cypress Municipal Code (available online at: https://qcode.us/codes/cypress/)

- Proposed Cypress Business and Professional Center Specific Plan Amendment

3.0 PROJECT DESCRIPTION

The Cypress City Center Project (proposed project) proposes the development of a horizontal mixed-use development on an approximately 13-acre site (project site) at the northwest corner of Katella Avenue and Winners Circle, which is a vacant property previously planned and entitled for the development of a retail commercial project in 2008.

3.1 PROJECT/SITE HISTORY

In 2008, an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the project site. At the time of the adoption of the 2008 IS/MND for the project site, the property was owned by the Cypress Redevelopment Agency (Agency), which was negotiating with a developer to construct a previously approved project. However, the developer did not complete the purchase of the property from the Agency. In 2011, the City of Cypress (City) acquired the project site from the Agency and the development of the project site was then postponed due to litigation between the City and the State, which was subsequently resolved.

There have been numerous prior approved environmental documents that have some relationship to the project site and/or the Cypress Business and Professional Center Specific Plan (Approved April 17, 1990, Amended and Restated June 5, 2012) area in which the project site is located. These prior environmental documents include the following:

3.1.1 Previous Environmental Reviews

The following projects were reviewed by the City prior to approval of the Cypress Business and Professional Center Specific Plan:

- **Cypress Plaza Environmental Impact Report (1986).** Environmental study for the race track and surrounding area (approximately 300 acres) began with the Cypress Plaza EIR, certified in September 1986. The Cypress Plaza project area is the same as the area covered by the Cypress Business and Professional Center Specific Plan described above. This EIR covered the development of 3,720,892 sf of business park, mixed-use business park, professional office, hotel and support commercial, general retail commercial, roadway use, and shared race track parking.
- **Cypress Downs Supplemental Environmental Impact Report (1988).** In 1988, a revised project known as Cypress Downs was proposed by SDC Development for 2,909,208 sf of building area. The Cypress Downs project area is the same as the area covered by the Cypress Business and Professional Center Specific Plan (described above) and the Cypress Plaza project (described above). The Supplemental EIR (supplemental to the Cypress Plaza EIR described above) for that project addressed the environmental impacts relative to changes in the project. These changes included a major reduction in the square footage of the project and retention of the Public/Semi-Public General Plan and zoning designation on approximately 30 acres of the site. Due to these changes, the Supplemental EIR, certified on November 7, 1988, addressed issues that would be affected by the amended proposal.

3.1.2 Cypress Business and Professional Center Specific Plan Environmental Impact Report (April 1990)

Prior to the approval of the Amended and Restated Cypress Business and Professional Center Specific Plan (Specific Plan) in 2012, the Cypress Business and Professional Center Specific Plan, approved April 17, 1990, provided guidance and regulations for the development of the 298.2 gross acres within the planning area for the Specific Plan. The Specific Plan established development regulations and programs for plan implementation. The Specific Plan included a Land Use Plan (Specific Plan Exhibit 1), which proposed 11.8 acres of Mixed Use Business Park; 33.4 acres of Professional Office, 21.2 acres of Professional Office and Hotel and Support Commercial uses, 8.2 acres of Mixed Use Business Park/General Retail Commercial, 93.6 acres of renovated golf course, and 130 acres of existing race track within the Specific Plan planning area by establishing policies and zoning designations for the land subject to the Specific Plan.

The Cypress Business and Professional Center Specific Plan EIR analyzed the impacts associated with buildout of the Specific Plan area with the uses identified in the following paragraph. The Cypress Business and Professional Center Specific Plan was divided into eight planning areas. The former Cypress Golf Club property comprises Planning Areas 1 and 7. In addition to the revitalization of the now closed golf course, the Specific Plan proposed the development of a clubhouse, with banquet halls and a driving range. Planning Area 2 (8.2 acres) was proposed for the development of 135,736 sf of Mixed Use Business Park and/or 25,000 sf of General Retail Commercial. Planning Area 3 (7.7 acres) and Planning Area 4 (4.1 acres) were proposed for the development of 150,935 sf and 89,000 sf of Mixed Use Business Park, respectively. Planning Area 5, which includes the project site, is composed of 33.4 acres and was intended for the development of 873,000 sf of Professional Office use. An approximately 240,000 sf Hotel (100 to 300 rooms), and 20,000 sf of Restaurant uses and 294,083 sf of Professional Office uses were planned for Planning Area 6 (21.2 acres). The Los Alamitos Race Course in Planning Area 8 (124.7 acres) was proposed to be retained, although possibly revitalized or reconstructed.

The impacts identified below could not be feasibly mitigated and would result in significant and unavoidable impacts associated with implementation of the Cypress Business and Professional Center Specific Plan.

- **Circulation and Traffic.** The Specific Plan was expected to further aggravate some of the congestion problems projected to occur with future development within the Cypress Business Park, particularly affecting the intersections of Katella Avenue with Los Alamitos Boulevard, Bloomfield Avenue, Walker Street, and Valley View Street, and the intersection of Cerritos Avenue and Los Alamitos Boulevard. These intersections would fall below acceptable levels of service with the buildout of the Specific Plan and cumulative traffic after mitigation.

- **Land Use and Relevant Planning.** The Specific Plan would result in the conversion of the former golf course property to more intensive mixed-use/business park/commercial land uses, thereby increasing the urbanization of Cypress. In addition, traffic, noise, and air quality impacts associated with the Specific Plan would affect surrounding land uses.

- **Aesthetics.** Implementation of the Specific Plan would convert land uses within the planning area and would alter the aesthetic nature of the area by replacing open areas with structures, landscaping, and infrastructure.

- **Air Quality.** Construction dust related to the construction of the new development allowed under the Specific Plan, though partially mitigated through watering of grading surfaces, would result in some temporary unavoidable impacts. However, these impacts are not considered significant. The Specific Plan would contribute to cumulative degradation of regional air quality due to increased vehicular emissions.

The Cypress Business and Professional Center Specific Plan EIR was certified in May 1990, at which time it superseded the Cypress Downs EIR (described below). As part of the certification process for the Cypress Business and Professional Center Specific Plan EIR, the City Council adopted a Statement of Facts and Findings and a Statement of Overriding Considerations.

Development that has taken place within the Specific Plan since its adoption in 1990 includes the SeaCoast Grace Church, the 10801 Walker Street office building, the Ushio America office/ warehouse building, the Cypress Corporate Park (four office/manufacturing/warehouse buildings), the Marriott Residence Inn Hotel, the Katella/Siboney Commercial Project, the Walker/Katella Retail Project, and the Cottonwood Christian Center.

Projects approved under the 1990 Cypress Business and Professional Center Specific Plan include the following:

- **Walker/Katella Retail Project (Northwest Corner of Katella Avenue and Walker Street) Initial Study/Mitigated Negative Declaration (2002).** This IS/MND analyzed the owner participation opportunities for the development of a retail project that included three alternatives ranging from 150,000 to 180,000 sf of retail/commercial use. The 18-acre Walker/Katella Retail project site is on the northwest corner of Katella Avenue and Walker Street and is within Cypress Business and Professional Center Specific Plan Planning Area 5, directly east of the project site. This project has been approved, constructed, and is currently in operation.

- **Katella/Siboney Commercial Project Initial Study/Mitigated Negative Declaration (2003).** This IS/MND analyzed the proposed 31,100 sf of retail, 6,000 sf of restaurant and 37,000 sf of health club uses on a 7.08-acre site at the northwest corner of Katella Avenue and Siboney Street. The Katella/Siboney Commercial project site is within the Cypress Business and Professional Center Specific Plan Planning Area 6, directly west of the project site. The project is currently in operation.

- **Cottonwood Christian Center Initial Study/Mitigated Negative Declaration (2004).** This IS/MND describes existing environmental conditions on a 30-net-acre site at the northeast corner of Katella Avenue and Lexington Drive and the surrounding area. The project applicant, Cottonwood Christian Center, proposed to construct a new church campus. The Cottonwood Christian Center project site is within the Cypress Business and Professional Center Specific Plan Planning Area 7, west of the project site. This project has been approved, and the sanctuary, offices and youth and children's centers have been constructed.

- **13-Acre Retail/Commercial Project Northwest Corner Katella Avenue and Winners Circle Initial Study/Mitigated Negative Declaration (April 2008).** The 13-Acre Retail/Commercial Project Northwest Corner Katella Avenue and Winners Circle IS/MND was approved in April 2008. This IS/MND was prepared for the project site and evaluated three proposed alternatives: Alternatives A, B, and C, of which Alternative C was ultimately approved by the Cypress City Council. The project proposed the development of 122,556 sf of retail, 21,000 sf of retail/ restaurant uses, and a 9,353 sf sit-down restaurant. The proposed project was proposed on parcels of land within the planning area for the Cypress Business and Professional Center Specific Plan. The adopted 2008 IS/MND concluded that the project would result in less than significant environmental impacts with implementation of prescribed mitigation measures.

3.1.3 Cypress General Plan Environmental Impact Report (September 2001)

The Cypress General Plan Environmental Impact Report (EIR) was certified in September 2001. The General Plan EIR analyzed the potential environmental impacts of the City-wide maximum development scenario to avoid underestimation of long-term impacts. The maximum level of development results from construction of the greatest square footage and number of dwelling units and nonresidential land uses, respectively. The maximum development scenario causes the largest possible population to inhabit Cypress at buildout.

The Cypress General Plan EIR, a Program EIR, evaluated the impacts of implementing the General Plan, the consideration of broad policy alternatives, and program-wide mitigation measures. The Program EIR also determined when subsequent environmental review would be needed for a specific development proposal that is consistent with the General Plan Update.

The three impacts identified below could not be feasibly mitigated and would result in a significant and unavoidable impact associated with implementation of the General Plan Update. The General Plan EIR also concluded significant cumulative unavoidable impacts for the same three impact areas. The City Council adopted a Statement of Overriding Considerations for these impacts on September 10, 2001. Both the Statement of Overriding Considerations and the Statement of Facts and Findings are referenced in Resolution No. 5465.

1. **Transportation/Circulation (2000 Traffic Volumes, Congestion Management Program Level of Service Standards).** Development under the General Plan Update would create an unavoidable significant impact for one roadway segment: Knott Avenue from Cerritos Avenue to Katella Avenue. This roadway segment would remain at Level of Service (LOS) “F”.

2. **Air Quality (Construction Emissions, Vehicle Miles Traveled and Stationary Source Emissions).** Unavoidable and significant impacts to air quality relate to construction, mobile sources, and stationary sources. These impacts are primarily based on the premise that the City of Cypress and pollutant sources within the City are widely dispersed and numerous. Despite implementation of city-wide vehicular emission reducing programs, it is anticipated that these impacts would remain unavoidable and significant.

3. **Parks and Recreation.** Unavoidable and significant impacts to parks and recreation facilities are primarily based on the premise that the City currently falls short of meeting the acreage

requirements for park facilities. Implementation of the General Plan Update would enhance this deficiency.

3.1.4 Amended and Restated Cypress Business and Professional Center Specific Plan (June 2012)

This Specific Plan amends and restates the Original Specific Plan. In particular, it establishes a new Planning Area 9, which consists of portions of Planning Areas 6, 7, and 8 from the original Specific Plan (1990) and permits a range of commercial uses and senior housing and related uses. This amended and restated Specific Plan also clarifies that the former Cypress Golf Club property has not been retained and includes a variety of updated provisions and findings. No environmental review of the Amended and Restated Specific Plan was required because it was approved by the City's voters.

The following environmental reviews were completed for nearby projects within the Amended and Restated Cypress Business and Professional Center Specific Plan:

- **Barton Place Environmental Impact Report:** This EIR analyzed the potential environmental impacts of the proposed Barton Place Project, which proposed two main components: a senior residential community and commercial/retail uses at the northeast corner of Katella Avenue and Enterprise Drive. The Barton Place Project is within Cypress Business and Professional Center Specific Plan Planning Areas 6 and 9, which are west of the project site. The senior residential community was approved and constructed.
- **Barton Place Environmental Impact Report Addendum:** This EIR addendum analyzed the potential environmental impacts of project changes to reduce the amount of commercial development included on the southern portion of the Barton Place project site as part of the approved Barton Place project by approximately 34,000 sf. A 129-unit assisted living facility that would be a licensed residential care facility for the elderly would be built on the eastern half of the 5-acre area where the approved commercial/retail uses detailed in the Barton Place Final EIR would be located.

3.1.5 Cypress Town Center and Commons Specific Plan 2.0 (December 2017)

This Specific Plan establishes a master plan and regulatory framework for the use and development of 154.4 acres of land, which covers a portion of the Cypress Business and Professional Center Specific Plan area adjacent to the project site. On June 5, 2018, Cypress voters approved the Cypress Town Center and Commons Specific Plan 2.0. Although the Cypress Town Center and Commons Specific Plan 2.0 has been approved by Cypress voters, no California Environmental Quality Act (CEQA) compliance documentation has been completed for its proposed land use changes. As stated in the Cypress Town Center and Commons Specific Plan 2.0, "discretionary approvals for development projects proposed within the Specific Plan Area shall be subject to environmental review under CEQA, unless such development project is exempt from environmental review pursuant to the CEQA statute or the State CEQA Guidelines or to the extent that environmental review under CEQA has already been completed for such development project."

3.2 PROJECT LOCATION AND EXISTING ENVIRONMENTAL SETTING

3.2.1 Regional Location

The project site is in the southern portion of the City of Cypress, California, approximately 1 mile northwest of Garden Grove and immediately north of the Los Alamitos corporate boundary. The Los Alamitos Race Course is north of the project site. Various commercial, office, and business park uses are south of the project site. As illustrated by Figure 3.1, Regional and Project Location, the project site is approximately 2 miles east of the San Gabriel River Freeway (Interstate 605) and approximately 3 miles north of the Garden Grove Freeway (State Route 22) and the San Diego Freeway (Interstate 405).

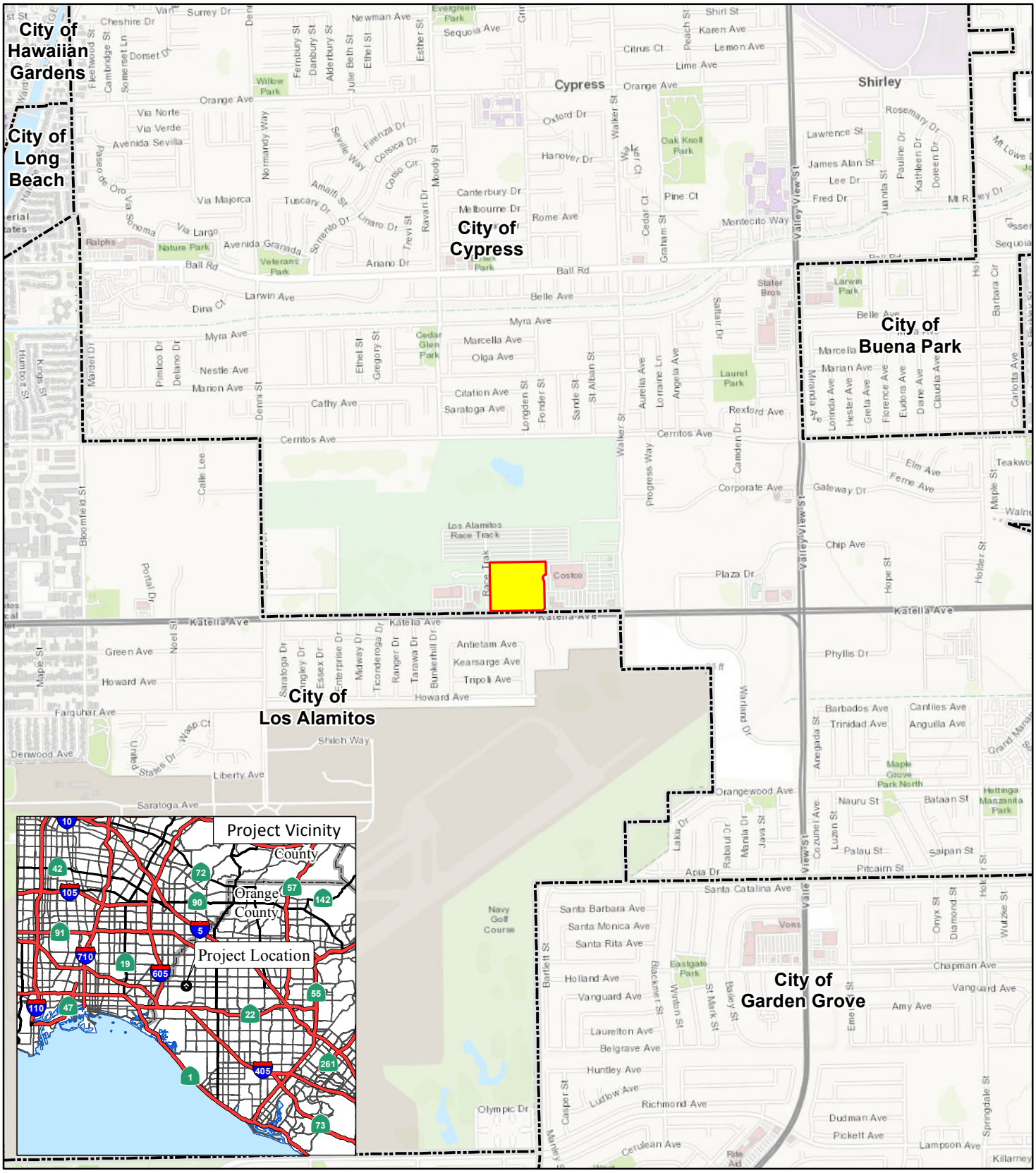
3.2.2 Existing Project Site Conditions

The project site is on the northwest corner of Katella Avenue and Winners Circle in Cypress (refer to Figure 3.2, Project Vicinity Land Uses). Figure 3.3, Existing Conditions, shows the existing conditions on the project site. In its existing setting, the project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines. A main water valve is within the current right-of-way along Siboney Street near the southwest corner of the project site. Sewer and storm drain infrastructure are also within the current right-of way along Katella Avenue. No lateral lines serve the project site. The edge condition along Katella Avenue and a portion of Siboney Street has been improved with a public sidewalk, fencing, and ornamental landscaping. There is also a billboard for the nearby Los Alamitos Race Course on the southwestern boundary of the project site. The edge condition along Winners Circle has been improved with a public sidewalk and driveway access points, with no landscaping. The interior property is improved with a parking lot and limited landscaping.

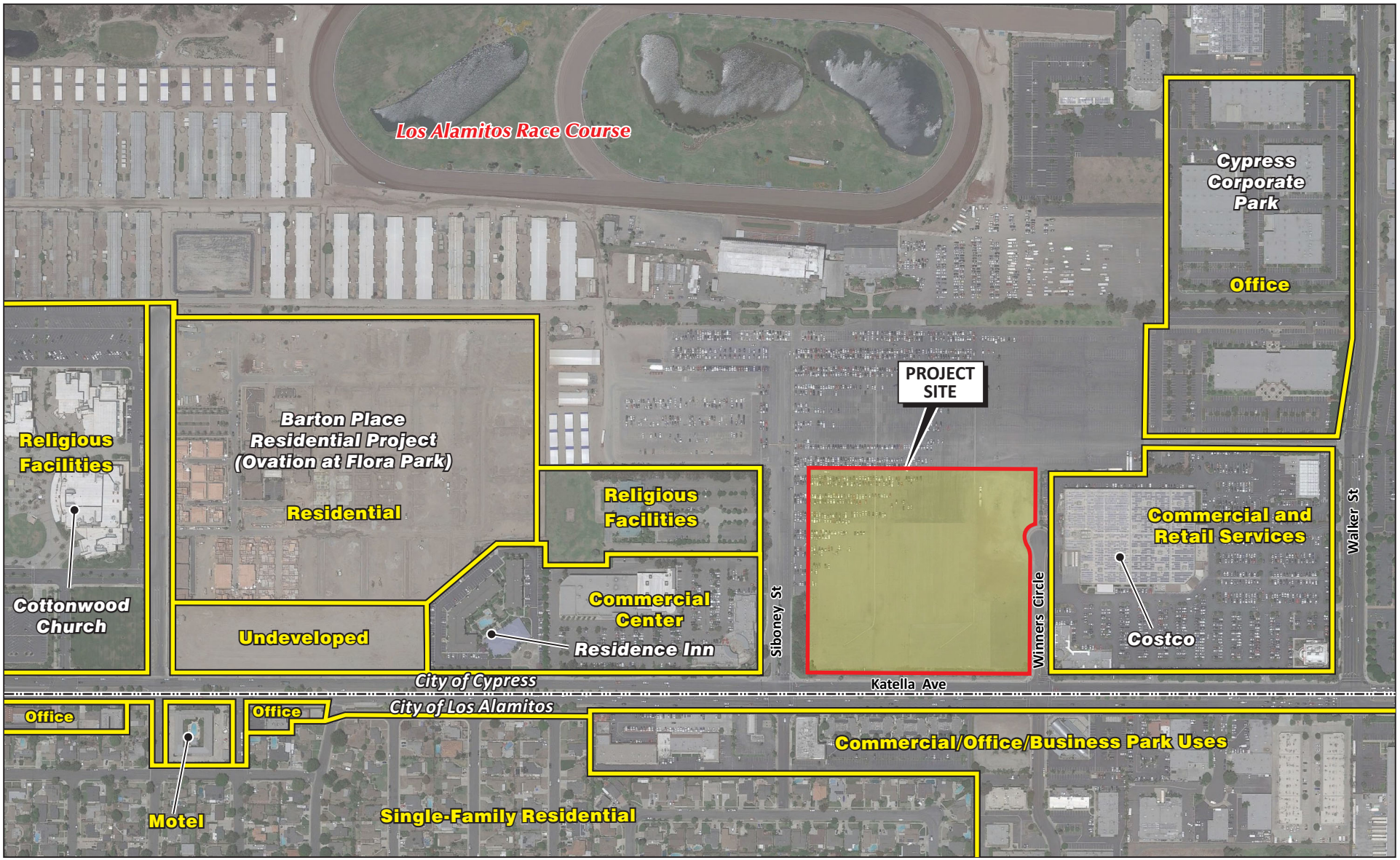
Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course. The existing parking lot rarely reaches capacity, except for during the Wiener Nationals dog racing event, which takes place annually in July. Other short-term uses include a Christmas tree lot and a truck staging area. Local businesses have leased the project site on a temporary basis from time to time for auxiliary truck and trailer storage.

3.2.3 Surrounding Land Uses

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. The land use plan from the Specific Plan is provided on Figure 3.4, Cypress Business & Professional Center Specific Plan Land Use Plan. As described above, land use designations within 154.4 acres of the Cypress Business & Professional Center Specific Plan were replaced and superseded by the Cypress Town Center and Commons Specific Plan 2.0, which was approved by Cypress voters in June 2018. Although Figure 3.4 shows the approximate area that was affected by approval of Cypress Town Center and Commons Specific Plan 2.0, it does not reflect the planned land uses within that Specific Plan.


City of Hawaiian Gardens
City of Long Beach
City of Cypress
City of Buena Park
City of Los Alamitos
City of Garden Grove
Cypress
Shirley
Project Vicinity
County
Orange County
Project Location
Los Alamitos Race Track
Costco
Katella Ave
Cerritos Ave
Ball Rd
Orange Ave
Valley View St
Beach Blvd
Navy Golf Course
Olympic Dr
Chapman Ave
Vanguard Ave
Amy Ave
Orangewood Ave
Plaza Dr
Corporate Ave
Gateway Dr
Howard Ave
Saratoga Ave
Liberty Ave
Shiloh Way
Derwood Ave
Farquhar Ave
Green Ave
Phyllis Dr
Chip Ave
Elm Ave
Ferne Ave
Rexford Ave
Montecito Way
Belle Ave
Marcella Ave
Olga Ave
Myra Ave
Larwin Ave
Dina Ct
Cathy Ave
Nestle Ave
Marion Ave
Citation Ave
Saratoga Ave
Antietam Ave
Kearsarge Ave
Tripoli Ave
Barbados Ave
Trinidad Ave
Cantiles Ave
Anguilla Ave
Nauru St
Bataan St
Palau St
Saipan St
Pitcairn St
Apia Dr
Santa Catalina Ave
Santa Barbara Ave
Santa Monica Ave
Santa Rita Ave
Holland Ave
Vanguard Ave
Laureltown Ave
Belgrave Ave
Huntley Ave
Richmond Ave
Ludlow Ave
Cerulean Ave
Dudman Ave
Pickett Ave
Lampson Ave
Killarney
Via Norte
Via Verde
Avenida Sevilla
Via Majorca
Via Largo
Avenida Granada
Ariano Dr
Canterbury Dr
Melbourne Dr
Rome Ave
Hanover Dr
Oxford Dr
Lawrence St
James Alan St
Lee Dr
Fred Dr
Pine Ct
Oak Knoll Park
Nature Park
Veterans Park
Ralphs
Stater Bros
Larwin Park
Laurel Park
Cedar Glen Park
Evergreen Park
Willow Park
Ball Park
Los Alamitos Race Track
Project Site
City Boundary
LEGEND
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1000
2000
FEET
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LSA
FIGURE 3.1
Cypress City Center
Regional and Project Location
SOURCE: ArcGIS Online Topographic Map
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LSA

LEGEND

- City Boundary

N

0 250 500

FEET

SOURCE: Google Earth

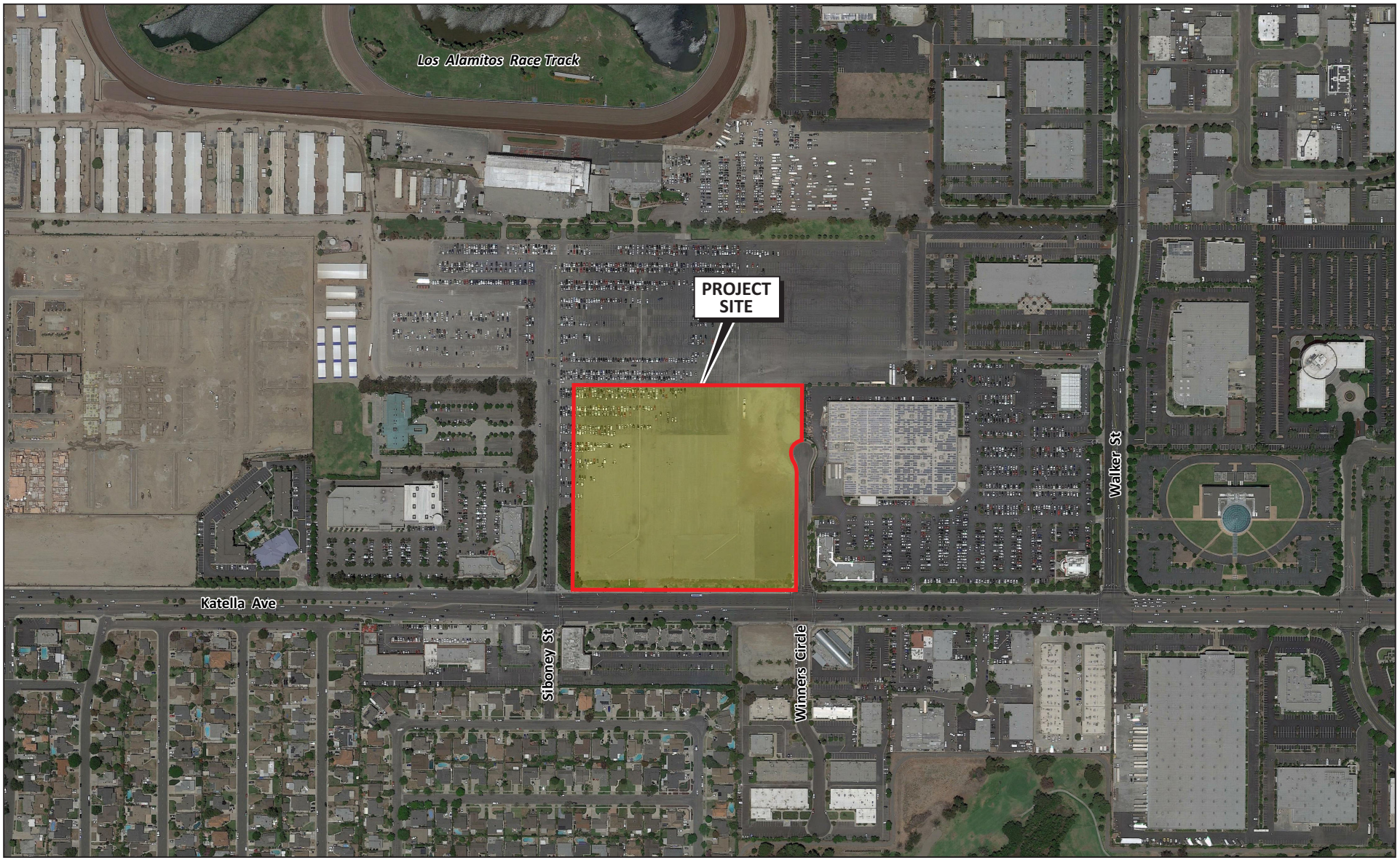
FIGURE 3.2

Cypress City Center

Project Vicinity Land Uses

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LSA

FIGURE 3.3

N

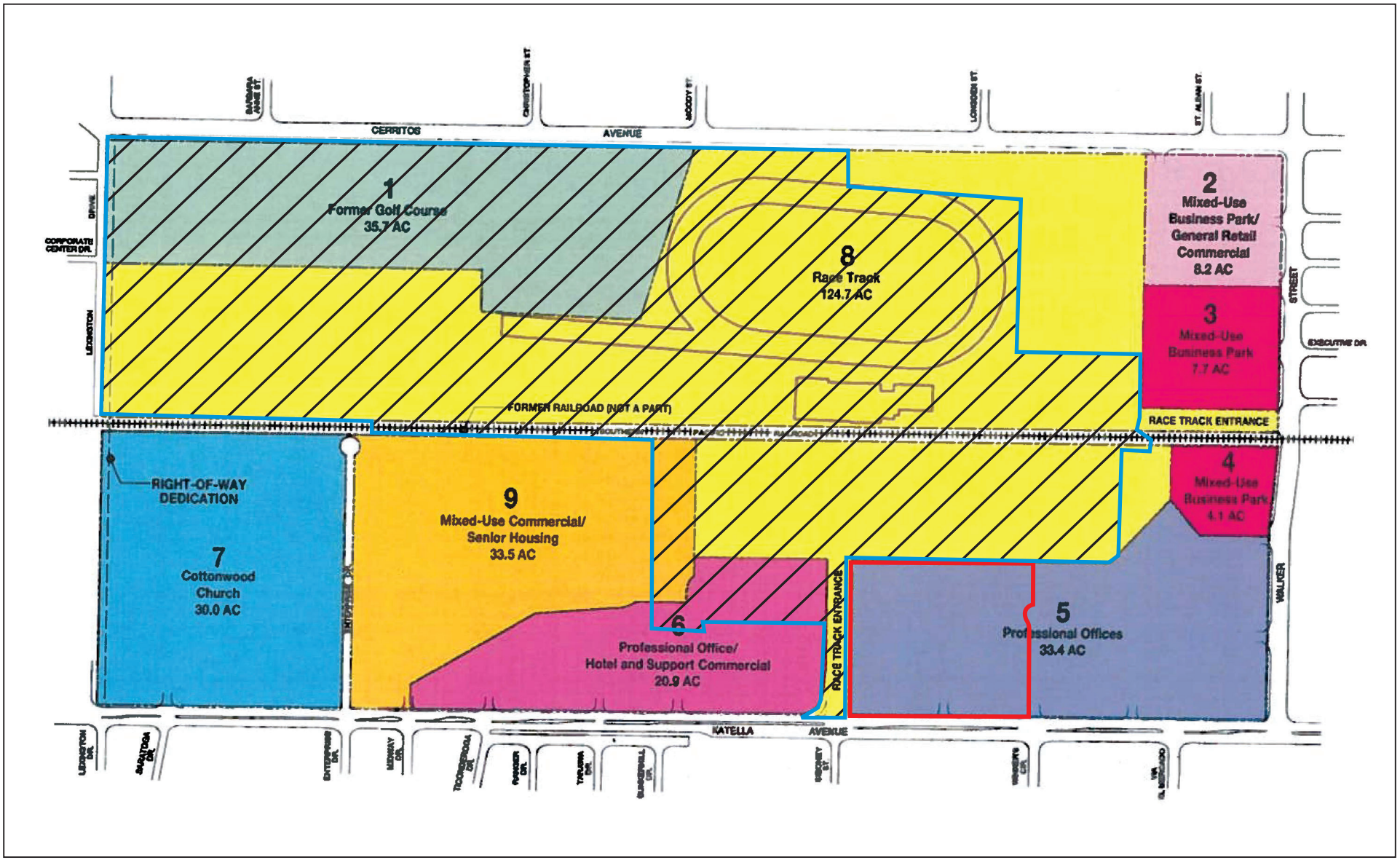
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SOURCE: Google Earth

Cypress City Center
Existing Conditions

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LSA

LEGEND

- Project Site

- Cypress Town Center and Commons Specific Plan 2.0

0 305 610

FEET

SOURCE: RBF

FIGURE 3.4

Cypress City Center

Cypress Business & Professional Center
Specific Plan Land Use Plan

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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. A number of projects have been developed within the Cypress Business and Professional Center Specific Plan area, which are identified below.

- The Los Alamitos Race Course and the SeaCoast Grace Church are to the north and northeast in Planning Area 8. A Goodwill Donation Center is also in the southeast portion of Planning Area 8.
- Cypress Business & Professional Center, a two-story office building, is to the northeast, in Planning Area 4.
- Approximately 165,000 sf of retail/commercial uses with a Costco warehouse outlet and other services is at the northwest corner of Katella Avenue/Walker Street, occupying the eastern half of Planning Area 5.
- Cypress Corporate Park is north of Vessels Circle and consists of four two-story office/ manufacturing/warehouse buildings to the northeast in Planning Area 3.
- Ushio America, a two-story office/warehouse building, is on the western portion of Planning Area 2 and a two-story medical office building is on the eastern half of Planning Area 2 at the southeast corner of Cerritos Avenue and Walker Street. Planning Area 2 is to the northeast of the project site.
- A Marriott Residence Inn is to the west in Planning Area 6.
- An approximately 74,100 sf retail/commercial center, with a 24 Hour Fitness Center, an Office Max, a Seventh-Day Adventist Church, and various restaurant and retail uses, is to the west in the southeastern portion of Planning Area 6.
- The Cottonwood Christian Center, a 30-acre site totaling 495,000 sf, is further west in Planning Area 7.
- Barton Place (now known as Ovation at Flora Park) is west of the project site in Planning Area 6 and Planning Area 9.

The project site is bounded by the following uses in its immediate vicinity:

- **North:** The Los Alamitos Race Course is immediately north of the project site in Planning Area 8. Northeast of the site is a Goodwill Donation Center, and Cypress Corporate Park.
- **East:** East of Winners Circle, commercial and retail services, including a Costco warehouse outlet and restaurant uses, occupy the eastern portion of Planning Area 5.
- **South:** Katella Avenue, a six-lane arterial roadway, borders the project site to the south. Uses to the south of Katella Avenue include commercial and office and business park uses in the City of Los Alamitos.
- **West:** A commercial center consisting of restaurant, commercial services, a 24 Hour Fitness and a Marriott Hotel are in Planning Area 6 to the west. The Barton Place Residential Project (now

known as Ovation at Flora Park) and the Seventh-Day Adventist Church are immediately west of the commercial center.

3.3 GENERAL PLAN, SPECIFIC PLAN AND ZONING

3.3.1 General Plan/Specific Plan

The Cypress General Plan Land Use Policy Map designates the project site as "Specific Plan Area" in recognition that the project site is subject to the Amended Cypress Business and Professional Center Specific Plan (Specific Plan) (Figure 3.5, City of Cypress General Plan Land Uses).[1] This Specific Plan includes a Land Use Plan, which divides land within the Specific Plan area into nine different planning areas (refer to Figure 3.4). As shown on Figure 3.4 and described above, portions of the Specific Plan (all of Planning Area 1, most of Planning Area 8, and a small part of Planning Area 6) are now subject to Cypress Town Center and Commons Specific Plan 2.0.

As stated previously, the project site is part of Planning Area 5, which is designated for Professional Office uses. The Professional Office designation is intended to accommodate the development of professional and administrative offices that complement the adjacent hotel center within the Specific Plan area. Permitted uses within this land use designation include a variety of office, studio, financial institutions, governmental, corporate, employment, and health service uses. Uses permitted subject to a conditional use permit include commercial, trade or vocational schools, restaurant, service stations, post offices, and other similar uses that the Community Development Director finds to be compatible with these uses, subject to review or approval by the City Council. Planning Area 8, which includes the Los Alamitos Race Course, is to the north of the project site.[2] Planning Area 6, which is designated for Professional Office/Hotel and Support Commercial uses, is to the west of the project site across Siboney Street.

The proposed project plans residential land uses and hotel land uses that are not expressly identified as allowable uses within the Professional Office designation in the Specific Plan. Certain changes to explicit use provisions in the Specific Plan may be made administratively by the Community Development Director, subject to appeal to the City Council. These changes include the transfer of a land use from one planning area to another, subject to certain requirements. Although this would have allowed the hotel uses to be transferred to Planning Area 5, no such transfer could be made for the residential use, and a Specific Plan Amendment is necessary for the proposed project. The proposed hotel and residential uses would need to be included under a Specific Plan Amendment to ensure consistency with the Specific Plan. As such, the proposed project includes a Specific Plan Amendment for the proposed residential and hotel land uses.

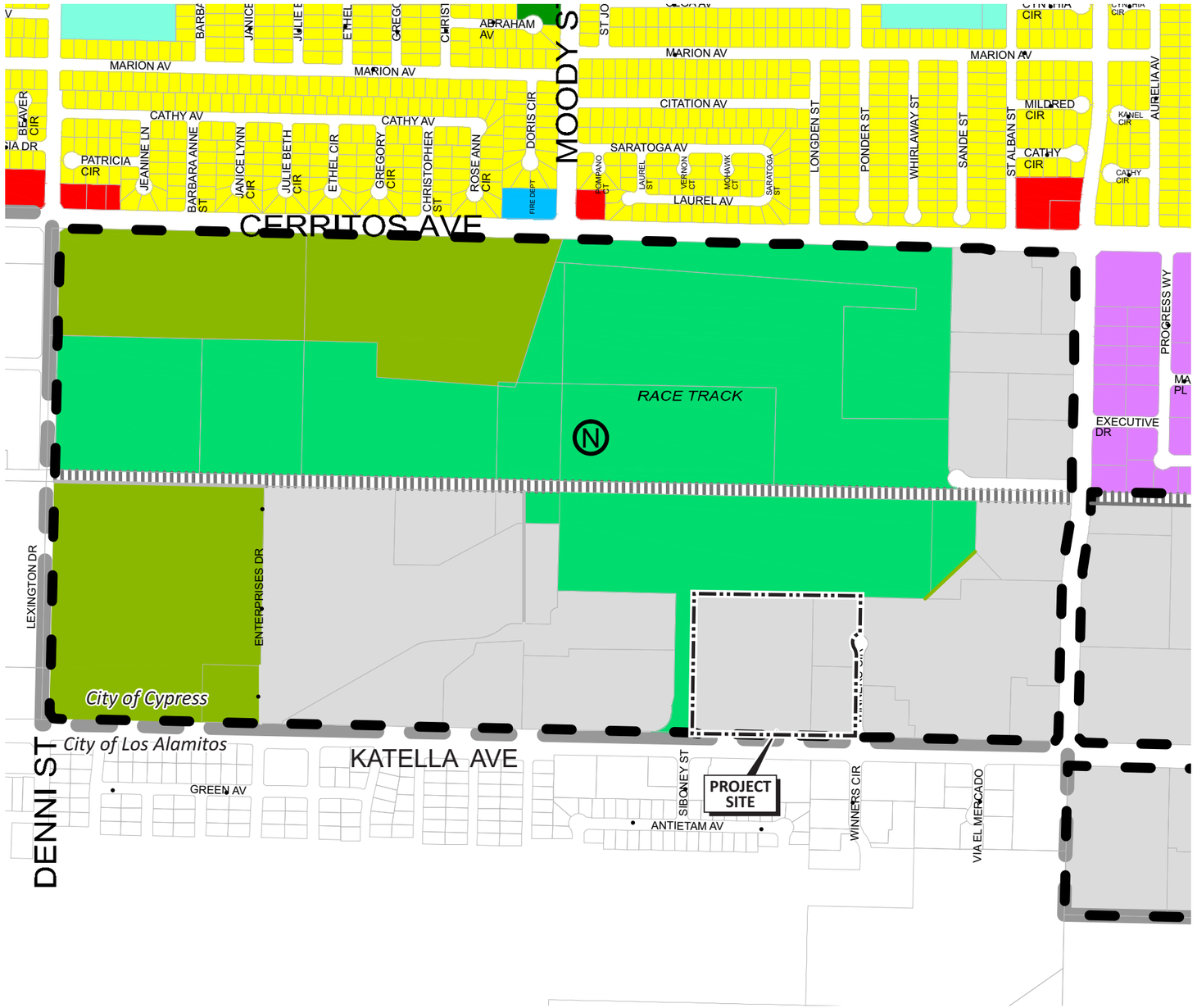
3.3.2 Current Zoning

The project site currently has a zoning designation of PBP-25A, Planned Business Park (PBP) as shown in Figure 3.6, Zoning Designations, which is intended to provide for the development of educational, professional office, commercial, industrial, open space, or any public or semi-public uses.

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1 Figure 3.5 does not reflect the approval of the Cypress Town Center and Commons Specific Plan 2.0.

2 Most of Planning Area 8 is now subject to the Cypress Town Center and Commons Specific Plan 2.0.



LEGEND

- Specific Plan Area
- Specific Plan Boundaries
- Parcels Outside the City
- City Limits

Residential:

- Low Density (0-5 du/ac)
- Medium Density (5.1-15 du/ac)
- High Density (15.1-20 du/ac)
- Mobile Home Park (0-12 du/ac)

Commercial:

- General Neighborhood (0.5:1 FAR)
- Business Park (1.0:1 FAR)
- Light Industrial (0.5:1 FAR)

Community Services and Facilities:

- Government
- Education Facilities
- Public Parks
- Golf Course (Privately - Owned)
- Race Track (Privately - Owned)
- Cemetery (Privately - Owned)
- Flood Control Facilities
- Rail Road

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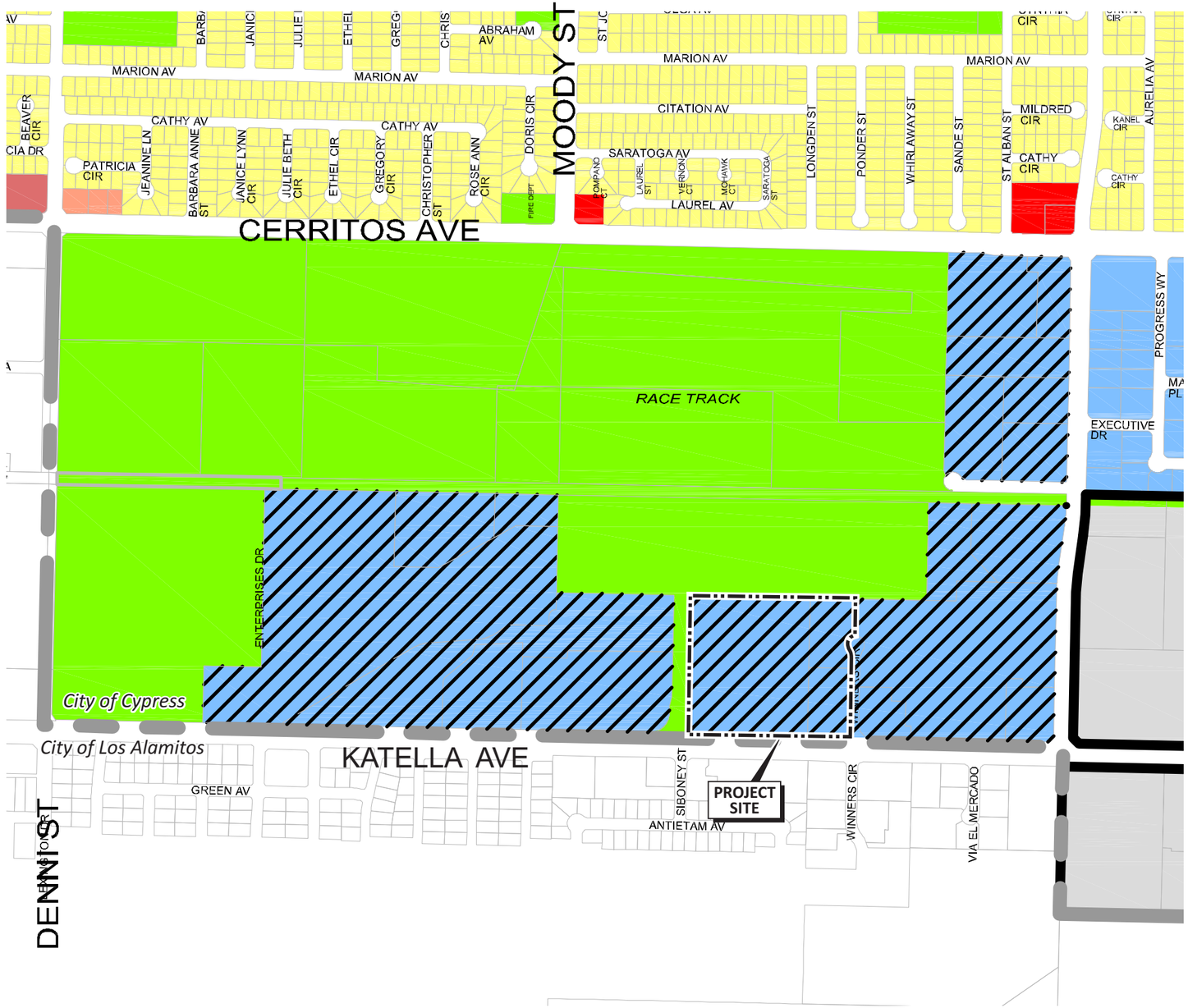
SOURCE: City of Cypress

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FIGURE 3.5

Cypress City Center
City of Cypress General Plan Land Uses

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LEGEND

City Limits
Specific Plan Boundaries

Residential Zones

RS 15000	Residential Single Family Zone
RS 6000	Residential Single Family Zone
RS 6000-DI-FA	Residential Single Family Zone/Density Incentive Zone/ Farm Animal Overlay Zone
RS 6000-DI	Residential Single Family Zone/Density Incentive Zone
RS 6000-FA	Residential Single Family Zone/Farm Animal Overlay Zone
RS 5000	Residential Single Family Zone
RM 15	Residential Multiple Family Zone
RM 20	Residential Multiple Family Zone
RM 20-FA	Residential Multiple Family Zone/Farm Animal Overlay Zone
RM-CC	Residential Multiple Family Zone/Civic Center Combining Zone
MHP-20A	Mobile Home Park Zone

Commercial Zones

OP	Office Professional Zone
OP-CC	Office Professional Zone/Civic Center Combining Zone
CN	Commercial Neighborhood Zone
CG	Commercial General Zone
CG-CC	Commercial General Zone/Civic Center Combining Zone
CH	Commercial Heavy
CH-LC	Commercial Heavy/Lincoln Avenue Combining Zone

Industrial Zones

BP	Business Park Zone
ML	Industrial Light Zone

Special Purpose Zones

PRD	Planned Residential Development Zone
PS	Public and Semi-public Zone
PS-CC	Public and Semi-public Zone/Civic Center Combining Zone
PBP	Planned Business Park
PCM	Planned Commercial/Light Industrial
PC	Planned Community Zone

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SOURCE: City of Cypress

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FIGURE 3.6

Cypress City Center
Zoning Designations

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As previously stated, the Amended Business and Professional Center Specific Plan is the regulatory plan that constitutes the zoning for the project site. While the City's Zoning Map designates the project site as PBP-25A, the Specific Plan largely governs the permitted uses and development standards associated with the project site. An amendment to the Specific Plan is proposed to create a new mixed-use land use district for the project site to allow residential and hotel uses, as discussed in Section 3.4.3, below.

3.4 PROJECT CHARACTERISTICS

3.4.1 Project Objectives

The following provides the objectives established for the proposed project, several of which include implementation of goals and policies from the City's General Plan and the Specific Plan:

1. Provide uses that meet the City's General Plan balanced development goals and objective to locate higher density housing adjacent to commercial and employment opportunities to encourage pedestrian access and provide a consumer base for commercial uses (GP LU-1.4).

2. Provide a balanced mix of residential and commercial uses in the Cypress Business and Professional Center Specific Plan, which would promote a commercial environment that balances quality development with economic growth while building in flexibility to respond to the market demands (Cypress Business & Professional Center SP, Objectives 1.2 and 1.3).

3. Support the retention of local employers and increase the fiscal benefits to the City by attracting new retail, restaurant, hotel and entertainment businesses that can better serve the local population and employment and would generate additional revenue to the City through increased sales, property, and transient occupancy taxes (GP LU-17.1).

4. Meet the demand for new hotel rooms in the Cypress Business Center to serve the local business community.

5. Provide new drainage improvements on the project site, which would reduce the risk of downstream flooding hazards.

6. Provide a new community gathering place for Cypress residents and workers, including a public dog park and a landscaped plaza with outdoor dining areas.

7. Allow the City to divest itself of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance, and the State Controller's Office, which would facilitate the generation of additional revenue to the City by selling the land to a private owner, who would return the land to the property tax rolls and develop it with new revenue-generating uses.

8. Expand the variety of housing stock in the City, which would help meet the existing and future housing needs of all Cypress residents, by providing high-density rental units (GP HOU-3.5).

9. Expand and improve the City's housing supply by developing high-quality housing in the City to alleviate the housing crisis and help the City meet its Regional Housing Needs Assessment allocations (GP HOU-4).

3.4.2 Project Characteristics

The proposed project plans to build a mixed-use development as shown on Figure 3.7, Conceptual Site Plan. The proposed project further plans a 43,175 sf theater with approximately 840 seats, a five-story hotel with up to 120 rooms with approximately 96,800 sf and three retail buildings designed to accommodate a combination of retail and restaurant uses, as follows:

- **Shop A:** 7,150 sf with approximately 1,300 sf of patio area
- **Shop B:** 7,150 sf with approximately 1,630 sf of patio area
- **Shop C:** 6,500 sf with approximately 1,200 sf of patio area

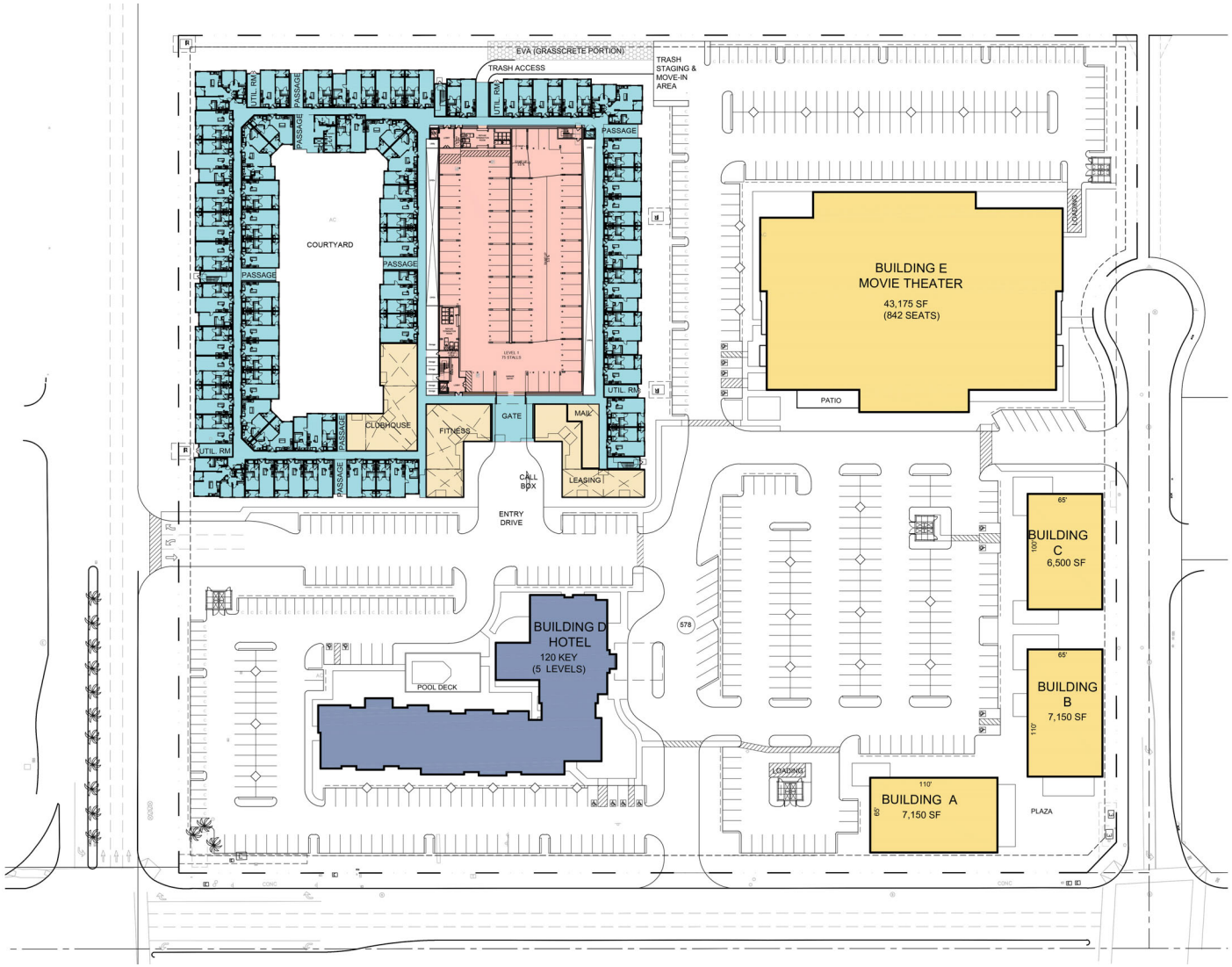
The proposed project also proposes construction of a four-story residential component with up to 251 market-rate apartment units and a variety of apartment amenities as described below. The configuration of the apartments is a "Texas-wrap," where the above-grade parking structure serving the residents is wrapped by residential units. This "wrap" design would conceal the parking structure from view. The apartment design also accommodates a large central courtyard that is 0.45 acre in size and with perimeter landscape/pedestrian buffers.

3.4.2.1 Proposed Buildings

Four-Story Residential Structure. The four-story residential structure is proposed to consist of approximately 312,096 sf, which would be developed on the northwest corner of the project site, and is proposed to be roughly 51 feet (ft) to the top of the tower and 60 ft and 4 inches to the top of the elevator in height. This building would provide up to 141 one-bedroom units, 98 two-bedroom units, and 12 three-bedroom units for a total of 251 market-rate units. Apartment amenities include approximately 3,000 sf of fitness space, an approximately 4,000 sf clubhouse, and an approximately 3,000 sf leasing/lounge area, an approximately 20,000 sf main recreation courtyard, and a 180 sf dog grooming room. The exact building square footage, unit mix, and amenity square footages would be determined at the time of Site Plan/Design review.

Five-Story Hotel. The five-story hotel is proposed to consist of 96,800 sf, which is proposed to be developed in the southeast portion of the project site, and would not exceed 60 ft in height. Hotel amenities also include a lodge, a meeting room, a fitness center, and a pool.

Commercial. The three retail buildings are proposed to consist of three shops of 7,150 sf, 7,150 sf, and 6,500 sf, respectively. These buildings are proposed for the southeast portion of the project site, and would range from 23 to 31 ft in height. The movie theater would consist of 43,175 sf and would not exceed 42 ft in height.



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FIGURE 3.7

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SOURCE: Architects Orange

Cypress City Center

Conceptual Site Plan

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3.4.2.2 Parking

Parking for the commercial and residential uses is described below. Additionally, the proposed project design also accommodates drop-off zones for rideshare providers and convenient public transit is available along Katella Avenue, which can reduce the need for using private vehicles and, thus, the demand for parking.

- **Commercial:** The proposed project would provide up to 442 commercial parking spaces consisting of 280 spaces for the theater, 128 spaces for the restaurants, and 34 spaces for the retail stores. Commercial parking spaces would be provided within a surface parking lot directly behind the proposed retail stores and movie theater. Upon completion, the proposed project would provide parking for the commercial uses at a ratio of 6.91 parking spaces per 1,000 sf.

- **Hotel:** The proposed project would provide up to 135 parking spaces adjacent to the proposed hotel. The proposed project would provide parking for the hotel uses at a ratio of 1.13 spaces per room.

- **Residential:** The proposed project would provide residential parking spaces within a proposed five level parking structure wrapped by the proposed apartment units and concealed from view. All residential parking would be secured by an access gate. The proposed project would provide up to 414 residential parking spaces, consisting of 364 resident parking spaces and 50 guest spaces. Upon completion, the proposed project would provide parking for the residential uses at a ratio of 1.65 parking spaces per unit, based on parking rates in the proposed Specific Plan Amendment.

3.4.2.3 Site Access

Access to the project site would be provided via three driveways, one each off Siboney Street, Katella Avenue, and Winners Circle. The proposed driveway off Katella Avenue represents a shift of an existing driveway approximately 100 ft east of its present location. It would serve the commercial uses on site (e.g., movie theater, retail, and restaurant uses) and would be restricted to right-turn in/out movements only. Access to the proposed hotel and residential areas would be provided off of Siboney Street and Winners Circle.

3.4.2.4 Infrastructure Improvements

The following infrastructure improvements would serve the future development included in the project:

- **Water.** Golden State Water Company owns and maintains a network of water mains in Cypress. They include a 12-inch water main in Katella Avenue and 8-inch water mains in Siboney Street and Winners Circle. Domestic, irrigation, and fire services would likely be connected primarily to the Siboney Street and Winners Circle mains. Domestic water, fire water, and irrigation systems would all be separate. The on-site fire water system would be looped and connect to multiple private hydrants and building sprinkler service lines.

- **Sewer Service.** The City owns and maintains a 15-inch diameter sewer main in Katella Avenue and an 8-inch diameter sewer main in Winners Circle that connects to the Katella sewer. An on-site network of private sewer mains and laterals would connect to the Katella sewer main. The City's sewer network connects to the Orange County Sanitation District (OCSD) network of sewer trunks and eventually discharges to an OCSD sewage treatment plant.

- **Dry Utilities.** Dry utilities would be provided to the site from existing infrastructure available along Katella Avenue and Winners Circle. The proposed project would connect to the existing infrastructure through established utility easement agreements.

- **Grading and Drainage.** The proposed grading for the site would require the net import of approximately 10,000 cubic yards of soil.[1] The grading design maintains the north/south sloping layout of the land, matches existing grades along project perimeters, minimizes the use of retaining walls, and maintains Americans with Disabilities Act (ADA) accessibility and pedestrian connectivity, all while minimizing the earthwork cut and fill.

  On-Site Drainage. In the proposed condition, drainage would flow away from the proposed buildings and into one of several low points across the site. Runoff would be collected into an on-site private underground storm drain system. The allowable discharge from the site is restricted to 0.3 cubic feet per second (cfs) per acre per City requirements. To accommodate developed peak flows that exceed the allowable discharge, the project stormwater 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 proposed project and allowable discharge flow. A storm drain pump would drain the detention systems and meet the 0.3 cfs per acre runoff restriction by limiting the pump discharge to 4.0 cfs. The site would ultimately discharge via a new storm drain connection to the existing Katella Avenue storm drain that varies in size from 33-inch diameter to 48-inch diameter along the frontage.

  In addition to the site's high-flow detention system, a low-flow detention system would be installed to capture and treat the "first flush" storm event. A bifurcation manhole would be placed upstream of the first flush detention system and divert the first flush volume into a separate detention system. This system would be pumped separately, and the runoff would slowly discharge through a manufactured bioretention system over a 48-hour period. The outlet pipe from the biofiltration system would connect separately to the existing Katella Avenue storm drain that varies in size from 33 inches in diameter to 48 inches in diameter along the frontage.

  Off-Site Drainage. The existing off-site flows draining toward the site would be captured by extending the Winners Circle drain, per previously approved plans, to two proposed catch basins along the north property line and routed through a proposed 18-inch storm drain running east, ultimately connecting to the existing 24-inch storm drain in Winners Circle. It should be noted that a drainage easement exists along Winners Circle and extends east and west along the northern border of the project site. In the event runoff from the area north of the site exceeds

[1] Does not reflect any swell/shrinkage factor.

the capacity of the catch basins and drain, one of two potential scenarios would be constructed. Scenario 1 includes off-site improvements, and the Scenario 2 contains the drainage improvements within the project site. Under both scenarios, a curb and gutter and an approximately 2 ft high berm installed north of the property line would block off-site flow from entering the site. Under both scenarios, the overflow drainage pattern closely mimics the existing condition by releasing excess stormwater into the Katella Avenue curb and gutter along the project's street frontage.

In Scenario 1, the off-site flows would temporarily pond along the northern property line before discharging to the west, into Siboney Street, ultimately flowing overland to the south into Katella Avenue. This scenario would repave a portion of the off-site parking lot and reconstruct the portion of Siboney Street along the western side of the project site to public standards, providing a crowned road section and sufficient slope to drain to Katella Avenue without ponding. Scenario 2 would construct an underground storm drain across the project site that conveys off-site flows from the northerly proposed curb and gutter toward Katella Avenue. The drain would connect with a restricted size to the Katella Avenue storm drain and potentially include a stormwater pump. Flows in excess of the restriction/pump capacity would reverse out of a proposed catch basin into the Katella Avenue curb and gutter.

Both scenarios would be interim conditions until the area to the north of the project site is developed and a stormwater management and detention system is constructed to serve that future development. The stormwater management system for any future development north of the project site would likely connect to the extended Winners Circle storm drain and would be held to the same 0.3 cfs per acre flow restriction standard.

- **Phasing.** If the City approves of the proposed project, the project would be constructed as one phase, with three subphases. The sequence of development would coincide with the product type, with the retail shops and theater completing construction within 1 year from start of construction, the hotel about 1 year from start of construction, and the apartments within 2 years from start of construction.

3.4.2.5 Construction Schedule

Construction for the proposed project is anticipated to take approximately 20 months. Although construction would take place in one phase, three subphases would be involved.

3.4.2.6 Green Building Characteristics

The proposed project is proposed to be designed to meet sustainability goals, including the California Green Building Standards Code, Title 24 energy efficiency requirements, and Assembly Bill 1881 water efficient landscape requirements. The proposed project would also incorporate a number of energy and water conservation measures, green building features, and Low Impact Development (LID) design features. These design features and practices may include the following and would be implemented according to each product type:

- Increased insulation in walls and attic spaces.

- Cool roof features.
- Duct insulation and improved-efficiency heating, ventilation, and air conditioning systems.
- High-efficiency water heaters.
- Installation of daylighting features on all peripheral rooms.
- Very high efficiency lights (100 percent of in-unit fixtures are high efficacy).
- Installation of high efficiency refrigerator (Energy Star) Dish Washer (Energy Star), and clothes washing appliances.
- North/south alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.
- Shading by vegetation or overhangs.
- Solar photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that 30 percent of the power needs of the project would be provided.
- Water efficient landscaping that eliminates conventional turf from landscaping and includes only moderate-water-using plants.
- Low precipitation spray heads (less than 0.75 inch per hour or drip irrigation).
- Weather-based irrigation control systems combined with drip irrigation (demonstrate 20 percent reduced water use).
- Recycled water connection (purple pipe) to irrigation system on site.
- Innovative on-site stormwater collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems would be determined based upon design and engineering data documenting the water savings (for apartments only).
- Water efficient showerheads (2 gallons per minute [gpm]).
- Water efficient toilets/urinals (1.5 gpm); waterless urinals (note that commercial buildings having both waterless urinals and high-efficiency toilets would have a combined point value of 6 points—applies to commercial uses only).
- Water-efficient faucets (1.28 gpm).
- Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce greenhouse gas (GHG) emissions. The point value of mixed-use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.
- Public charging station for use by an electric vehicle.

- Complete sidewalk to residential within 0.25 mile; bicycle lockers and secure racks.
- Local transit within 0.25 mile.

3.4.2.7 Proposed Open Space Amenities

As shown in Figure 3.8, Proposed Open Space Amenities, the proposed project would include a 21,222 sf plaza on the southeastern corner of the project site surrounding the proposed retail structures. The proposed project would also include an approximately 23,000 sf greenbelt on a property immediately to the west of the project site. This is an off-site improvement that would be constructed as part of the proposed project. The proposed project would also include a 15,355 sf dog park and greenbelt on the northwestern portion of the project site. Private open space/recreational amenities in the proposed project would also include a 20,055 sf courtyard, a 4,135 sf clubroom, a 3,140 sf fitness room, and a 4,170 sf lounge within the proposed residential development.

3.4.2.8 Landscape Plan

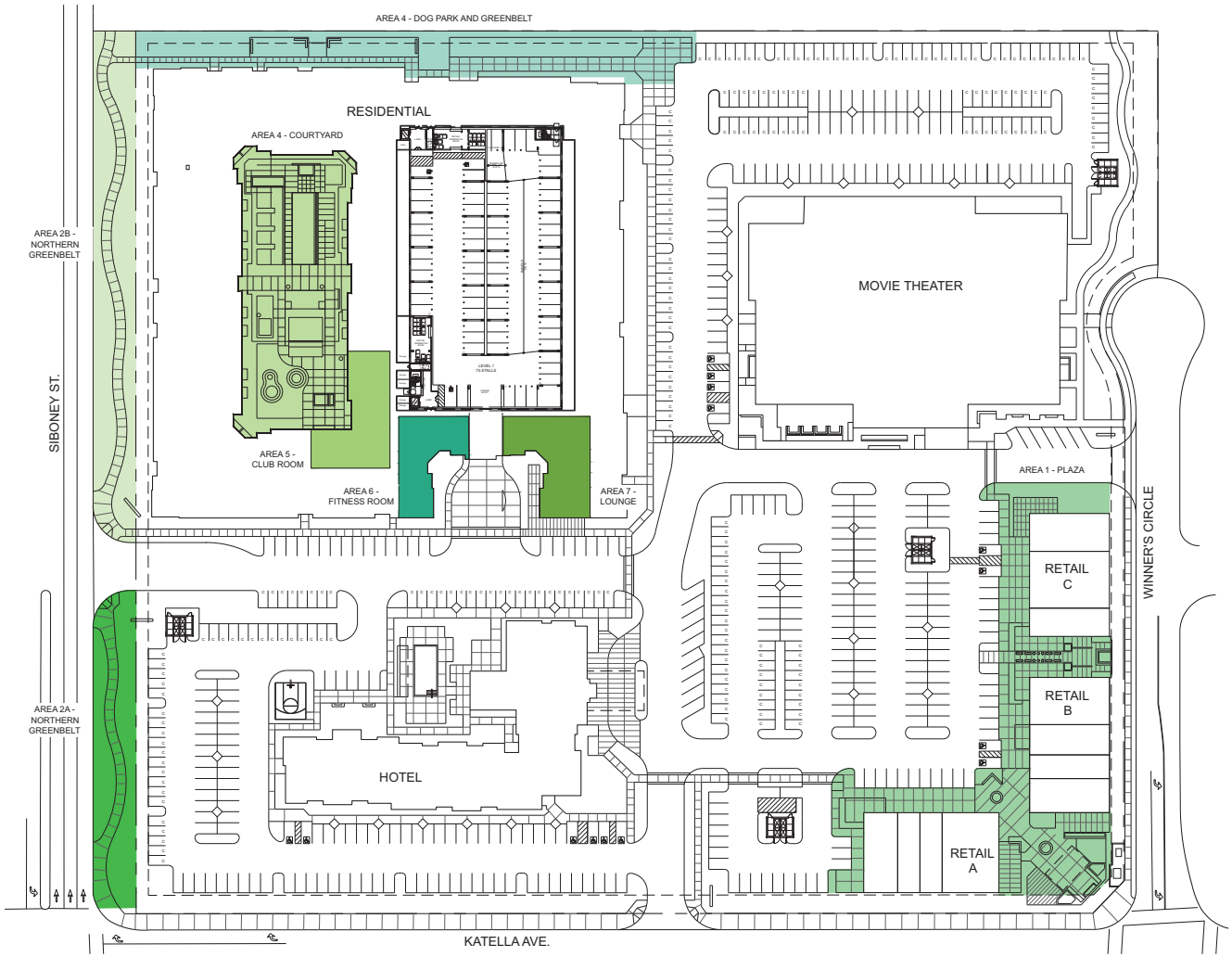
As shown in Figure 3.9, Conceptual Landscape Plan, landscaping for the proposed project would be provided throughout the project site. It should be noted that although Figure 3.9 shows trees north of Winners Circle, a roadway easement is proposed that would allow for the future extension of Winners Circle. This easement would prohibit the planting of trees on the project site to the north of Winners Circle. Landscaping for the proposed project would include a variety of tree and plant species in accordance with the requirements outlined in the Specific Plan. A variety of trees, shrubs, and turf landscaping is proposed along the perimeter of the project site and within the interior and common areas. The proposed project would provide a landscaped courtyard serving the retail uses at the southeastern corner of the project site. The courtyard would provide outdoor seating for diners, a multi-use turf area, a shade structure with a fireplace, and a feature wall with a fountain.

Additionally, the proposed project would provide off-site landscaping along Siboney Street with trees, an 8 ft wide sidewalk, and a rest area with a bench. Ornamental trees, accent planting, and monument signs would also be provided at the corners of the Siboney Street entrance to the project site, with palm trees provided along the Siboney Street driveway. The southern side of the proposed theater would also include landscaping with a variety of trees and would include a dining patio with outdoor seating, an accessible drop off zone, and a pedestrian walkway connection. The entrance at Winners Circle would include a monument sign, accent planting, and palm trees.

3.4.2.9 Architectural Design

The architectural design of the proposed project would include complementary colors and a variety of building materials and would be consistent with all design guidelines provided in the Specific Plan and Specific Plan Amendment. The proposed hotel includes fiber cement panels, stone or masonry veneer, aluminum storefronts and window frames, and anodized dark bronze to make the proposed structure appear visually appealing. The use of contrasting color tones would break up the scale and massing of the proposed hotel.

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PROPOSED OPEN SPACE AMENITIES

PARK AMENITY (PUBLIC)	
AREA 1 - PLAZA	21,222 SF
AREA 2A - SOUTHERN GREENBELT	8,798 SF
AREA 2B - NORTHERN GREENBELT	14,280 SF
AREA 3 - DOG PARK AND GREENBELT	15,355 SF
SUBTOTAL	59,655 SF
PARK AMENITY (PRIVATE)	
AREA 4 - COURTYARD	20,055 SF
AREA 5 - CLUB ROOM	4,135 SF
AREA 6 - FITNESS ROOM	3,140 SF
AREA 7 - LOUNGE	4,170 SF
SUBTOTAL	31,500 SF
TOTAL OPEN SPACE	91,155 SF

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FIGURE 3.8

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SOURCE: Architects Orange

Cypress City Center

Proposed Open Space Amenities

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FIGURE 3.9

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SOURCE: Architects Orange

Cypress City Center

Conceptual Landscape Plan

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The proposed commercial buildings and theater would incorporate metal architectural cladding, brick and stone veneer, porcelain tile, fiber cement siding, metal canopies and slats, anodized aluminum storefronts, metal trellises with fabric swags, and metal caps, trims, and lattices into the design to make the proposed buildings both visually interesting and appealing.

The proposed residential structure would include light sand finish stucco, architectural metal panels, horizontal metal sidings, glass railings, brick veneer, vinyl windows, metal awning canopies, stone or masonry veneer, an aluminum storefront, faux wood siding material, and a covered arcade metal trellis. The use of contrasting color tones would break up the scale and massing of the proposed residential building.

3.4.3 Discretionary Actions

Discretionary approvals required for the proposed project are outlined in the table below:

Discretionary Action	Agency Responsible
Certification of this EIR	Cypress City Council
Specific Plan Amendment	Cypress City Council
Tentative Parcel Map	Cypress City Council
Conditional Use Permit	Cypress City Council
Development Agreement	Cypress City Council
Site Plan/Design review	Cypress Design Review Committee
Alcohol permits	California Department of Alcoholic Beverage Control
Encroachment Permits	Cypress Public Works Department and the Los Alamitos Public Works Department
Vacation and/or dedication of City right-of-way	Cypress Public Works Department

EIR = Environmental Impact Report

The following provides a description of the City's primary discretionary approvals for the proposed project.

3.4.3.1 Specific Plan Amendment

The proposed Specific Plan Amendment would create a new mixed-use land use district for the project site to allow residential and hotel uses by separate the existing Planning Area 5 into two subareas (5A and 5B). Planning Area 5B would include the project site and be designated "Mixed Use Commercial/Residential." Planning Area 5A, which is located east of the project site, would remain Professional Office. The new designation would allow for both residential and hotel uses as well as commercial uses. The Specific Plan Amendment would also update land use tables to incorporate the new planning area 5B.

The proposed Specific Plan Amendment would also amend the following goals and objectives of the Specific Plan as described below (proposed amendments are shown in underline/~~strikeout~~ format):

1. Overall Concept

Goal 1: To achieve the best possible land use for the Specific Plan area with emphasis on employment generation, economic growth, and generation of revenues to the City, and

providing a diversity of housing in the City by providing multifamily housing as well as senior housing through a "continuum of care" approach, while retaining the race track use on-site.

Objective 1.7: Promote multifamily housing in close proximity to commercial uses.

Policy 1: Encourage employment-generating business park and other commercial uses in the Specific Plan area, while expanding the diversity of housing by providing multifamily housing in Planning Area 5B, and senior housing and related "continuum of care" facilities, in Planning Area 9.

2. Uses

Objective 2.2: Establishment of uses which are compatible with contemporary commercial, mixed-use commercial and residential, and senior housing requirements for a wide range of uses.

Objective 2.5: Establishment of zoning standards which ensure the continuation of public/semi-public uses in the race track area of the site (Planning Area 8), while allowing the development of mixed-use commercial and residential uses, senior housing and related "continuum of care" uses, in the undeveloped southern portion of the former Golf Course that was previously part of Planning Area 7 in the Original Specific Plan and is now part of Planning Areas 9, in this amended ~~and restated~~ Specific Plan.

3. Race Track

Goal 4: Achieve integration of the race track and future on-site and adjacent commercial, mixed-use, residential, and senior housing development, while minimizing conflicts.

Objective 4.1: Achieve coordinated planning and development along the common boundary between the race track and the commercial, mixed-use, senior housing, and public/semi-public areas.

Objective 4.4: Develop Planning Area 5B with mixed-use commercial/residential permitted uses in a manner compatible with the adjacent planned uses in Planning Area 8.

The proposed Specific Plan Amendment would also amend the circulation component of the Specific Plan to specify access points to the new subareas in Planning Area 5 as follows (again, proposed revisions are shown in redline format):

Planning Area 5: Planning Area 5 is split into two subareas: Planning Area 5A and Planning Area 5B. Access ~~driveways are~~is planned in ~~six~~seven locations including the access point on Walker Street in conjunction with Planning Area 4. One other access point would be located on Walker Street several hundred feet north of Katella Avenue. Only right-in and right-out traffic would be permitted at this location. Subarea 5A is developed with a Costco warehouse outlet, with two driveways~~Four access points would be located~~ along Katella Avenue west of Walker Street. Both driveways~~The most easterly driveway would~~ allow right-in and right-out traffic only and ~~would~~

~~be~~are unsignalized. ~~The next driveway to the west would be aligned with~~ Winners Circle Drive is located between Subareas 5A and 5B, providing access to both subareas. It is currently signalized and ~~would~~ allow~~s~~ for a full range of traffic movement. The ~~next~~ existing driveway off Katella Avenue would be relocated approximately 50 feet to the east with development of Subarea 5B and allow right-in/right-out traffic only and would be unsignalized. The westernmost ~~driveway~~access point is ~~would be~~ aligned with Siboney Street, which is the main access to Los Alamitos Race Track and would permit the full range of traffic movements. Siboney Street will also provide access to Subarea 5B. This intersection is currently signalized and would be shared with traffic to/from Planning Area 6.

The Specific Plan Amendment would include minor changes to the Design Guidelines to allow super graphics (large graphics) and projecting signage. Additionally, the Specific Plan Amendment would include site development standards and building floor area ratio (FAR) and site coverage standards specific to Planning Area 5B. The following setback requirements pertain to Planning Area 5B:

1. Katella Avenue shall have a minimum building setback of fifteen (15) feet, measured from right-of-way. The setback area shall be landscaped.

2. Siboney Street and Winners Circle setbacks shall be a minimum of ten (10) feet, measured from the property line.

3. Interior setback from Planning Area 8/Town Center Specific Plan areas shall be a minimum of five (5) feet, measured from the property line.

4. No building shall exceed ninety-nine (99) feet in height.

The proposed Specific Plan Amendment also includes modified parking requirements that would apply to Planning Area 5B (Commercial/Residential Mixed Use). Uses not outlined below would be required to comply with the requirements of the City's Zoning Ordinance:

a. Hotel: 1 space per room.

b. Residential: 1.65 spaces per dwelling unit, inclusive of 0.2 space per unit designated for visitor parking.

Permitted uses in Planning Area 5B would include:

a. All permitted uses described in Section VI.G.2 (Mixed Use Commercial) of the Specific Plan.

b. Residential Uses, multifamily rental or for-sale, and typical ancillary uses (pool/spa, fitness rooms, business centers, leasing offices).

Uses permitted subject to a Conditional Use Permit in Planning Area 5B would include:

a. All uses identified in Section VI.G.3 (Mixed Use Commercial) of the Specific Plan.[1]

Site development standards specific to the Planning Area 5B would include:

a. Minimum Parcel Size: 10,000 square feet.

b. Minimum Parcel Depth: No minimum.

c. Minimum Parcel Width: 50 feet.

d. Maximum Structure Height: 99 feet.

e. Maximum Parcel Coverage: No maximum.

f. Minimum Landscape Coverage: 25% (Residential only). Includes pedestrian walkways, drives, and hardscape improvements.

g. Common Open Space: 200 sq. ft./du (Residential only)

   Common Open Space shall be devoted to landscaping, patios, enclosed club and fitness rooms, and outdoor facilities such as recreational facilities, pools, and areas devoted to dogs. These areas can include pedestrian walkways, drives, and hardscape improvements to support access and use of the common open space/recreational facilities. The above-listed common open space facilities within Planning Area 5B may be counted towards credit for private open space facilities under Article VI of the Cypress Municipal Code.

h. Private Open Space: 50 sq. ft. [sf] /du (Residential only)

   Private open space requirement is measured over the total number of units. Minimum private patio/balcony of 50 sf.

Building floor area ratio (FAR) and site coverage standards specific to Planning Area 5B would include:

a. Site coverage, defined as the building-ground contact area divided by the total net lot area, shall not exceed 60% if surface parking is provided and 70% with parking structures providing all or part of the parking spaces; and

b. The maximum floor area ratio (FAR) for Planning Area 5B as a whole shall not exceed the density specified in the Land Use Plan (Exhibit 1 of the Specific Plan) and in Table 1, provided, however, that (a) the floor area devoted to parking within a building shall not be considered in calculating the FAR for Planning Area 5B.

Building height standards specific to Planning Area 5B are proposed as follows:

[1] Includes hotel and motel uses.

Maximum building height shall not exceed 99 feet excluding any roof-mounted equipment and/or architectural details, provided that a higher limit for a hotel is permissible with City Council approval subject to Design Review. Ultimately, building heights shall be subject to City Design Review and the review and determination of Federal Aviation Administration [FAA], under Part 77 of the Federal Aviation Regulations [FAR], which evaluates development projects in the vicinity of Los Alamitos Armed Forces Reserve Center. As a result of these reviews, the permitted building height may be reduced. No buildings will be allowed which penetrate the imaginary surfaces pertaining to hazards or obstructions, per FAR Part 77 and other applicable FAA standards, such as the Terminal Instrument Procedures (TERPS). Roof-top mechanical equipment and screening shall be set back fifteen feet (unless the screening is an integral part of the facade) from an exterior building edge and shall not project above the equipment which it is designed to shield from view.

3.4.3.2 Tentative Parcel Map

Approval of a Tentative Parcel Map is required to subdivide the property into five parcels. The Tentative Parcel map also includes all access driveways and public rights-of-way.

3.4.3.3 Conditional Use Permit

A Conditional Use Permit (CUP) would be required for the proposed hotel and theater, commercial, and restaurant/alcohol uses.

3.4.3.4 Development Agreement

A Development Agreement would be entered into between the Applicant/Developer, Shea Properties, and the City of Cypress which provides for Implementation of the proposed project. The Development Agreement includes provisions regarding the duration of the agreement, vests the permitted uses of the property, the density or intensity of use, the maximum height and size of proposed buildings, and includes provisions for reservation or dedication of land for public purposes. The Development Agreement also includes conditions, terms, restrictions, and requirements for subsequent discretionary actions, provided that such conditions, terms, restrictions, and requirements for subsequent discretionary actions shall not prevent development of the land for the uses and to the density or intensity of development set forth in the Development Agreement.

3.4.3.5 Site Plan/Design Review

Site Plan/Design Review of the proposed project would be conducted pursuant to Section 4.19.060 of the City's Municipal Code. As part of this review, the City would consider whether the proposed project is in compliance with all zoning requirements and consider the aesthetics and design of the proposed project relative to the aesthetic qualities within the City.

3.4.3.6 Certification of Final EIR

The City Council would certify that the Final EIR addresses the potential environmental effects of the proposed project and identifies appropriate mitigation measures to address any potentially significant effects.

3.4.4 Ministerial Actions

Ministerial approvals required for the proposed project are outlined in the table below:

Action	Agency Responsible
General Construction Permit	State Water Resources Control Board
Groundwater Dewatering Permit	Santa Ana Regional Water Quality Control Board
Proposed Construction or Alteration Determination, pursuant to 14 CFR, Part 77	Federal Aviation Administration

CFR = Code of Federal Regulations

4.0 EXISTING SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES

OVERVIEW OF ENVIRONMENTAL SETTING

The project site is on the northwest corner of Katella Avenue and Winners Circle in the southern portion of Cypress, California, approximately one mile northwest of Garden Grove and immediately north of the Los Alamitos corporate boundary. As shown on Figure 3.1, Regional and Project Location, in Chapter 3.0, Project Description, regional access to the project site is provided via Interstate 605 (I-605), which is located approximately 2 miles west of the project site, and Interstate 405 (I-405) and State Route 22 (SR-22), which are located approximately 3 miles south of the project site.

In its existing condition, the project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines. A main water valve is within the current right-of-way along Siboney Street near the southwest corner of the project site. Sewer and storm drain infrastructure is also within the current right-of-way along Katella Avenue. No lateral lines serve the project site. The edge condition along Katella Avenue and a portion of Siboney Street has been improved with a public sidewalk, fencing, and ornamental landscaping. The edge condition along Winners Circle has been improved with a public sidewalk and driveway access points, with no landscaping. The interior property is improved with a parking lot and limited landscaping. Vehicular access to the project site is provided from four locations, a right-turn-in/out-only driveway directly on Katella Avenue, two driveways off Winners Circle, and a series of driveways off Siboney Street.

Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course. The existing parking lot rarely reaches capacity, except for during the Wiener Nationals dog racing event, which takes place annually in July. Other short-term uses include a Christmas tree lot and a truck staging area. Local businesses have leased the project site on a temporary basis from time to time for auxiliary truck and trailer storage.

Vacant land and surface parking lots associated with the Los Alamitos Race Course, as well as the race track itself, are immediately north of the project site. Northeast of the site is a Goodwill Donation Center and Cypress Corporate Park. East of the project site across Winners Circle are commercial and retail services, including a Costco warehouse outlet and restaurant uses. Katella Avenue, a six-lane arterial roadway, borders the project site to the south. Uses to the south of Katella Avenue include commercial and office and business park uses in the City of Los Alamitos. A commercial center, consisting of restaurant, commercial services, and a 24 Hour Fitness as well as a Seventh Day Adventist Church, is to the west of the project site across Siboney Street. The Barton Place Residential Project (now known as Ovation at Flora Park) and a Marriott Hotel are immediately west of the commercial center.

CHAPTER FORMAT

This chapter contains 17 sections, and each section addresses one environmental topic listed in Appendix G of the Guidelines for the California Environmental Quality Act (*State CEQA Guidelines*) (California Code of Regulations [CCR] Title 14, Chapter 3, Sections 15000–15397).

For each environmental impact issue analyzed, the Environmental Impact Report (EIR) includes a detailed explanation of the existing conditions, thresholds of significance that will be applied to determine whether the project's impacts are significant or less than significant, analysis of the environmental impacts, and a determination of whether the project would have a significant impact if implemented. A "significant impact" or "significant effect" means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora fauna, ambient noise, and object of aesthetic significance. An economic or social change by itself shall not considered to be a significant effect on the environment." (14 CCR Section 15382). Each environmental topic section in Chapter 4.0 also includes a discussion of the cumulative effects of the project when considered in combination with other projects, causing related impacts, as required by *State CEQA Guidelines* Section 15130.

Each of the sections is organized into eleven subsections, as follows:

- **Introduction** briefly describes the topics and issues covered in the section.
- **Methodology** describes the approach and methods employed to complete the environmental analysis for the issue under investigation.
- **Existing Environmental Setting** describes the relevant physical conditions that exist at the time of the issuance of the Notice of Preparation (NOP) that may influence or affect the issue under investigation. This section focuses on physical site characteristics that are relevant to the environmental topic being analyzed.
- **Regulatory Setting** lists and discusses the laws, ordinances, regulations, plans, and policies that relate to the specific environmental topic and how they apply to the proposed project.
- **Thresholds of Significance** sets forth the thresholds that are the basis of the conclusions regarding significance, which are primarily the criteria in Appendix G to the *State CEQA Guidelines* and the City of Cypress (City) *Initial Study/Environmental Checklist*, General Plan, or Zoning Code.
- **Project Impacts** describes the potential environmental changes to the existing physical conditions that may occur if the proposed project is implemented. Evidence is presented to show the cause-and-effect relationship between the proposed project and potential changes in the environment. In accordance with *State CEQA Guidelines* Section 15126.2(a), this EIR is required to "identify and focus on the significant environmental effects" of the proposed project. The magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether impacts may be

significant. In accordance with CEQA, potential project impacts, if any, are classified as follows for each of the environmental topics discussed in this EIR.

- **Significant and Unavoidable Impact:** If the proposed project is approved with significant and unavoidable impacts, the decision-making body is required to adopt a statement of overriding considerations pursuant to *State CEQA Guidelines* Section 15093 explaining why the project benefits outweigh the unavoidable adverse environmental effects caused by those significant and unavoidable environmental impacts.

- **Less Than Significant with Mitigation Incorporated:** This classification refers to potentially significant environmental impacts that can be feasibly mitigated to a level of insignificance. If the proposed project is approved, the decision-making body is required to make findings pursuant to *State CEQA Guidelines* Section 15091 that significant impacts have been mitigated to the extent feasible through implementation of mitigation measures.

- **Less Than Significant Impact:** Less than significant impacts are environmental impacts that have been identified but are not potentially significant. No mitigation is required for less than significant impacts.

- **No Impact:** A "no impact" determination is made when the proposed project is found to have no environmental impact.

- **Level of Significance Prior to Mitigation** summarizes the potentially significant impacts of the project, if any, prior to mitigation.

- **Regulatory Compliance Measures and Mitigation Measures** describe relevant and applicable laws or regulations that must be adhered to with respect to the construction and/or operation of the proposed project and would reduce or lessen potential impacts related to a particular issue area and identifies project-specific measures that avoid, minimize, rectify, reduce, eliminate, or compensate for a potentially significant impact.

- **Level of Significance after Mitigation** describes the significance of potential impacts after implementation of mitigation measures. Potential significant unavoidable impacts are clearly stated in this section.

- **Cumulative Impacts** refers to potential environmental changes to the existing physical conditions that may occur as a result of project implementation together with all other reasonably foreseeable, planned, and approved future projects in the vicinity of the project site that produce related impacts. *State CEQA Guidelines* Section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time. Projects that have progressed to the stage where CEQA review has been initiated are normally treated as foreseeable probable future projects. For each of the environmental topics considered in this EIR, the geographic scope of the cumulative analysis is defined.

THRESHOLDS OF SIGNIFICANCE

The threshold questions used in Section 4.9, Hydrology and Water Quality, of this EIR are consistent with those included in the City's *Initial Study/Environmental Checklist*. The rest of the threshold questions used in this EIR are consistent with Appendix G of the *State CEQA Guidelines*.

EFFECTS EVALUATED IN THIS EIR

The discussion of potential effects is presented by environmental resource area in this EIR. As part of the scoping and environmental analysis carried out for the proposed project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in the document.

Agriculture/Forestry Resources: The proposed project is located within a suburban setting and does not affect any existing agricultural or forestry resources. Furthermore, there are no farmlands or timberlands designations within the project area in the Land Use Element of the City's General Plan or the Zoning Ordinance.

Mineral Resources: As described in the Conservation/Open Space/Recreation Element of the City's General Plan, The State Division of Mines and Geology identifies mineral resource areas throughout the State. According to the Geologic Map of Orange County showing Mines and Mineral Deposits, the City of Cypress does not contain any mineral resources as defined.

Wildfire: There are no very high fire hazard severity zones designated within the City of Cypress either as part of the City's General Plan or Municipal Ordinance and there would be no effect on emergency response or evaluation plans associated with this level of fire hazard zone.

RELATED PROJECTS

In accordance with *State CEQA Guidelines* Section 15130, cumulative impacts are anticipated impacts of the proposed project along with reasonably foreseeable growth. Reasonably foreseeable growth may be based on either:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

- A summary of projections contained in the adopted General Plan or related planning document, or in a prior environmental document that has been adopted or certified, and that described or evaluated regional or areawide conditions contributing to the cumulative impact.

For the purposes of the EIR, a list of past, present, and probable future projects is used in the evaluation of potential cumulative impacts. All proposed, recently approved, under construction, and reasonably foreseeable projects that could produce a related or cumulative impact on the local environment when considered in conjunction with the proposed project are evaluated in an EIR. As stated above, an analysis of the cumulative impacts associated with these related projects and the

proposed project is provided in the cumulative impacts discussion under each individual impact category in Chapter 4.0.

In coordination with the Cities of Cypress, Garden Grove, Los Alamitos, and Stanton, a list of past, present, and probable future projects was developed. As shown in Table 4.A, the projects include various land uses, such as residential, commercial, industrial, hotel, and mixed-use. The locations of the related projects are shown on Figure 4.1, Related Projects. Although some projects on the list have been completed since issuance of the NOP, they remain on the list because they are part of the cumulative analysis for the EIR.

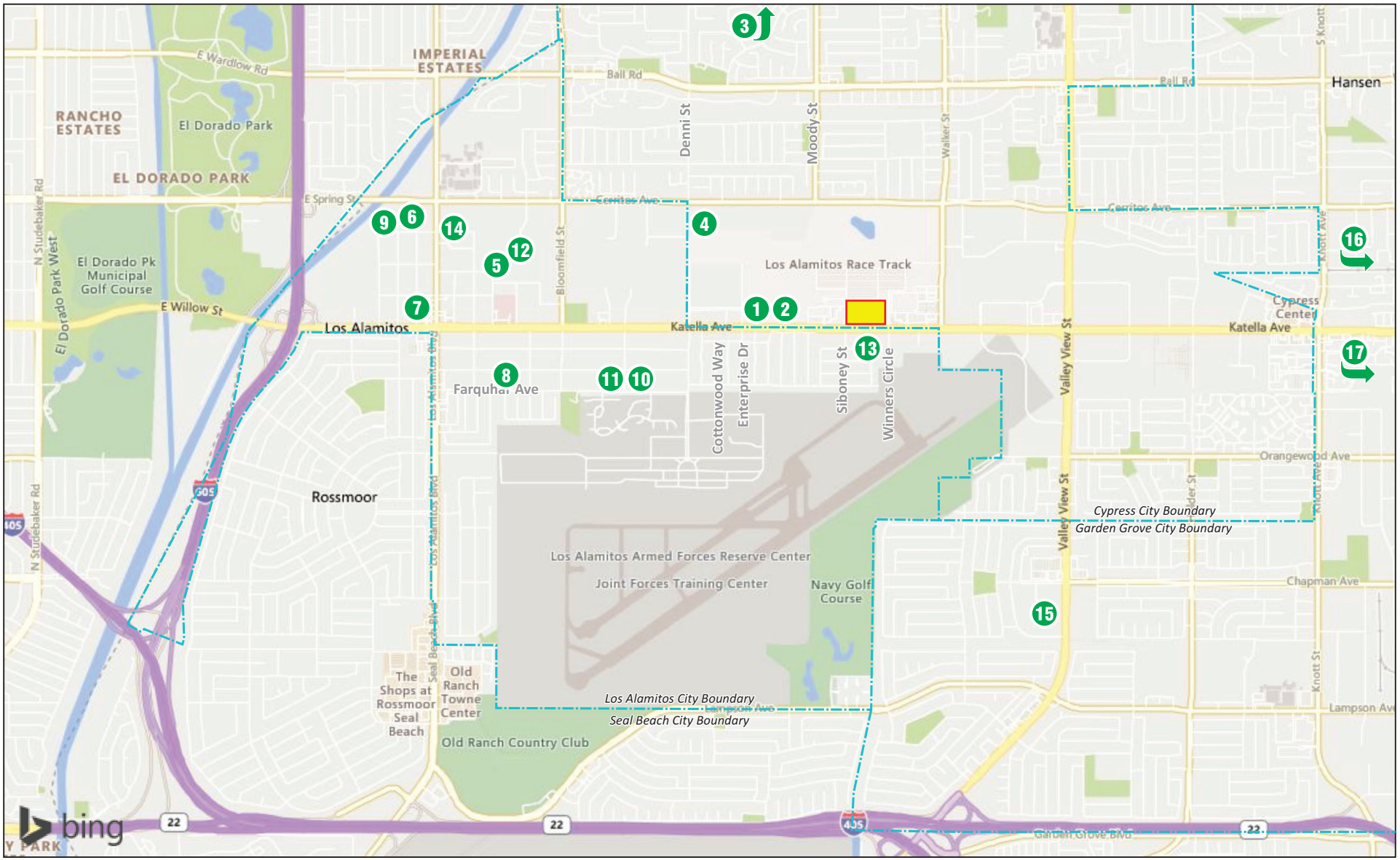
It is noted that some of the related projects may not be completed by 2021 (the proposed project's anticipated buildout year), may never be built, or may be approved and built at reduced densities. However, to provide a conservative forecast, the future baseline forecast assumes that all of the related projects will be fully built out by 2021.

The discussion of cumulative impacts "should be guided by the standards of practicality and reasonableness" (*Environmental Protection Info. Center v. Department of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 524). A proposal that has not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project (*City of Maywood v. Los Angeles Unified School District* (2012) 208 Cal.App.4th 362, 397). Rather, a potential future project qualifies for inclusion in an analysis of cumulative impacts only to the extent the future project is "both probable and sufficiently certain to allow for meaningful cumulative impact analysis" (*Id.* at 398; see *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 902 [when "review[ing] the agency's decision to include information in the cumulative impacts analysis[,] ... [w]e determine whether inclusion was reasonable and practical"]).

Table 4.A: Summary of Related Projects

Project No.	Project Name	Location	Status	Project Description
City of Cypress				
1	Barton Place Mixed-Use (Ovation)	Northeast corner of Katella Avenue and Enterprise Drive	Approximately 100% of the project was completed as of December 2019.	244 du senior housing
2	Barton Place Mixed Use (Westmont)	Northeast corner of Katella Avenue and Enterprise Drive	Approved, construction expected to start soon.	129-unit (152-bed) assisted living 13,700 sf retail
3	Bonanni Development	4620 Lincoln Avenue	Approved	67 du apartments
4	Cypress Sports Park	Southeast corner of Lexington Street and Cerritos Avenue	Approved, not under construction yet.	9-acre sports park (6 soccer fields)
City of Los Alamitos				
5	Residential Development	10845 Cherry Street	Approved	1 duplex
6	Los Alamitos Luxury Apartments	3342 Cerritos Avenue	Approved	107 du apartments
7	Residential Development	10922 Walnut Street	Under construction as of January 2019.	4 du apartments
8	Residential Development	3751 Farquhar Avenue	Completed	4 du condominiums
9	Cottonwood Church Site Residential Development	3311 Sausalito Street	Under construction as of May 2019.	50 du condominiums
10	Residential Development	4071 Farquhar Avenue	Under construction as of March 2019.	5 du condominiums
11	Residential Development	4061 Farquhar Avenue	Under construction as of March 2019.	5 du condominiums
12	Residential Development	10700 Reagan Street	Under construction as of February 2019.	1 duplex
13	Commercial Development	5250 Katella Avenue	Under construction as of May 2019.	2,400 sf coffee shop 2,800 sf restaurant
14	Hotel Development	10650 Los Alamitos Boulevard	Under construction as of May 2019.	107-room hotel
City of Garden Grove				
15	Mixed Use Development	12101–12111 Valley View Street	Under construction as of September 2019.	4,241 sf automatic car wash 1,870 sf drive-through restaurant 2,700 sf sit-down restaurant 2,846 sf movie theater
City of Stanton				
16	Commercial Development	10580–10600 Beach Boulevard	Under construction as of February 2019.	4,100 sf retail 850 sf warehouse
17	Residential Development	7320 Katella Avenue	Proposed	6-unit townhouses

du = dwelling unit
sf = square foot/feet



LSA

LEGEND

- Project Site
- # - Related Projects
- City Boundary

0 1500 3000

FEET

SOURCE: Bing Maps

FIGURE 4.1

Cypress City Center

Location of Related Projects

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4.1 AESTHETICS

This section evaluates the existing visual and aesthetic resources on the project site and in the surrounding area, and evaluates the potential for changes in aesthetic character that could result from implementation of the proposed Cypress City Center project (proposed project). This section also evaluates the potential loss of existing visual resources, effects on public views, visual compatibility with existing uses, and light and glare impacts.

Information presented in this section is based on the building elevations and landscape plan included in the development plans; the City of Cypress (City) Municipal Code; and the Amended and Restated Cypress Business and Professional Center Specific Plan (Specific Plan) (2012).

4.1.1 Methodology

The assessment of aesthetic impacts is subjective by nature. This analysis attempts to identify and objectively examine factors that contribute to the perception of aesthetic impacts that would be caused by implementation of the proposed project. The potential aesthetic impacts of the proposed project have been assessed based on consideration of several factors, including scale, mass, proportion, and the concepts described below.

- **Scenic Resources:** Scenic resources are defined as natural or manmade elements that contribute to an area's scenic value and are visually pleasing. Scenic resources include landforms, vegetation, water, or adjacent scenery and may include a cultural modification to the natural environment. The degree to which these resources are present in a community is clearly subject to personal and cultural interpretation. However, it is possible to qualify certain resources as having aesthetic characteristics and establish general guidelines for assessing the aesthetic impacts of new development.

- **Scenic Vista:** A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the public's benefit. It is usually viewed from some distance away. Aesthetic components of a scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. A scenic vista can be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "vista" of the scenic resource. Important factors in determining whether a proposed project would block scenic vistas include the project's proposed height, mass, and location relative to surrounding land uses and travel corridors.

- **Sensitive Views:** Sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any valued public vantage point. Sensitivity level has to do with the (1) intensity of use of a visual resource; (2) visibility of a visual resource; and (3) importance of the visual resource to users.

- **Scenic Corridors:** Scenic corridors are channels that facilitate movement (primarily by automobile, transit, bicycle, or foot) from one location to another with expansive views of natural landscapes and/or visually attractive manmade development. Scenic corridors analyzed

under the California Environmental Quality Act (CEQA) typically include State-designated scenic highways and locally designated scenic routes.

- **Scenic Quality:** The scenic quality of a streetscape, building, group of buildings, or other manmade or natural feature that creates an overall impression of an area within an urban context. For example, a scenic vista along the boundary of a community, a pleasing streetscape with trees, and well-kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of scenic quality can be organized around four basic elements: (1) site utilization, (2) buildings and structures, (3) landscaping, and (4) signage. Adverse scenic quality effects can include the loss of aesthetic features or the introduction of contrasting features that could contribute to a decline in overall scenic quality.

- **Glare:** A continuous or periodic intense light that may cause eye discomfort or be temporarily blinding to humans.

- **Light Sources:** A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture. Any translucent enclosure of a light source is considered to be part of the light source.

- **Regulations Governing Scenic Quality.** Visual impacts have been evaluated based on the project's consistency with design guidelines in the City's Specific Plan and development standards related to aesthetics in the City's Municipal Code.

- **Light and Glare.** The analysis of light and glare identifies the location of light-sensitive land uses and describes the existing ambient conditions on and in the vicinity of the project site. The analysis describes the proposed project's light and glare sources and the extent to which project lighting, including any potential illuminated signage, would spill off the project site onto adjacent light-sensitive areas. The analysis also describes the affected street frontages, the direction in which the light would be focused, and the extent to which the proposed project would illuminate sensitive land uses. The analysis also considers the potential for sunlight to reflect off of windows and building surfaces (glare) and the extent to which such glare would interfere with the operation of motor vehicles, aviation, or other activities. Glare can also be produced during evening and nighttime hours by artificial light sources, such as illuminated signage and vehicle headlights. Glare-sensitive uses generally include residences and transportation corridors (i.e., roadways).

4.1.2 Existing Environmental Setting

The project site is generally flat and is currently characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines (refer to Figure 3.3, Existing Conditions, in Chapter 3.0, Project Description). The edge conditions along Katella Avenue and Siboney Street on the southern and western borders of the project site have been improved with a public sidewalk, fencing, and ornamental landscaping. The edge condition along Winners Circle on the eastern border of the project site has been improved with a public sidewalk and driveway access points, with no landscaping. The project site is visible from its southern and eastern boundaries by vehicles

and pedestrians traveling along Katella Avenue and Winners Circle. Although the project site is also visible from Siboney Street, that street is privately owned and, therefore, does not represent a public vantage point.

Land uses surrounding the project site reflect a developed, urban area that consists of residential, commercial/retail, office, hotel, and racetrack uses. Buildings in the vicinity of the project site include retail and commercial buildings that range from one to three stories and are approximately 15 to 50 feet (ft) in height. The project site is also near the Los Alamitos Race Course grandstand, which is approximately 75 ft tall.

According to the United States Census Bureau, the City of Cypress is located within the Los Angeles—Long Beach—Anaheim, CA Urbanized Area.[1] As described in the *State CEQA Guidelines* Section 15387 and defined by the United States Census Bureau, an "urbanized area" is a central city or a group of contiguous cities with a population of 50,000 or more people, together with adjacent densely populated areas having a population density of at least 1,000 people per square mile.[2] Because the City is located in an urbanized area, the project site is also located within an urbanized area. Further, surrounding land uses in the vicinity of the project site are representative of urban densities.

The Cypress General Plan Land Use Policy Map designates the project site as "Specific Plan Area" in recognition that the project site is subject to the Amended Cypress Business and Professional Center Specific Plan (Specific Plan) (Figure 3.5, City of Cypress General Plan Land Uses).[3] The project site is part of Planning Area 5 in the Specific Plan, which is designated for Professional Office uses. Planning Area 8, which includes the Los Alamitos Race Course, is to the north of the project site.[4] Planning Area 6, which is designated for Professional Office/Hotel and Support Commercial uses, is to the west of the project site across Siboney Street. The project site currently has a zoning designation of PBP-25A, Planned Business Park (PBP), which is intended to provide for the development of educational, professional office, commercial, industrial, open space, or any public or semi-public uses.

4.1.3 Regulatory Setting

4.1.3.1 Federal Regulations

No federal policies or regulations pertaining to aesthetics are applicable to the proposed project.

4.1.3.2 State Regulations

Caltrans Scenic Highway Program. The California Department of Transportation (Caltrans) Scenic Highway Program protects the natural scenic beauty of the State's highways and corridors through

1 United States Census Bureau. 2010. Los Angeles—Long Beach—Anaheim, CA Urbanized Area No. 51445. Website: https://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/ua51445los_angeles--long_beach--anaheim_ca/DC10UA51445.pdf (accessed January 6, 2020).

2 United States Census Bureau. 2010 Census Urban Area FAQs. Website: https://www2.census.gov/geo/reference/ua/2010ua_faqs.pdf?# (accessed January 6, 2020).

3 Figure 3.5 does not reflect the approval of the Cypress Town Center and Commons Specific Plan 2.0.

4 Most of Planning Area 8 is now subject to the Cypress Town Center and Commons Specific Plan 2.0.

its designated scenic highways throughout the State. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. Other considerations given to a scenic highway designation include how much of the natural landscape a traveler may see and the extent to which visual intrusions degrade the scenic corridor.

The project site is not located in the vicinity of a State Scenic Highway. According to the List of Eligible and Officially Designated State Scenic Highways published by Caltrans, the only State-designated Scenic Highway in the County is a 4-mile portion of State Route 91 (SR-91) from State Route 55 (SR-55) to east of the Anaheim city limits.[1] This portion of SR-91 is approximately 12 miles east of the project site. The nearest State highway that is eligible for official designation as a State Scenic Highway is a portion of Pacific Coast Highway (PCH or State Route 1 [SR-1]), which is located approximately 4.9 miles southwest of the project site.

4.1.3.3 Regional Regulations

No regional policies or regulations pertaining to aesthetics are applicable to the proposed project.

4.1.3.4 Local Regulations

Cypress Zoning Ordinance. The City of Cypress Zoning Ordinance (refer to Appendix I of the City's Municipal Code) includes regulations related to zoning and lighting that are applicable to the proposed project. The Zoning Ordinance identifies development standards for various land uses, which aim at regulating aesthetics and scenic quality. The Zoning Ordinance sets forth exterior lighting standards, including the following:

- **Section 3.11.060.A (Exterior Fixtures):** Lighting fixtures shall be architecturally compatible with the character of the surrounding structure(s) and shall be energy efficient. Fixtures shall be appropriate in height, intensity, and scale to the use they are serving.

- **Section 3.11.060.B (Intensity):** The level of parking lot light projected onto any ground or wall surface shall not be less than two (2) footcandles nor more than five (5) footcandles at the base of the light fixture. Building-mounted decorative lights shall not exceed five (5) footcandles measured five (5) feet from the light source.

- **Section 3.11.060.C (Security Lighting):** Security lighting shall provide a minimum of two (2) footcandles and a maximum of three (3) footcandles at the ground level of the entrance.

- **Section 3.11.060.D (Shielding of Light Source):** Where the light source is visible from outside the project boundary, shielding shall be required to reduce glare so that neither the light source nor its image from a reflective surface shall be directly visible from any point beyond the property line. This requirement shall not apply to traffic safety lighting or public street lighting.

[1] California Department of Transportation (Caltrans). 2015, last modified December 2019. List of Eligible and Officially Designated State Scenic Highways. Website: https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx (accessed January 8, 2020).

- **Section 3.14.050.C.4 (Required Improvements for Off-Street Parking Areas):** Lighting as specified by the building official and police department, with special attention to directing light and glare away from adjacent properties. The level of parking lot light shall not exceed one footcandle at a site's property lines.

Amended and Restated Cypress Business and Professional Center Specific Plan. The Specific Plan establishes design guidelines for land uses proposed as part of the proposed project. All buildings and open space areas included as part of the proposed project would be consistent with design guidelines and lighting standards established in the Specific Plan, except where the Specific Plan references applicable design standards, if any, in the City's Zoning Ordinance. In addition to the exterior lighting standards included in the Zoning Ordinance provided above, the following development regulations included in the Specific Plan apply to the proposed project:

- **Section V.E.8.a.** Adequate lighting shall be provided for all automobile parking areas, trucking and loading area, and all pedestrian and vehicle access points.

- **Section V.E.8.b.** Parking areas shall be lighted. All lighting, interior and exterior, shall be designed and located to minimize power consumption and to confine direct illumination to the premises.

Additionally, the following design elements of the architectural design guidelines provided in the Specific Plan are applicable to the proposed project:

a. Avoid long, unarticulated building facades. Buildings with varying front setbacks are strongly encouraged.

b. Flat roofs with parapet walls to screen rooftop equipment are appropriate, although buildings with articulated varying roof planes are encouraged.

c. The use of prefab, all metal steel for sheathing of buildings is prohibited. This is not to preclude the use of metal detail within architecturally designed buildings such as "Cor-ten" steel.

d. Conceal all service areas and storage areas either within the buildings themselves or by screening walls (solid masonry or stucco stud wall of one color), preferably with appropriate accent trim.

e. Avoid long linear vistas and building edges within the development envelope and along the streetscape through variations in setbacks.

f. Buildings shall be sited in a manner that will complement the adjacent buildings and landscape. Building sites shall be developed in a coordinated manner to provide order and diversity and avoid a jumbled, confused streetscene. The designer shall consider the existing development around the subject site in order to establish a context in which to design.

4.1.4 Thresholds of Significance

The thresholds for aesthetics impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to aesthetics if it would:

Threshold 4.1.1: Have a substantial adverse effect on a scenic vista?

Threshold 4.1.2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Threshold 4.1.3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Threshold 4.1.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.1.5 Project Impacts

Threshold 4.1.1: Would the project have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include (1) scenic quality, (2) sensitivity level, and (3) view access. Although the City of Cypress does not provide a definition of scenic vistas, potential scenic vistas includes areas with views of the coastline, mountains, or other prominent scenic features that are considered significant visual resources for residents and businesses.

The City is almost entirely developed and neither the project site nor other properties in the project vicinity provide substantial views of any water bodies, mountains, hilltops, or any other significant visual resources. As such, the City has not designated any scenic corridors or scenic vistas within the City. The project site is located in a flat area and is surrounded by urban development, including the Los Alamitos Race Course to the north; a Goodwill Donation Center and Cypress Corporate Park to the northeast; commercial and retail services, including a Costco warehouse outlet and restaurant uses to the east; and a commercial center consisting of restaurant, commercial services, a 24 Hour Fitness and a Marriott Hotel to the west of the project site. In addition, the proposed project has a relatively moderate scale (i.e., the height of the tallest structure, the apartment structure, would be approximately 60 ft in height) and would not block the view of any natural features from the project site or surrounding areas. For these reasons, the development of the proposed project would not have a substantial adverse effect on a scenic vista. Therefore, there would be no impact, and no mitigation is required.

Threshold 4.1.2: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. As previously discussed, the project site is not located in the vicinity of a State Scenic Highway. The nearest State-designated Scenic Highway to the project site is a 4-mile portion of SR-91 approximately 12 miles east of the project site. The nearest State highway that is eligible for official designation as a State Scenic Highway is a portion of PCH approximately 4.9 miles southwest of the project site. Due to distance and intervening land uses, no portion of the project site or surrounding area is viewable from the officially designated portion of SR-91 or the eligible portion of PCH. Additionally, the project site consists of a paved parking lot and does not contain any buildings. Therefore, the project would not result in impacts related to the substantial damage of scenic resources within a State Scenic Highway. Therefore, there would be no impact, and no mitigation is required.

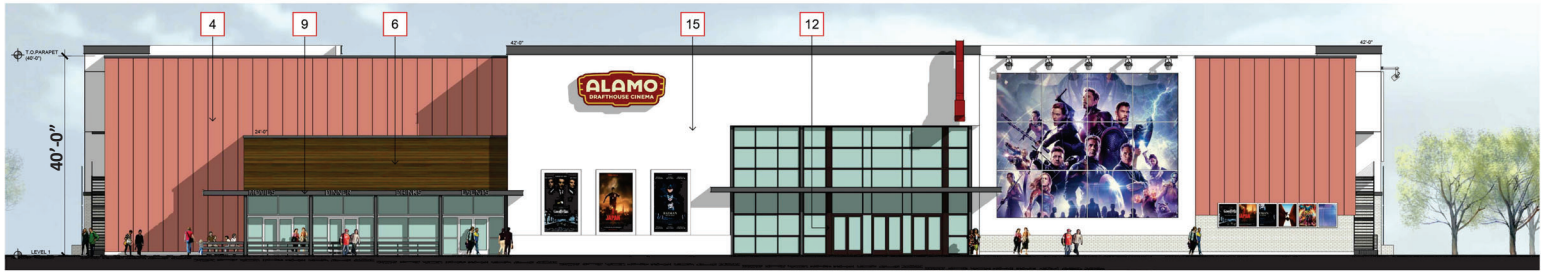
Threshold 4.1.3: In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. As stated previously, the United States Census Bureau designated the project site as part of an urbanized area because the entire City is within the Los Angeles—Long Beach—Anaheim, CA Urbanized Area. The project site is part of Planning Area 5 in the Specific Plan, which is designated for Professional Office uses. The proposed project includes residential land uses and hotel land uses that are not expressly identified as allowable uses within the Professional Office designation in the Specific Plan. The Specific Plan Amendment proposed as part of the project would create a new mixed-use land use district for the project site to allow residential and hotel uses by separating the existing Planning Area 5 into two subareas (5A and 5B) and includes development regulations for the new uses. With approval of the Specific Plan Amendment, the proposed project would be consistent with the Specific Plan designations for the project site, and the proposed project would comply with all applicable design guidelines and development regulations included in the Specific Plan and Specific Plan Amendment. The proposed Specific Plan Amendment includes minor amendments to the design guidelines included in the Specific Plan to allow super graphics (large graphics) and projecting signage for the proposed movie theater structure. The proposed project's consistency with the architectural design elements included in the Specific Plan is provided in Table 4.1.A, below.

Table 4.1.A: Specific Plan Architectural Design Elements Consistency Analysis

Architectural Design Element	Proposed Project Consistency
a. Avoid long, unarticulated building facades. Buildings with varying front setbacks are strongly encouraged.	**Consistent.** As shown in the architectural elevations provided on Figures 4.1.1 through 4.1.6, the architectural design of the proposed buildings include various plane breaks and color tones that would break up the scale and massing of the proposed project. As such, the proposed project would avoid long, unarticulated building facades. Additionally the proposed project would incorporate varying front setbacks as shown in Figure 3.7, Conceptual Site Plan, in Section 3.0, Project Description. Therefore, the proposed project would be consistent with Design Element a. of the Specific Plan.
b. Flat roofs with parapet walls to screen rooftop equipment are appropriate, although buildings with articulated varying roof planes are encouraged.	**Consistent.** The proposed project would comply with Section 3.11.100(b) of the City's Municipal Code, which requires that mechanical equipment in residential, commercial, and industrial zoning districts be enclosed within a structure or completely screened from view from surrounding properties by the use of a fence or wall. As such, rooftop equipment would be screened as appropriate. Additionally, as shown on Figures 4.1.1 through 4.1.6, the proposed project would incorporate multilevel rooftops. Therefore, the proposed project would be consistent with Design Element b. of the Specific Plan.
c. The use of prefab, all metal steel for sheathing of buildings is prohibited. This is not to preclude the use of metal detail within architecturally designed buildings such as "Cor-ten" steel.	**Consistent.** The proposed project would not utilize prefabricated or metal steel for the sheathing of buildings. The project includes the use of various metal details, which is consistent with the Specific Plan. Therefore, the proposed project would be consistent with Design Element c. of the Specific Plan.
d. Conceal all service areas and storage areas either within the buildings themselves or by screening walls (solid masonry or stucco stud wall of one color), preferably with appropriate accent trim.	**Consistent.** No outdoor storage for any on-site uses is proposed by the project. Proposed service areas as shown on Figure 3.7, Conceptual Site Plan, in Section 3.0, Project Description, would be concealed with screening walls and/or landscaping. Therefore, the proposed project would be consistent with Design Element d. of the Specific Plan.
e. Avoid long linear vistas and building edges within the development envelope and along the streetscape through variations in setbacks.	**Consistent.** As shown on Figure 3.7, Conceptual Site Plan, in Section 3.0, Project Description, the proposed project is designed with variations in setbacks along Katella Avenue, Siboney Street, and Winners Circle. Therefore, the proposed project would be consistent with Design Element e. of the Specific Plan.
f. Buildings shall be sited in a manner that would complement the adjacent buildings and landscape. Building sites shall be developed in a coordinated manner to provide order and diversity and avoid a jumbled, confused streetscene. The designer shall consider the existing development around the subject site in order to establish a context in which to design.	**Consistent.** The proposed structures would be visually consistent with adjoining uses and would consist of similar and compatible height and landscaping and would be consistent with development standards in the Specific Plan. Additionally, the proposed project would incorporate similar building materials and color pallet to create a unified design between all proposed structures. Additionally, the proposed project would conform to all architectural and landscape guidelines of the Specific Plan and all applicable development standards in the Cypress Zoning Ordinance. As such, the proposed structures would complement the adjacent buildings and landscapes. Therefore, the proposed project would be consistent with Design Element f. of the Specific Plan.

Source: City of Cypress. Amended and Restated Cypress Business and Professional Center Specific Plan (2012).



SOUTH ELEVATION



WEST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.1

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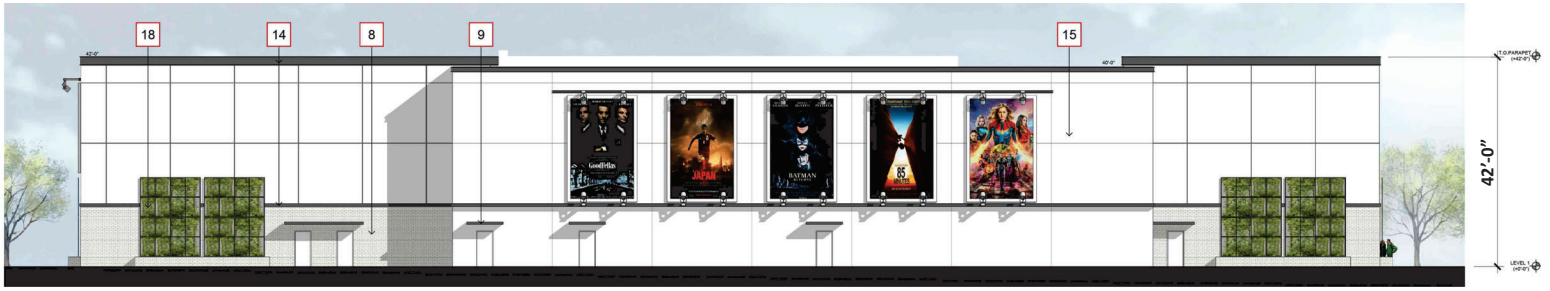
SOURCE: Architects Orange

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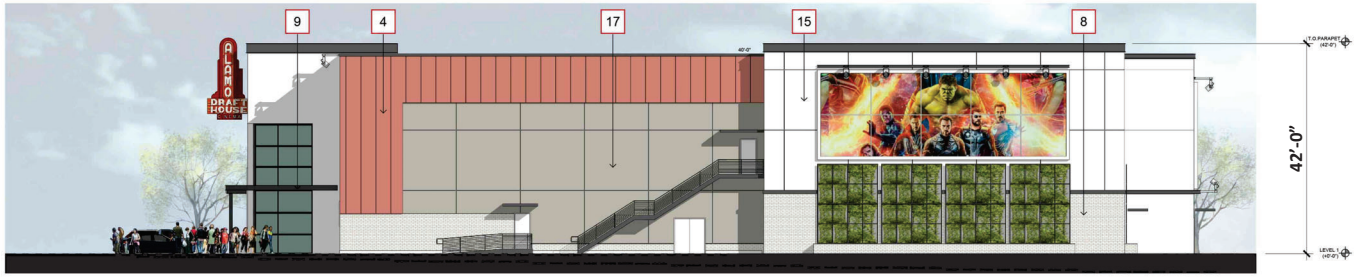
Cypress City Center

Conceptual Building Elevations – Proposed Movie Theater

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NORTH ELEVATION



EAST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.1
Page 2 of 2

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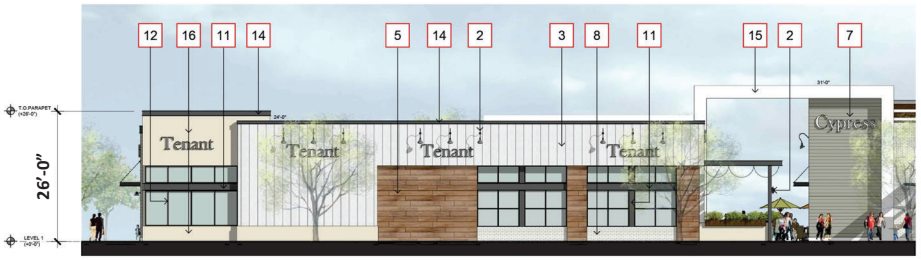
SOURCE: Architects Orange

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Cypress City Center

Conceptual Building Elevations – Proposed Movie Theater

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SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.2

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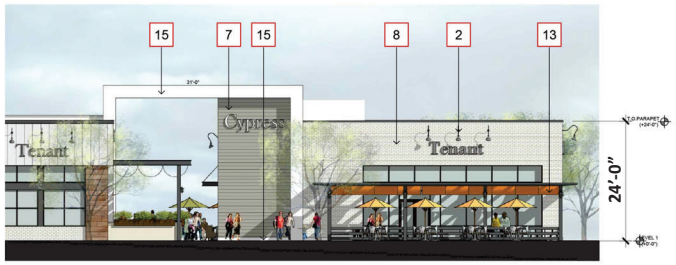
SOURCE: Architects Orange

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Cypress City Center

Conceptual Building Elevations – Proposed Retail Building A

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SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.3

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SOURCE: Architects Orange

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Cypress City Center

Conceptual Building Elevations – Proposed Retail Building B

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SOUTH ELEVATION

EAST ELEVATION



NORTH ELEVATION

WEST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.4

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SOURCE: Architects Orange

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Cypress City Center

Conceptual Building Elevations – Proposed Retail Building C

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EAST ELEVATION



SOUTH ELEVATION

MATERIAL / COLOR LEGEND

PT-1	EIFS, PAINTED, HERON PLUME SHERWIN-WILLIAMS OR EQUAL
PT-2	EIFS, PAINTED, ACCESSIBLE BEIGE SHERWIN-WILLIAMS OR EQUAL
PT-3	EIFS, PAINTED, URBANE BRONZE SHERWIN-WILLIAMS OR EQUAL
FC-1	FIBER CEMENT PANELS, NICHIHA, ARCHITECTURALBLOCK GREY
FC-2	FIBER CEMENT PANELS, NICHIHA,
ST-1	STONE OR MASONRY VENEER
MTL-1	ALUMINUM STOREFRONT AND WINDOW FRAMES, ANODIZED DARK BRONZE

LSA

FIGURE 4.1.5

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FEET

SOURCE: DesignCell Architecture

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Cypress City Center

Conceptual Building Elevations – Proposed Hotel Building

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WEST ELEVATION



NORTH ELEVATION

MATERIAL / COLOR LEGEND

PT-1	EIFS, PAINTED, HERON PLUME SHERWIN-WILLIAMS OR EQUAL
PT-2	EIFS, PAINTED, ACCESSIBLE BEIGE SHERWIN-WILLIAMS OR EQUAL
PT-3	EIFS, PAINTED, URBANE BRONZE SHERWIN-WILLIAMS OR EQUAL
FC-1	FIBER CEMENT PANELS, NICHIHA, ARCHITECTURALBLOCK GREY
FC-2	FIBER CEMENT PANELS, NICHIHA,
ST-1	STONE OR MASONRY VENEER
MTL-1	ALUMINUM STOREFRONT AND WINDOW FRAMES, ANODIZED DARK BRONZE

LSA

FIGURE 4.1.5
Page 2 of 2

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SOURCE: DesignCell Architecture

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Cypress City Center

Conceptual Building Elevations – Proposed Hotel Building

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NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

MATERIAL / COLOR LEGEND

1	CONCRETE CURB
2	WALL - MOUNTED LIGHT FIXTURE
3	ARCHITECTURAL METAL CLADDING, COLOR "LIGHT GRAY"
4	ARCHITECTURAL METAL CLADDING COLOR TO MATCH THEATER STANDARD
5	STONE VENEER
6	PORCELAIN TILE WITH "WOOD" FINISH AND COLOR
7	FIBER CEMENT SIDING COLOR "MEDIUM GRAY"
8	BRICK VENEER
9	METAL CANOPY COLOR "DARK GRAY"
10	METAL SLATS WITH "WOOD" FINISH & COLOR
11	METAL CLADDING, COLOR "DARK BRONZE"
12	ANODIZED ALUM. STOREFRONT, COLOR "DARK BRONZE"
13	METAL TRELLIS W/ FABRIC SWAG
14	METAL CAP/ METAL TRIM, COLOR "DARK GRAY"
15	STUCCO COLOR 1
16	STUCCO COLOR 2
17	STUCCO COLOR 3
18	METAL LATTICE

LSA

FIGURE 4.1.6

0 35.5 70

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SOURCE: Architects Orange

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Cypress City Center

Conceptual Building Elevations – Proposed Residential Building

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The proposed project involves the construction of a four-story apartment complex on the northwestern portion of the project site, a movie theater on the northeastern portion of the project site, a five-story hotel on the southwestern portion of the project site, and three commercial/retail structures on the southeastern portion of the project site. Conceptual elevations of the proposed structures are shown in Figures 4.1.1 through 4.1.6. The proposed apartment structure would be approximately 60 ft in height, the proposed hotel would be approximately 60 ft in height, and the proposed movie theater and retail structures would be approximately 42 ft and 32 ft in height, respectively. The proposed heights of the project would be lower than the maximum height of 99 ft allowed under the Specific Plan. Additionally, the proposed project's building heights are similar to and compatible with the commercial, office, and business park uses that surround the project site, as well as the 75 ft high Los Alamitos Race Course grandstand to the north of the project site. In addition, the proposed apartment complex would be designed to wrap around the parking structure, which would be approximately the same height as the apartment building. As shown in Figure 4.1.6, this "wrap" design would conceal the parking structure from view and avoid any potential visual conflicts with the surrounding land uses.

The proposed project would also conform to architectural and landscape guidelines of the Specific Plan and all applicable development standards in the Cypress Zoning Ordinance. Therefore, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality. As such, impacts would be less than significant, and no mitigation is required.

Threshold 4.1.4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.1.5.1 Construction

Less Than Significant Impact. Construction activities would occur only during daylight hours. Any construction-related illumination during evening and nighttime hours would be used for safety and security purposes only and would occur only for the duration required for the temporary construction process. Light resulting from construction activities would not substantially impact sensitive uses, substantially alter the character of surrounding uses or interfere with the performance of off-site activities. In addition, construction activities are not anticipated to result in flat, shiny surfaces that would reflect sunlight or cause other natural glare. Minor glare from sunlight on construction equipment and vehicle windshields is not anticipated to impact visibility in the area because (1) relatively few construction vehicles and pieces of construction equipment would be used on the project site, and (2) the construction site would be fenced and shielded from pedestrian and vehicular views. In addition, construction vehicles would not be operating at night and thus would not create nighttime sources of glare. Therefore, construction of the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, and light and glare impacts associated with construction would be less than significant. No mitigation is required.

4.1.5.2 Operation

Less Than Significant Impact. In the existing condition, the project site produces light and glare from a lighted surface parking area. Twelve light poles that are approximately 30 ft tall exist on the parking area and are an existing source of light on the project site. Existing sources of light in the

project vicinity include headlights on nearby roadways, building facade and interior lighting, pole-mounted lighting in the parking areas of adjacent developments, and lighting associated with the Los Alamitos Race Course. The adjacent commercial center with a hotel and gym west of the project site and commercial and retail services, including a Costco warehouse outlet and restaurant uses to the east of the project site, currently emit light and glare along Katella Avenue. Lighting from existing distant development within the City also contributes to the background lighting in the project vicinity.

New light sources created by the proposed project would include interior and exterior building lighting, security lighting, signage, and parking lot lighting. The proposed lighting sources would be similar to other lighting sources in the project vicinity and would not generate artificial light levels that are out of character with the surrounding area, which is densely developed and characterized by a high degree of human activity and ambient light during the day and night. Additionally, the proposed project would comply with the development regulations outlined in Section V.E.8., Lighting, of the Specific Plan, which require that lighting be designed to confine direct illumination to the premises of the development, and that fixture heights for walkways and other areas within the project be identified. The Design Guidelines require that lighting not result in glare on neighboring sites by using fixtures that are fully shielded. Landscaping and buffering requirements set forth in the Specific Plan would also reduce impacts created by lighting.

In addition, all project lighting is required to meet all applicable lighting standards in the Cypress Zoning Ordinance. As required by Section 3.11.060.A (Exterior Features) of the Zoning Ordinance, lighting fixtures shall be architecturally compatible with the character of the surrounding structure(s) and shall be energy efficient. Fixtures shall be appropriate in height, intensity, and scale to the use they are serving, In accordance with Section 3.11.060.B (Intensity), the level of parking lot light projected onto any ground or wall surface shall not be more than 5 footcandles at the base of the light fixture and building-mounted decorative lights shall not exceed 5 footcandles measured 5 ft from the light source. In accordance with Section 3.11.060.C (Security Lighting), security lighting shall provide a maximum of 3 footcandles at the ground level of the project entrances. Pursuant to Section 3.11.060.D (Shielding of Light Source), where a project light source is visible from outside the project boundary (other than public street lighting), the light source shall be shielded to reduce glare so that neither the light source nor its image from a reflective surface shall be directly visible from any point beyond the property line. Finally, as required by Section 3.14.050.C.4 (Required Improvements for Off-Street Parking Areas), the level of parking lot light shall not exceed 1 footcandle at the boundaries of the project site.

Although the proposed project would increase the overall intensity of on-site land uses and associated lighting, the increase in lighting would not result in substantial increases in light intensity at off-site locations. In addition, light intensity diminishes rapidly as an observer moves away from the light source. As such, the intensity of project-related lighting would be concentrated on site with little potential to create perceptible changes in ambient lighting intensity at off-site, light-sensitive locations.

Daytime glare can result from natural sunlight reflecting from a shiny surface that would interfere with the performance of an off-site activity, such as the operation of a motor vehicle. Reflective surfaces can be associated with window glass and polished surfaces. The proposed buildings would

incorporate a variety of building materials, which would primarily be non-reflective materials (i.e., neutral colors and a variety of materials, such as tile, cement, plaster, and wood).Therefore, these materials would not have the potential to produce a substantial degree of glare.

Nighttime lighting and glare sources from the proposed project could also include lighting from interior and exterior building lighting, security lighting, signage, parking lot lighting, and vehicle headlights. The nighttime glare produced by these sources would be similar to the existing nighttime glare produced by the surrounding commercial/retail, residential and hotel uses and would not result in enough glare to be considered substantial or affect nighttime views because lighting would be designed to be consistent with the development regulations outlined in Section V.E.8., Lighting, of the Specific Plan and is required to meet all applicable lighting standards in the Cypress Zoning Ordinance as discussed above.

For these reasons, the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the surrounding urban area, and project impacts would be less than significant. No mitigation is required.

4.1.6 Level of Significance Prior to Mitigation

The proposed project would not result in any significant impacts related to aesthetics and no mitigation is required.

4.1.7 Regulatory Compliance Measures and Mitigation Measures

No mitigation measures or regulatory compliance measures are required.

4.1.8 Level of Significance after Mitigation

The proposed project would not result in any significant impacts related to aesthetics.

4.1.9 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for aesthetics. The cumulative impact area for aesthetics related to the proposed project is the City of Cypress. As shown in Table 4.A, Summary of Related Projects, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, three residential projects and a sports park are approved or under construction within the City. Each of these projects, as well as all proposed projects in the City, would be subject to their own consistency analysis for policies and regulations governing scenic quality and would be reviewed for consistency with any applicable Specific Plan goals and policies and Zoning Code development standards. If there were any potential for significant impacts to aesthetics, appropriate mitigation measures would be identified to reduce and/or avoid impacts related to aesthetics.

As described above in Section 4.1.5, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to aesthetics. The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to aesthetics. With compliance with these regulations, cumulative impacts related to aesthetics would be less than significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to aesthetics.

4.2 AIR QUALITY

This section describes the potential air quality impacts for the Cypress City Center project (proposed project) and specifically addresses short-term impacts during construction, including fugitive dust and equipment emissions, long-term emissions associated with operation of the proposed project (including vehicular travel and stationary equipment), and how potential impacts correlate to human health.

4.2.1 Methodology

The proposed project would result in criteria pollutant emissions from construction and operational sources. Construction activities would generate emissions at the site from off-road construction equipment, and on roadways as a result of construction-related truck hauling, vendor deliveries, and worker commuting. Operational activities would also generate emissions at the project site from miscellaneous onsite sources, such as natural gas combustion for cooking, heating, and landscaping equipment, and from operational-related traffic. This analysis utilized the California Emission Estimator Model version 2016.3.2 (CalEEMod) to quantify the criteria pollutant emissions for both construction and operation of the proposed project. The maximum daily emissions are calculated for the criteria pollutants. The CalEEMod output is contained in Appendix B of this Draft EIR.

Guidance from the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the South Coast Air Quality Management District (SCAQMD), the Traffic Impact Analysis prepared by LSA, and emissions modeling software (specifically, CalEEMod[1]) were used to calculate the criteria pollutant emissions from the proposed project. The letter from SCAQMD (December 17, 2019) recommended the use of the SCAQMD's *CEQA Air Quality Handbook* (1993, currently being revised), use of CalEEMod, SCAQMD's CEQA regional pollutants significance thresholds, a mobile source health risk assessment, and the use of CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005). Additionally, SCAQMD provided information about SCAQMD permits and data availability and suggested potential mitigation measures and consideration of potential alternatives to lessen impacts to air quality. This analysis takes into account the recommendations provided by SCAQMD. A mobile source health risk assessment technical guidance was developed by SCAQMD to address potential diesel particulate matter (DPM) impacts from the following activities: truck idling and movement, ship hoteling and train idling. SCAQMD's definition of the truck idling and movement activities would include development projects such as truck stops, warehouse/distribution centers, or transit centers, which are not a part of the proposed project. Therefore, a mobile source health risk assessment is not necessary for this project.

CalEEMod is a statewide program designed to calculate both criteria and greenhouse gas (GHG) emissions from development projects in California. This model was initially developed under the auspices of the SCAQMD and received input from other California air quality districts. It is currently supported statewide for use in quantifying the emissions associated with development projects undergoing environmental review. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available.

[1] California Emissions Estimator Model. 2016. California Emissions Estimator Model. Version 2016.3.1. Website: http://www.caleemod.com/ (accessed: December 2019).

These models and default estimates use sources such as the USEPA AP-42 emission factors;[1] CARB's on-road and off-road equipment emission models, such as the EMission FACtor model (EMFAC) and the Off-road Emissions Inventory Program model (OFFROAD); and studies commissioned by California agencies, such as the California Energy Commission (CEC) and the California Department of Resources Recycling and Recovery (CalRecycle).

CalEEMod is based on CARB-approved off-road and on-road mobile-source emission factor models (OFFROAD2011 and EMFAC2014, respectively). It is designed to calculate construction and operational emissions for land development projects and allows for the input of project-specific information. OFFROAD2011[2] is an emissions factor model used to calculate emission rates from off-road mobile sources (e.g., construction equipment, agricultural equipment). EMFAC2014[3] is a USEPA approved emissions factor model used to calculate emissions rates from on-road vehicles (e.g., passenger vehicles, haul trucks).

CalEEMod provides a platform to calculate both construction emissions and operational emissions from a development project. It calculates both the daily maximum and annual average for criteria pollutants as well as total or annual GHG emissions. The model also provides default values for water and energy use. Specifically, the model performs the following calculations:

- Short-term construction emissions associated with demolition, site preparation, underground utility installation, grading, building, coating, and paving from off-road construction equipment; on-road mobile equipment associated with workers, vendors, delivery, and hauling; fugitive dust associated with grading, demolition, truck loading, and roads; and volatile emissions of reactive organic gases (ROGs) from architectural coating and paving.

- Operational emissions associated with the fully built-out development project, such as on-road mobile vehicle traffic generated by the land uses, fugitive dust associated with roads, volatile emissions of ROGs from architectural coatings, off-road emissions from landscaping equipment, volatile emissions of ROGs from consumer products and cleaning supplies, wood stoves and hearth usage, natural gas usage in the buildings, electricity usage in the buildings, water usage by the land uses, and solid waste disposal by the land uses.

In addition, CalEEMod contains default values and existing regulation methodologies to use in each specific local air quality district region. Appropriate statewide default values can be utilized if regional default values are not defined. This analysis utilized project-specific inputs and relevant

[1] The USEPA maintains a compilation of Air Pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Website: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors (accessed: December 2019).

[2] California Air Resources Board (CARB). 2019. Off Road Mobile Source Emission factors. Website: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools (accessed: December 2019).

[3] CARB. 2019. EMFAC 2017 Web Database. Website: https://www.arb.ca.gov/emfac/2014 (accessed December 2019).

model default factors for the Orange County (County) area, which is within the SCAQMD jurisdiction for the emission inventory, consistent with SCAQMD requirements.

Additional details regarding the specific methodologies used by CalEEMod can be found in the CalEEMod User's Guide and associated appendices.[1] The CalEEMod output files for the proposed project are provided for reference in Appendix B.

4.2.2 Existing Environmental Setting

The City is part of the South Coast Air Basin (SCAB) and is under the jurisdiction of SCAQMD. Background information about air pollutants and health effects, climate, meteorological conditions, and regional air quality conditions in the SCAB and local air quality conditions in the vicinity of the project site is provided below.

4.2.2.1 Air Pollutants and Health Effects

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants:[2] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air quality district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no known direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and volatile organic compounds (VOC).

Occupants of certain types of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their

1 California Emissions Estimator. 2016. California Emissions Estimator Model User's Guide. Version 2016. 3.2. February. Website: http://www.caleemod.com/ (accessed: December 2019).

2 United States Environmental Protection Agency (USEPA). 2014. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

4.2.2.2 Ozone

Rather than being directly emitted, ozone (smog) is formed by photochemical reactions between NO_x and VOC. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

4.2.2.3 Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as byproducts of fuel combustion; through abrasion, such as tire or brake lining wear; or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

4.2.2.4 Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

4.2.2.5 Nitrogen Dioxide

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

4.2.2.6 Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

4.2.2.7 Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the USEPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 to 0.15 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase in 76 monitors nationally.

4.2.2.8 Volatile Organic Compounds

VOCs (also known as reactive organic gases [ROGs] and reactive organic compounds [ROCs]) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

4.2.2.9 Vinyl Chloride

Vinyl Chloride (VC) is a chemical building block, or monomer, used in the production of polyvinyl chloride (PVC). PVC is used to make materials, including pipes, used in the construction, packaging, electrical, and transportation industries. Major sources of VC include PVC production and fabrication facilities and, at the other end of PVC's lifecycle, as PVC deteriorates, landfills and publicly owned treatment works. VC is carcinogenic. VC is primarily of concern as a carcinogenic toxic air contaminant (TAC) at hot spots. It is regulated as a TAC to allow implementation of health-protective control measures at levels below the ambient standard.

4.2.2.10 Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. In addition, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the State standard could result in exposure to a very disagreeable odor.

For the proposed project, six criteria pollutants were evaluated—NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and O_3—using VOCs[1] and NO_X as surrogates. These pollutants were analyzed because they are considered to be pollutants of concern based on the type of emission sources associated with construction and operation of the proposed project, and are thus included in this assessment. Because the ambient concentrations of lead, VC, H_2S, and visibility-reducing particles are very low and the proposed project would not include industrial production facilities or generate substantial

[1] The emissions of VOCs and ROGs are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOCs.

amounts of exhaust, lead, VC, H_2S, and visibility-reducing particles are not considered to be pollutants of concern for the proposed project and are not analyzed below.

4.2.2.11 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the USEPA and the CARB. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

TACs do not have ambient air quality standards, but are regulated by the USEPA, CARB, and the SCAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[1] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as "on-road" sources such as trucks and buses traveling on freeways and local roadways.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[2] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020, average statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the CARB's Diesel Risk Reduction Plan,[3] meaning that the statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000.

Table 4.2.A summarizes the sources and health effects of air pollutants discussed in this section. Table 4.2.B presents a summary of State and Federal Ambient Air Quality Standards (AAQS).

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1 CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

2 CARB, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

3 Ibid.

Table 4.2.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust • Natural events, such as decomposition of organic matter	• Reduced tolerance for exercise • Impairment of mental function • Impairment of fetal development • Death at high levels of exposure • Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust • High temperature stationary combustion • Atmospheric reactions	• Aggravation of respiratory illness • Reduced visibility • Reduced plant growth • Formation of acid rain
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight	• Aggravation of respiratory and cardiovascular diseases • Irritation of eyes • Impairment of cardiopulmonary function • Plant leaf injury
Lead (Pb)	• Contaminated soil	• Impairment of blood functions and nerve construction • Behavioral and hearing problems in children
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions	• Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardiorespiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels • Smelting of sulfur-bearing metal ores Industrial processes	• Aggravation of respiratory diseases (asthma, emphysema) • Reduced lung function • Irritation of eyes • Reduced visibility • Plant injury • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (2015).

Table 4.2.B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	-		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m³)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m³)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m³)		100 ppb (188 µg/m³)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m³		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m³)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m³)	
	1-Hour	0.25 ppm (655 µg/m³)		75 ppb (196 µg/m³)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Source: California Air Resources Board, 2016. (Website: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

4.2.2.12 Climate/Meteorology

Air quality in the SCAB is affected not only by various emission sources (mobile and industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second-largest urban area in the United States gives the SCAB the worst air pollution problem in the nation.

The SCAB is a coastal plain characterized by connecting broad valleys and low hills, delineated by the Pacific Ocean as its southwestern border, and fringed by high mountains that form the inland portion of its border. The region lies in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The resulting climate is mild and tempered by cool ocean breezes. It maintains moderate temperatures and comfortable humidity, and precipitation is typically limited to a few storms during the winter wet season. This weather pattern is fairly predictable. However, periods of extremely hot weather, winter storms, or Santa Ana winds do exist.

Although the SCAB has a semi-arid climate, air near the earth's surface is generally moist due to the presence of a shallow marine layer. With very low average wind speeds, there is a limited ability to disperse air contaminants horizontally. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the SCAB. Summer wind flow patterns represent worst-case conditions for air pollution, as this is a period of higher temperatures and more sunlight, which results in ozone (O_3) formation.

Air pollutant emissions within the SCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawnmowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

4.2.2.13 Attainment Status

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as either does not meet the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as does not meet the primary standards, does not meet the secondary standards, cannot be classified, or better than national standards.

Table 4.2.C provides a summary of the attainment status for the SCAB with respect to National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

Table 4.2.C: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1 hour	Nonattainment	Extreme Nonattainment
O_3 8 hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	N/A	Attainment/Unclassified
Lead	Attainment	Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: South Coast Air Quality Management District (2018).
[1] Except in Los Angeles County.
CARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SO_2 = sulfur dioxide

4.2.2.14 Regional Air Quality

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climate is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Meteorological conditions and topography affect the dispersion of pollutants and make the SCAB susceptible to air pollution. The extent and severity of the air pollution problem in the SCAB is also affected by manmade influences, such as development patterns and lifestyle.

The greatest air pollution impacts throughout the SCAB occur from June through September. This condition is generally attributed to the high emissions, as well as light winds and shallow vertical atmospheric mixing, which reduce dispersion. Pollutant concentrations in the SCAB vary with location, season, and time of day. O_3 concentrations, for example, tend to be higher in the inland valleys than either along the coast or in the far inland areas of the SCAB and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air pollution levels in Southern California. However, the SCAB still fails to meet federal standards for O_3 and $PM_{2.5}$.

In 2008, SCAQMD released a SCAB-wide air toxics study, Multiple Air Toxics Exposure Study (MATES-III).[1] The MATES-III study represents one of the most comprehensive air toxics studies ever conducted in an urban environment. The study set out to estimate the cancer risk from toxic air emissions throughout the SCAB by conducting a comprehensive monitoring program, updating the emissions inventory of TACs, and modeling emissions to characterize health risks for residents throughout the region. The study calculated an average carcinogenic risk from air pollution in the SCAB of approximately 1,200 in 1 million over a 70-year duration. Mobile sources (e.g., cars, trucks, trains, ships, and aircraft) represent the greatest contributors. Approximately 85 percent of the risk was attributed to DPM emissions and approximately 10 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde). Approximately 5 percent of all carcinogenic risk was attributed to stationary sources (which include industries and certain other businesses, such as dry cleaners and chrome plating operations).

On May 1, 2015, the SCAQMD released a MATES IV Final Report.[2] This study showed a dramatic reduction (70 percent on average) in the level of DPM measured at the 10 monitoring sites compared to MATES III. The study also concluded that the average carcinogenic risk from air pollution in the SCAB is approximately 418 in 1 million (a 65 percent overall reduction from MATES III) based on monitoring. Mobile sources (e.g., cars, trucks, trains, ships, and aircraft) account for 90 percent of the air toxics risk, and DPM accounts for 68 percent of the air toxics risk.[3]

4.2.2.15 Local Air Quality

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the SCAB. The air quality monitoring station closest to the project site is the 1630 W. Pampas Lane ambient air quality monitoring station in Anaheim. The air quality trends from this station are used to represent the ambient air quality in the vicinity of the project site. Ambient air quality in the vicinity of the project site from 2016 to 2018 is shown in Table 4.2.D. SO_2 is not monitored at the Anaheim station; therefore, the next closest available SO_2 data at the 2850 Mesa Verde Drive East ambient air quality monitoring station in Costa Mesa is included in Table 4.2.D.

Pollutant monitoring results for the years 2016 to 2018 at the 1630 W. Pampas Lane, Anaheim ambient air quality monitoring station indicate that air quality in the project vicinity has generally been good. As indicated in the monitoring results, no violations of the federal PM_{10} standard occurred during the 3-year period. The State PM_{10} standard was exceeded three times in 2016, five times in 2017, and an unknown number of times in 2018. $PM_{2.5}$ levels exceeded the federal standard once in 2016, seven times in 2017, and an unknown number of times in 2018.

1 SCAQMD. 2008. MATES III. Website: https://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iii (accessed December 16, 2019).

2 SCAQMD. 2015b. MATES IV. Website: https://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iv (accessed: December 16, 2019).

3 SCAQMD. 2015a. Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin. Website: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=4 (accessed December 16, 2019).

Table 4.2.D: Ambient Air Quality at the 1630 W. Pampas Lane, Anaheim Monitoring Station

Pollutant	Standard	2016	2017	2018
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.6	2.5	2.3
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.1	2.1	1.9
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.103	0.090	0.112
Number of days exceeded:	State: > 0.09 ppm	2	0	ND
Maximum 8-hour concentration (ppm)		0.075	0.076	0.071
Number of days exceeded:	State: > 0.07 ppm	4	4	ND
	Federal: > 0.08 ppm	4	4	1
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m³)		74.0	95.7	129.0
Number of days exceeded:	State: > 50 µg/m³	3	5	ND
	Federal: > 150 µg/m³	0	0	0
Annual arithmetic average concentration (µg/m³)		28.0	26.9	ND
Exceeded for the year:	State: > 20 µg/m³	Yes	Yes	ND
	Federal: > 50 µg/m³	No	No	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m³)		45.5	56.2	65.1
Number of days exceeded:	Federal: > 35 µg/m³	1	7	ND
Annual arithmetic average concentration (µg/m³)		9.4	11.7	11.4
Exceeded for the year:	State: > 12 µg/m³	No	No	No
	Federal: > 12 µg/m³	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.064	0.081	0.066
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.015	0.014	0.014
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[1]				
Maximum 1-hour concentration (ppm)		0.0033	0.0017	ND
Number of days exceeded:	State: > 0.25 ppm	0	0	ND
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		0.0007	0.0005	ND
Number of days exceeded:	State: > 0.04 ppm	0	0	ND
	Federal: > 0.14 ppm	0	0	ND
Annual arithmetic average concentration (ppm)		0.0001	0.0001	ND
Exceeded for the year:	Federal: > 0.030 ppm	No	No	ND

Source: CARB (2019); USEPA (2019).

[1] Data taken at the 2850 Mesa Verde Drive East, Costa Mesa ambient air quality monitoring station.

µg/m³ = micrograms per cubic meter
CARB = California Air Resources Board
ND = No data. There was insufficient (or no) data to determine the value.
ppm = parts per million
USEPA = United States Environmental Protection Agency

The State 1-hour ozone standard was exceeded twice in 2016 and an unknown number of times in 2018. In addition, the State 8-hour ozone standard was exceeded four times in 2016, four times in 2017, and an unknown number of times in 2018 and the federal 8-hour ozone standard was exceeded four times in 2016, four times in 2017, and once in 2018. The CO, SO_2, and NO_2 standards were also not exceeded in this area during the 3-year period.

As part of the MATES-III Study, the SCAQMD prepared a series of maps that show regional trends in estimated outdoor inhalation cancer risk from toxic emissions as part of an ongoing effort to provide insight into relative risks. The maps' estimates represent the number of potential cancers per million people associated with a lifetime of breathing air toxics (24 hours per day outdoors for 70 years) in parts of the area. The MATES-III map is the most recently available map to represent existing conditions near the project site. Based on the interactive map, the average cancer risk around the project site was approximately 1,280 in 1 million. As discussed earlier, the SCAQMD released MATES IV Draft Final Report on April 1, 2015.

4.2.2.16 Surrounding Uses

To the north of the project site is a surface parking area for the Los Alamitos Race Course and the Los Alamitos Race Course. To the east of the project site across Winners Circle is a commercial center containing a Costco and other retail/restaurant uses. The area west of the project site across Siboney Street is a retail center, including a 24 Hour fitness, and a two-story church. To the south, on the far side of Katella Avenue, are commercial and multi-family uses, behind which are single-family residences.

The Air Quality Element of the City's General Plan states that sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (i.e., sensitive receptors) who are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes.

The closest sensitive receptors include the multi-family and single-family residences as close as 350 feet (ft) south of the project site. Other surrounding land uses (such as commercial uses) are not considered sensitive receptors.

4.2.3 Regulatory Setting

The USEPA and the CARB regulate direct emissions from motor vehicles. The SCAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

4.2.3.1 Federal Regulations

The 1970 Federal Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of

areas of the nation that exceed the standards. Under the Federal Clean Air Act (CAA), State, and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

4.2.3.2 State Regulations

California Clean Air Act. In 1988, the California Clean Air Act (CCAA) required that all air quality districts in the State endeavor to achieve and maintain CAAQS for carbon monoxide, ozone, sulfur dioxide, and nitrogen dioxide by the earliest practical date. The California Clean Air Act provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

California Air Resources Board. The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Assembly Bill 2588 Air Toxics "Hot Spots" Information and Assessment Act. Under Assembly Bill (AB) 2588, stationary sources of air pollutants are required to report the types and quantities of certain substances that their facilities routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, determine health risks, and notify nearby residents of significant risks.

The California Air Resources Board Handbook. CARB has developed an Air Quality and Land Use Handbook[1] (the CARB Handbook, 2005), which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. According to the CARB Handbook, recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that county and city planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

Land use designations with air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the CARB Handbook include taking steps to avoid siting new, sensitive land uses:

[1] CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook). April.

- Within 500 ft of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day;
- Within 1,000 ft of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 ft of any dry cleaning operation (for operations with two or more machines, provide 500 ft); and
- Within 300 ft of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The CARB Handbook specifically states that its recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations are generalized and do not consider site-specific meteorology, freeway truck percentages, or other factors that influence risk for a particular project site. The purpose of this guidance is to further examine project sites for actual health risk associated with the location of new sensitive land uses.

4.2.3.3 Local and Regional Policies and Regulations

South Coast Air Quality Management District. The SCAQMD has jurisdiction over most air quality matters in the SCAB. This area includes all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. Los Angeles County is a subregion of the SCAQMD jurisdiction. The SCAQMD is the agency principally responsible for comprehensive air pollution control in the SCAB in and is tasked with implementing certain programs and regulations required by the CAA and the CCAA. The SCAQMD prepares plans to attain NAAQS. SCAQMD is directly responsible for reducing emissions from stationary (area and point) sources. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

The proposed project could be subject to the following SCAQMD rules and regulations:

- **Regulation IV - Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/shutdown exemptions, and breakdown events. These prohibitions will apply to future development facilitated by approval of the proposed project.
    - **Rule 402 - Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public.

- **Rule 403 - Fugitive Dust:** This rule requires the prevention, reduction, or mitigation fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 $\mu g/m^3$ and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Control measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the USEPA. In addition, SCAQMD Rule 403(e), Additional Requirements for Large Operations, includes requirements to provide Large Operation Notification Form 403 N, appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control training class in the South Coast Air Basin.

- **Regulation XI - Source Specific Standards:** Regulation XI sets emissions standards for different sources.

  - **Rule 1113 - Architectural Coatings:** This rule limits the amount of volatile organic compounds (VOCs) from architectural coatings and solvents, which lowers the emissions of odorous compounds. Future development facilitated by approval of the project will comply with Rule 1113.

The SCAQMD is responsible for demonstrating regional compliance with ambient air quality standards but has limited indirect involvement in reducing emissions from fugitive, mobile, and natural sources. To that end, the SCAQMD works cooperatively with CARB, the Southern California Association of Governments (SCAG), county transportation commissions, local governments, and other federal and State government agencies. It has responded to this requirement by preparing a series of AQMPs to meet the CAAQS and NAAQS. SCAQMD and SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the SCAB. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. Every 3 years, SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon.[1]

SCAQMD approved the 2016 AQMP on March 3, 2017, and submitted the plan to CARB on March 10, 2017. Key elements of the 2016 AQMP include the following:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)

- A strategy with fair-share emission reductions at the federal, State, and local levels

- Investment in strategies and technologies meeting multiple air quality objectives

- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero-emission and near-zero emission technologies

[1] South Coast Air Quality Management District (SCAQMD). 2017. *Final 2016 Air Quality Management Plan*. March.

- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on "black box" future technology (FCAA Section 182(e)(5) measures)

Southern California Association of Governments. SCAG is the federally designated Metropolitan Planning Organization (MPO) for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for the discussion of regional issues related to transportation, the economy and community development, and the environment. SCAG is a council of governments and acts as a regional planning agency. With regard to air quality planning, SCAG prepares the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality–related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting federal and State mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

On April 7, 2016, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Using growth forecasts and economic trends, the RTP provides a vision for transportation throughout the region for the next 20 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The SCS is a newly required element of the RTP, which integrates land use and transportation strategies to achieve CARB emissions reduction targets. The inclusion of the SCS is required by Senate Bill (SB) 375, which was enacted to reduce greenhouse gas (GHG) emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. The RTP/SCS would successfully achieve and exceed the GHG emission-reduction targets set by CARB by achieving an 8 percent reduction by 2020, an 18 percent reduction by 2035, and a 21 percent reduction by 2040 compared to the 2005 level on a per capita basis. This RTP/SCS also meets criteria pollutant emission budgets set by the USEPA.

The 2016–2040 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the NAAQS as set forth by the CAA. Even with ongoing aggressive control strategies, ever more stringent national O_3 standards require further NO_X emission reductions in the SCAG region. In the SCAB, for example, it is estimated that NO_X emissions will need to be reduced by approximately 50 percent in 2023 and an additional 15 percent NO_X reduction beyond 2023 levels by 2031. Most sources of NO_X emissions, cars and factories, are already controlled by over 90 percent. The level of emission reduction required is so significant that 2030 emissions forecast from just three sources—ships, trains, and aircraft—would lead to O_3 levels near the Federal standard. To accomplish the reduction required to meet O_3 standards, the 2016–2040 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2040 time frame and clear steps to move toward this objective.

SCAG submits a list of transportation-related projects (in the RTP/SCS) for potential funding by the Federal Highway Administration (FHWA). The FHWA will review and approve either portions of or the entire list of transportation projects. This review will include a determination regarding whether the Federal agency's actions on these transportation projects would conform to the California State Implementation Plan (SIP). SCAQMD incorporates the SCAG RTP/SCS emission budget for mobile sources into the AQMP emissions inventory analysis for all sources of emissions (including stationary, area, and mobile). Conformity analysis and the USEPA review and approval actions are not subject to California Environmental Quality Act (CEQA) review.

4.2.3.4 Local Regulations

City of Cypress General Plan. The Air Quality Element of the City's General Plan is intended to protect public health and welfare by implementing measures that allow the SCAB to attain federal and State air quality standards. To achieve this goal, the Air Quality Element sets forth a number of programs to reduce current pollutant emissions and to require new development to include measures to comply with air quality standards. The Air Quality Element identifies goals and policies to reduce the generation of pollutants. It also recognizes that air quality is a regional issue affecting the entire SCAB. Thus, most of the goals and policies in the Air Quality Element apply generally to the City, but not necessarily to individual development projects.

4.2.4 Thresholds of Significance

The thresholds for air quality impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to air quality if it would:

Threshold 4.2.1: Conflict with or obstruct implementation of the applicable air quality plan?

Threshold 4.2.2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Threshold 4.2.3: Expose sensitive receptors to substantial pollutant concentrations?

Threshold 4.2.4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

As stated in Appendix G of the *State CEQA Guidelines*, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations about a project's impacts. This Draft EIR uses the adopted thresholds of the SCAQMD, the local air quality management district.

4.2.4.1 Regional Emissions Thresholds

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the SCAB. The emissions thresholds were established based on the attainment status of the SCAB with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Table 4.2.E lists the CEQA significance thresholds for construction and operational emissions established for the SCAB.

Table 4.2.E: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOC	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD. Air Quality Significance Thresholds. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf (accessed December 2019).

CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Projects in the SCAB with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which SCAQMD developed and that apply throughout the SCAB, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

4.2.4.2 Localized Impacts Analysis

The SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.[1] This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LSTs) are developed based on the size or total area of the emission source, the ambient air quality in the

[1] SCAQMD. 2008. *Final Localized Significance Threshold Methodology.* July.

source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the nearby Central Orange County area (SRA 17). SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter source-receptor distances. As identified above, the closest sensitive receptors include the multi-family and single-family residences as close as 350 ft south of the project site. The SCAQMD has produced look-up tables for projects that disturb less than or equal to 5 acres daily. The SCAQMD has also issued guidance on applying the CalEEMod emissions software to LSTs for projects greater than 5 acres. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, based on the CalEEMod default list of equipment (i.e., four dozers, one grader, and one excavator) required for the proposed project, the maximum daily disturbed acreage is assumed to be approximately 1.5 acres per day. In order to determine the applicability of the SCAQMD's LST look-up tables for the minor amount of construction grading activities and the small amount of equipment utilized, it was assumed that the look-up table for the 2-acre LST threshold would be sufficient for the proposed residential and commercial mixed uses. Because a maximum of 1.5 acres of the project site may be subject to soil disturbance on the peak day of construction activity, the 1.5-acre thresholds would apply to the proposed project. Table 4.2.F lists the emissions thresholds that apply during project construction and operation.

Table 4.2.F: SCAQMD LST Thresholds (lbs/day)

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction (1.5-acre, 350-foot distance)	113.1	1,408.3	33.7	10.9
Operations (5-acre, 350-foot distance)	181.5	2,599.5	14.5	4.3

Source: SCAQMD. *Final Localized Significance Threshold Methodology* (July 2008).
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District

4.2.4.3 Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the SCAB, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

4.2.5 Project Impacts

Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The SCAQMD's *CEQA Air Quality Handbook* (1993, currently being revised) indicates that consistency with the SCAG 2016 AQMP is affirmed when a project: (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation; and (2) is consistent with the growth assumptions in the AQMP. As described further under Threshold 4.2.2 below, and shown in Tables 4.2.G through 4.2.J, the proposed project would result in short-term construction and long-term pollutant emissions that are less than the emissions thresholds established by the CEQA significant emissions thresholds established by SCAQMD; therefore, the proposed project would not increase the frequency or severity of any air quality standard violation or cause a new air quality standard violation.

The proposed project would require the approval of a Specific Plan Amendment to allow residential uses on the project site. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for amended Specific Plans. The 2016 AQMP was prepared to accommodate growth and to reduce the high levels of pollutants within the areas under the jurisdiction of the SCAQMD. Projects that are considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the 2016 AQMP. According to SCAG's 2016–2040 Final RTP/SCS, Orange County's population, households, and employment are forecast to increase by approximately 190,000 residents, 77,000 households, and 169,000 jobs, respectively, between 2020 and 2040.[1]

The proposed project would result a net increase of 758 residents (0.4 percent of SCAG's projected population growth for the County from 2020 to 2040 of 190,400 residents) and 251 residential units (0.3 percent of SCAG's projected household growth for the County from 2020 to 2040 of 77,600 households). The proposed project would not conflict with the 2016 AQMP and, as such, would not jeopardize attainment of the CAAQS and NAAQS in the area under the jurisdiction of the SCAQMD. The proposed project's 251 residential units would provide housing for the population growth within the City anticipated in the AQMP. As the proposed project would contribute to local population and employment growth and associated VMT that is not anticipated for the project site in the existing Specific Plan, the proposed project would be incorporated into the growth projections prepared for the next AQMP. The actual population growth in the County is lower than what was projected in the current AQMP, and therefore, it is unlikely that the additional units from the proposed project would interfere with SCAQMD's goals for improving air quality in the region. The increases in population and housing resulting from the proposed project are not considered significant because they would not represent a substantial increase in population growth (less than a 2 percent increase in the City's total population and less than a 0.03 percent increase in the County's total population). Furthermore, as discussed above, emissions generated by the proposed

[1] Southern California Association of Governments (SCAG). 2016. 2*016–2040 Final Regional Transportation Plan/Sustainable Communities Strategy.* Website: http://scagrtpscs.net/Documents/2016/final/f2016 RTPSCS. pdf (accessed December 17, 2019).

project would be below emissions thresholds established in SCAQMD's *Air Quality Significance Thresholds* and would result in less than significant air quality impacts.

Furthermore, the proposed project is consistent with the Air Quality Element of the City's General Plan because it, among other things, allows easy access to the commercial/retail land uses through its mixed-use design and the proximity of the residential and commercial uses; reduces vehicle emissions by increasing internal capture between residential and retail segments; complies with energy efficiency measures that promote conservation through Title 24; and complies with the adopted attainment standards for the SCAB.

Therefore, construction and operation of the proposed project would not have a significant short- or long-term impact on the region's ability to meet State and federal air quality standards. The proposed project would be consistent with the SCAQMD's AQMP and would not conflict with or obstruct implementation of the applicable air quality plan. No mitigation is required.

Threshold 4.2.2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The SCAB is currently designated nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. In addition, the SCAB is in nonattainment for the PM_{10} standard. The SCAB's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction. During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by demolition, grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, VOC, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

Project construction activities would include demolition, site preparation, grading, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SCAQMD has established Rule 403 (Fugitive Dust), which would require the Applicant/Developer to implement measures that would reduce the amount of particulate matter generated during the construction period.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, VOCs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

The tentative project construction schedule for the proposed residential, commercial, and retail development is 20 months. The project site is mostly flat and ready for site grading and construction. The proposed project would be developed in one phase with three sub-phases. Sub-Phase 1 would include the 20,800 sf of retail space, Sub-Phase 2 would include the 251 residential units, and Sub-Phase 3 would include a 120-room hotel and a 10-screen movie theater.

As specified in Regulatory Compliance Measures AQ-1 through AQ-4, construction of the proposed project would comply with SCAQMD standard conditions, including Rule 403 (Fugitive Dust) to control fugitive dust and Rule 1113 (Architectural Coatings) to control VOC emissions from paint. Compliance with SCAQMD standard conditions are regulatory requirements and were considered in the analysis of construction emissions.

The maximum daily emissions of VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$ that would result from construction of the proposed project are summarized in Table 4.2.G and compared to the SCAQMD regional significance thresholds. As shown in Table 4.2.G, construction emissions associated with the proposed project would not exceed the significance thresholds established by the SCAQMD for any of the criteria pollutants.

Table 4.2.G: Short-Term Regional Construction Emissions

Construction Sub-Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Project								
Demolition	3.72	44.97	24.78	0.07	4.50	1.70	0.79	1.58
Site Preparation	4.17	42.48	22.25	0.04	7.25	2.20	3.93	2.02
Grading	4.55	50.26	32.78	0.06	3.61	2.18	1.46	2.00
Building Construction	5.22	39.25	42.07	0.12	5.73	1.50	1.54	1.40
Paving	1.77	11.17	15.10	0.02	0.17	0.57	0.04	0.52
Architectural Coatings	62.98	1.65	4.88	0.01	0.98	0.09	0.26	0.09
Project Peak Daily Emissions	**62.98**	**50.26**	**42.07**	**0.12**	**9.45**		**5.95**	
SCAQMD Thresholds	**75.0**	**100.0**	**550.0**	**150.0**	**150.0**		**55.0**	
Would the Project exceed SCAQMD Thresholds?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: LSA (January 2020).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. The proposed project would be required to comply with SCAQMD Rule 403 to control fugitive dust (see Regulatory Compliance Measure AQ-1, below). Architectural coatings contain volatile organic compounds (VOCs) that are an ozone (O_3) precursor. Application of architectural coatings for the proposed peak construction day is estimated to result in a peak of 63 pounds per day (lbs/day) of VOCs. However, the VOC emissions associated with the project would not exceed the SCAQMD VOC threshold of 75 lbs/day and would not contribute to significant construction-related air quality impacts.

As discussed above, according to SCAQMD guidance, projects that exceed the significance thresholds are considered by SCAQMD to result in cumulatively considerable air quality impacts. Conversely, projects that do not exceed the significance thresholds are generally not considered to result in cumulatively considerable air quality impacts. Therefore, based on the fact that emissions during construction of the proposed project would not exceed any of the air quality significance thresholds for any criteria pollutants, the proposed project would not have a cumulatively considerable air quality impact. Therefore, with compliance with regulatory requirements (as specified in Regulatory Compliance Measures AQ-1 through AQ-4), construction impacts related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable NAAQS or CAAQS would be less than significant, and no mitigation is required.

Operation. Long-term air pollutant emission impacts are those associated with the project's stationary sources and mobile sources. The proposed project would result in increases in both stationary and mobile-source emissions compared to existing conditions. Emission modeling conducted for the proposed project reflects compliance with SCAQMD Rule 445 and assumes there would be no woodstoves and any fireplaces would be gas powered. The modeling incorporates project design features such as photovoltaic energy for 30 percent of project power needs, use of energy efficient appliances, and water-efficient features. Project operations would result in VOC, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$ emissions from three primary sources: area source emissions, energy source emissions, and mobile source emissions, as described further below.

Area source emissions would be generated from the following sources:

- **Architectural Coating**: Over a period of time, the buildings that are part of the proposed project would generate emissions from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings used during maintenance activities.

- **Consumer Products**: Consumer products include but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. When released in the atmosphere, many of these products contain organic compounds that can react to form O_3 and other photochemically reactive pollutants.

- **Landscape Maintenance Equipment**: Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers used to maintain landscaping.

Energy source emissions include criteria pollutant emissions from the generation of electricity and consumption of natural gas. As specified in Regulatory Compliance Measure AQ-5, the project building components (e.g., windows, roof systems, electrical and lighting systems, and heating, ventilation, and air conditioning systems) would be designed in compliance with the 2019 Title 24 standards. Title 24 requires projects to implement energy efficiency measures that promote conservation. The 2019 Title 24 standards anticipate 30 percent less energy use for non-residential buildings and 53 percent less energy use for residential use due to lighting upgrades.

Project vehicle trips to and from the project site would generate mobile source emissions. Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust and tire wear particulates. Mobile source emissions are dependent on both overall daily vehicle trip generation and the effect of the project on peak-hour traffic volumes and traffic operations in the vicinity of the project site. The project-related operational air quality emissions are primarily due to vehicle trips. According to the *Cypress City Center Traffic Impact Analysis* (LSA 2019), the proposed project is anticipated to generate a total of 4,978 average daily trips (ADT), with 164 a.m. peak-hour trips and 147 p.m. peak-hour trips.

The long-term operational emissions associated with the proposed project are shown in Table 4.2.H.

Table 4.2.H: Opening Year Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Project						
Area	11.18	0.24	20.85	<0.01	0.12	0.12
Energy	0.28	2.49	1.79	0.02	0.19	0.19
Mobile	7.69	38.34	89.48	0.33	26.80	7.34
Total Project Emissions	**19.15**	**41.07**	**112.12**	**0.35**	**27.10**	**7.65**
SCAQMD Thresholds	**55.00**	**55.00**	**550.00**	**150.00**	**150.00**	**55.00**
Would the Project exceed SCAQMD Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (January 2020).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

As shown in Table 4.2.H, project-related increases of all criteria pollutants would not exceed the corresponding SCAQMD daily emission thresholds for any criteria pollutants under project operation. In addition, the project would not result in a cumulatively considerable increase in emissions due to operation-related emissions. Therefore, operation of the proposed project would not violate any air quality standard or substantially contribute to an existing or projected air quality violation.

CO Hot Spot. CO hot spots are caused by vehicular emissions, primarily when idling at congested intersections. Based on the analysis presented below, a CO "hot-spot" analysis is not needed to determine whether a change in the level of service (LOS) of an intersection in the vicinity of the project site would have the potential to result in exceedance of either the CAAQS or NAAQS.

Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment. In addition, CO concentrations in the vicinity of the project site have steadily declined.

The analysis prepared for CO attainment in the SCAB by SCAQMD can be used to assist in evaluating the potential for CO exceedances in the SCAB. To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot-spot" analysis was conducted by SCAQMD in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. This analysis did not predict any violation of CO standards. Based on the SCAQMD 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak CO concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. Even if the traffic volumes of the proposed project were double or triple that of the

traffic volumes generated at the four busy intersections in Los Angeles, coupled with the ongoing improvements in ambient air quality, the project would not be capable of resulting in a CO "hot spot" at any study area intersections. Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

According to the project's December 2019 *Traffic Impact Analysis*, the proposed project is anticipated to generate 4,978 ADT. Since the proposed project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day (the volumes at the busiest intersection evaluated in SCAQMD's hot spot analysis), there is no likelihood of the project traffic exceeding CO values. Because the proposed project would not produce the volume of traffic required to generate a CO "hot spot," and due to the lack of traffic impacts and extremely low level of CO at surrounding intersections, CO emissions from operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Impacts related to CO hot spots would be less than significant, and no mitigation is required.

Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Project construction and operation emissions were compared to the LST screening tables in SRA 17, based on a 350 ft source-receptor distance and a 1.5-acre size for construction emissions and 5-acre project size for operational emissions. The results of the LST analysis, summarized in Table 4.2.I and Table 4.2.J, indicate that the project would not result in an exceedance of SCAQMD LST during project construction or operation.

Table 4.2.I: Construction Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	50.2	32.0	9.2	5.9
LST Thresholds	**113.1**	**1,408.3**	**33.7**	**10.9**
Exceeds LSTs?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (January 2020).
Note: Source Receptor Area – Central Orange County, 1.5 acres, receptors at 25 meters
CO = carbon monoxide
lbs/day = pounds per day
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table 4.2.J: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	2.2	25.3	1.5	0.5
LST Thresholds	**181.5**	**2,599.5**	**14.5**	**4.3**
Exceeds LSTs?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (January 2020).
Note: Source Receptor Area – Central Orange County, 5 acres, receptors at 350 ft, on-site traffic 5 percent of total.
CO = carbon monoxide
ft = foot/feet
lbs/day = pounds per day
LST = localized significance thresholds
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Construction. Construction activities would result in localized exhaust emissions that have the potential to affect nearby sensitive receptors. In order to identify impacts to sensitive receptors, the SCAQMD recommends analyzing LSTs for construction. As discussed previously, sensitive receptors near the project site include existing single- and multi-family residential homes located approximately 350 ft south of the project site. Table 4.2.I shows that the localized construction emissions would not exceed the LSTs that apply to the project site. As shown in Table 4.2.I, construction emissions associated with the proposed project would not exceed the LSTs established by SCAQMD. Further, as specified in Regulatory Compliance Measure AQ-2 construction of the proposed project would comply with SCAQMD standard conditions, including Rule 403 (Fugitive Dust) to control fugitive dust. Compliance with SCAQMD standard conditions are regulatory requirements and were considered in the analysis of construction emissions. Because the project would not exceed the LSTs with compliance with regulatory requirements (and would be further reduced with implementation of Regulatory Compliance Measures AQ-1 through AQ-4), impacts related to exposure of sensitive receptors to substantial pollutant concentrations during project construction would be less than significant. No mitigation is required.

Operation. A project would generate localized exhaust emissions that have the potential to affect nearby sensitive receivers if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). As such, operational LSTs are not applicable to the proposed project. Although the proposed project does not include such uses, impacts associated with the operational localized emissions have been analyzed for disclosure purposes. Operational LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$.

Screening-level analysis of LST is recommended for operational activities at the project site only. Off-site vehicle trips are not included in the LST analysis. The CalEEMod model includes all operational emission for both on- and off-site. For a worst-case scenario assessment, the LST emissions shown in Table 4.2.J include all on-site project-related stationary and area sources and 5 percent of the project-related mobile sources, which is an estimate of the amount of project-related vehicle traffic that would occur on site. As shown in Appendix B, a total of 5 percent is considered conservative because 95 percent of the project-related vehicle trips would occur off site.

As discussed previously, sensitive receptors near the project site include existing single- and multi-family residential homes located approximately 350 ft south of the project site, and LSTs for receptors located at 107 meters were used in this analysis.

Table 4.2.J shows the maximum daily emissions for the project's operational activities compared with the SCAQMD LSTs for NO_X, CO, PM_{10}, and $PM_{2.5}$.

As shown in Table 4.2.J, project operational source emissions would not exceed LSTs established by the SCAQMD. Therefore, because the project would not exceed the LSTs established by the SCAQMD, localized emissions from operation of the proposed project would not expose any sensitive receptors to substantial pollutant concentrations, impacts would be less than significant, and no mitigation is required.

Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact.

Construction. Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease to occur after individual construction is completed. No other sources of objectionable odors would occur during construction of the proposed project, and no mitigation measures are required.

Operation. SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

Potential airborne odors could result from cooking activities associated with new restaurants and trash receptacles. These odors would be confined to the immediate vicinity of the project site and minimized by SCAQMD odor regulations and lids on trash receptacles. The proposed uses are not anticipated to emit any other types of objectionable odors. Therefore, operation of the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and this impact would be less than significant. No mitigation is required.

4.2.6 Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would result in less than significant impacts. However, the following regulatory compliance measures are existing SCAQMD regulations that are applicable to the proposed project and are considered in the analysis of potential impacts related to air quality. The City of Cypress considers these requirements to be mandatory; therefore, they are not mitigation measures.

4.2.7 Regulatory Compliance Measures and Mitigation Measures

4.2.7.1 Regulatory Compliance Measures

The following Regulatory Compliance Measures pertaining to air quality are applicable to the proposed project.

Regulatory Compliance Measure AQ-1 **SCAQMD Rule 403.** During clearing, grading, earth moving, or excavation operations, excessive fugitive dust emissions shall be controlled by regular watering or other dust preventative measures by using the following procedures, in compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 during construction.

- All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day.
- All material transported on-site or off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized so as to prevent excessive amounts of dust.
- These control techniques shall be indicated in project specifications. Compliance with this measure shall be subject to periodic site inspections by the City of Cypress (City).
- Visible dust beyond the property line emanating from the project shall be prevented to the maximum extent feasible.

Regulatory Compliance Measure AQ-2 All trucks that are to haul excavated or graded material shall comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2) and (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads.

Regulatory Compliance Measure AQ-3 Prior to approval of the project plans and specifications, the City of Cypress Director of Community Development, or designee, shall confirm that the construction bid packages specify:

- Contractors shall use high-pressure-low-volume paint applicators with a minimum transfer efficiency of at least 50 percent;
- Coatings and solvents that will be utilized have a volatile organic compound content lower than required under SCAQMD Rule 1113; and
- To the extent feasible, construction/building materials shall be composed of pre-painted materials.

Regulatory Compliance Measure AQ-4 The project shall comply with SCAQMD Rule 402.

Regulatory Compliance Measure AQ-5 The project shall meet the Statewide 2019 Building Energy Efficiency Standards, formally known as Title 24, Part 6.

4.2.7.2 Mitigation Measures

No mitigation is required for the proposed project.

4.2.8 Level of Significance after Mitigation

Implementation of Regulatory Compliance Measures AQ-1 through AQ-5 would further reduce project-related air quality impacts to a less than significant level. No significant and unavoidable impacts related to air quality would occur with implementation of these standard measures. All anticipated impacts related to air quality would be considered less than significant and no mitigation is required.

4.2.9 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for air quality. The cumulative impact area for air quality related to the proposed project is the SCAB.

Air pollution is inherently a cumulative type of impact measured across an air basin. The discussion under Threshold 4.2.2, above, includes an analysis of the proposed project's contribution to cumulative air impacts. To summarize the conclusion with respect to that analysis, the incremental effect of projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable. The proposed project's construction- and operation-related regional daily emissions are less than the SCAQMD significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations on a project-by-project basis would substantially reduce potential impacts associated with the related projects and basin-wide air pollutant emissions. Therefore, the proposed project would not have a cumulatively considerable increase in emissions and the proposed project's cumulative air quality impacts would be less than significant.

4.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources on and in the vicinity of the Cypress City Center project (proposed project) site, the potential impacts of the proposed project on those resources, and measures to mitigate any potentially significant impacts. Information presented in this section is based on Geographic Information System (GIS) data, the California Natural Diversity Database (CNDDB), and on the City of Cypress' (City) *Inventory of Landmark Trees* (July 1996). The literature review and CNDDB records search results are provided in Appendix C of this Environmental Impact Report (EIR).

4.3.1 Methodology

A literature review was conducted to determine the potential occurrence of special-status plant species and special-status animal species on or in the immediate vicinity of the project site. Database records from the California Department of Fish and Wildlife (CDFW), CNDDB – Rarefind 5 and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California were utilized to assist in determining the existence or potential occurrence of any special-interest plant and animal species in or immediately adjacent to the project site. Similarly, LSA reviewed records from the United States Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) Online System[1] and the USFWS Critical Habitat Mapper[2] to determine the likelihood that candidate, threatened, and endangered species; crucial habitat; national wildlife refuges; and/or migratory birds were present on the site. The USFWS National Wetlands Inventory[3] was reviewed to determine whether any wetlands or surface waters of the United States had been previously identified on the site. Database records for the Los Alamitos United States Geological Survey (USGS) 7.5-minute quadrangle were examined using the CNDDB and the CNPS electronic inventory. Sensitive species known by LSA biologists to occur in the general area were also considered.

4.3.2 Existing Environmental Setting

The approximately 13-acre project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines. The edge condition along Katella Avenue and a portion of Siboney Street has been improved with a public sidewalk, fencing, and ornamental landscaping. The edge condition along Winners Circle has been improved with a public sidewalk and driveway access points, with no landscaping. The interior property is improved with a parking lot and limited ornamental landscaping. The project site is generally flat, and has been fully graded and disturbed. The urban landscaping within Cypress provides habitat for smaller rodents and birds. However, the frequent disruptions caused by urban activities and the frequent cultivation of such plant life make these plant communities less than an ideal habitat for wild animals.

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1 United States Fish and Wildlife Service (USFWS). 2019b. IPaC Information for Planning and Consultation. Website: https://ecos.fws.gov/ipac/ (accessed November 6, 2019).

2 USFWS. 2019c. National Wetlands Inventory. Wetlands Mapper. Website: https://www.fws.gov/wetlands/data/Mapper.html (accessed December 2019).

3 USFWS. 2019d. Wetlands. The National Wetlands Inventory. Website: https://www.fws.gov/wetlands/ (accessed December 2019).

4.3.2.1 Plant Species

As described above, the majority of the project site is graded and unvegetated, with the exception of ornamental landscaping along the southern and western boundaries of the project site. These landscaped areas contain trees; however, none of the trees are designated as Landmark Trees according to the City's *Inventory of Landmark Trees* (July 1996). The results of the literature review and CNDDB search did not identify any special-status plant species on the project site or in the vicinity of the project site. Appendix C contains the table that identifies those special-status plant species known to occur or that could potentially occur in the vicinity of the project site, and includes each species' probability of occurrence within the proposed construction footprint.

4.3.2.2 Animal Species

Animal populations are not known to occur on the project site. Potential animal species supported by the project site would typically be those found in developed, urban areas in Orange County, such as coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Otospermophilus beecheyi*). The project site lacks suitable habitat to support animal communities. Although some animal species are expected to periodically move about the project site, it is entirely surrounded by other development and does not function as a wildlife movement corridor or special linkage. The results of the literature review and CNDDB search did not identify any special-status plant species on the project site or in the vicinity of the project site. Appendix C contains the table that identifies those special-status animal species known to occur or that could potentially occur in the vicinity of the project site, and includes each species' probability of occurrence within the proposed construction footprint.

4.3.2.3 On-Site Aquatic Resources

The project site is currently developed with a paved surface parking lot and does not contain any natural lakes, streams, or riparian habitat, nor hydric soils. No potential waters of the United States or CDFW jurisdictional areas are located on the project site. Therefore, it does not meet the minimum criteria for wetlands in accordance with the United States Army Corps of Engineers (USACE) Arid West Supplement Version 2.0[1] and is not a wetland pursuant to Section 404 of the CWA.

The California Fish and Game Code defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." The CDFW definition of a "lake" includes "natural lakes or man-made reservoirs." The project site does not contain any body of water that meets the definition of a stream or a lake in the California Fish and Game Code and, as such, would not be subject to regulation under Section 1602 of the Fish and Game Code.

[1] United States Army Corps of Engineers (USACE). 2008. Wetlands Regulatory Assistance Program. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* ERCD/EL TR-08-28. September.

4.3.3 Regulatory Setting

4.3.3.1 Federal Regulations

United States Endangered Species Act. The USFWS, pursuant to the Federal Endangered Species Act (FESA), protects endangered and threatened species. FESA defines an endangered species as a species in danger of extinction throughout all or a significant part of its range and a threatened species as one that is likely to become endangered in the foreseeable future. USFWS also identifies species proposed for listing as endangered or threatened. Other than for federal actions, there is no formal protection for candidate species under FESA. However, consultation with USFWS regarding species proposed for listing can prevent project delays that could occur if a species is listed prior to project completion.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) governs the take, possession, import, export, transport, selling, purchasing, or bartering of migratory birds and their eggs, parts, and nests. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take while ensuring that take is compatible with protection of the species. Most bird species are protected under the MBTA.

4.3.3.2 State Regulations

California Fish and Game Code. Under the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy any bird or the nests or eggs of any bird species except as otherwise provided in the California Fish and Game Code and its regulations. This code also specifically protects raptors, including owls. The CDFW considers a disturbance that results in nest abandonment or loss of reproductive effort as take. Disturbances of active nesting territories should be avoided during the nesting season.

California Endangered Species Act. The CDFW, through provisions of the California Administrative Code and policies formulated by the California Fish and Game Commission, regulates plant and animal species in danger of, or threatened with, extinction based on the list of endangered, threatened, and candidate species developed by the Fish and Game Commission. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant part of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become endangered in the foreseeable future without special protection and management. Candidate species are species that the Fish and Game Commission has formally noticed as being under review for addition to the list of endangered or threatened species or as a species proposed for listing.

California Natural Diversity Database. The CDFW administers the CNDDB, which comprises lists of special-status plants, animals, and natural communities, including species listed under the California Endangered Species Act (CESA) and FESA, California Species of Special Concern, and USFWS Birds of Conservation Concern. Additional species, natural communities, and habitat types are designated as being of special interest because of their rarity (e.g., very localized distribution, few scattered occurrences) and/or threats to their existence, although there is no specific regulatory protection afforded to those species by listing in the CNDDB.

4.3.3.3 Regional Regulations

There are no regional regulations applicable to the proposed project.

4.3.3.4 Local Regulations

Landmark Tree Ordinance. The City has identified a number of Landmark Trees within its jurisdiction. The City's Landmark Tree Ordinance, as codified in Sections 17-17 through 17-27 of the City Municipal Code, requires a permit for the cutting, modification, destruction, or removal of Landmark Trees. Additionally, the Ordinance maintains that no structures can be constructed within 30 feet of a Landmark Tree without a permit from the Cypress City Council.

4.3.4 Thresholds of Significance

The thresholds for biological resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist.* The proposed project may be deemed to have a significant impact with respect to biological resources if it would:

Threshold 4.3.1: **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

Threshold 4.3.2: **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

Threshold 4.3.3: **Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Threshold 4.3.4: **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Threshold 4.3.5: **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Threshold 4.3.6: **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

4.3.5 Project Impacts

Threshold 4.3.1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

No Impact. The project site is currently characterized by a paved asphalt surface parking lot. In its existing condition, the project site contains only a small amount of ornamental vegetation along Katella Avenue and a portion of Siboney Street. The disturbed condition of the project site is generally not suitable to support special-status plant or animal species.

Special-Status Habitat/Vegetation. The USFWS Critical Habitat for Threatened & Endangered Species map does not identify any locations of critical habitat within the project site. The closest known critical habitat is the Bolsa Chica Ecological Reserve, approximately 6.5 miles south of the project site.[1] According to the CNDDB, no sensitive plant species have been documented on the project site or in the project vicinity.

The project site is located within the Orange County Transportation Authority Natural Communities Conservation Plan/Habitat Conservation Plan (OCTA NCCP/HCP) that covers the entirety of Orange County. Only some portions of the Plan Area fall within a designated Permit Area, or the area in which OCTA would request authorization from CDFW and USFWS to issue permits due to potential project-related impacts to certain identified species. Because the project site does not fall within the Permit Area, the proposed project would not conflict with any local, regional, or State HCP. No special-status species are anticipated to be directly affected by the project due to the lack of suitable habitat on the project site. Therefore, no impacts to sensitive or special-status species would result from implementation of the proposed project, and no mitigation is required.

Threshold 4.3.2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

No Impact. The project site is highly disturbed and developed with an asphalt-paved parking lot and does not support any special-status or sensitive riparian habitat as identified in regional plans, policies, or regulations, or by the CDFW or USFWS. Therefore, no impacts related to riparian habitat or other sensitive natural communities identified in a local or regional plan would result from project implementation, and no mitigation is required.

Threshold 4.3.3: Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

[1] USFWS. 2019a. Critical Habitat for Threatened & Endangered Species. Website: http://www.arcgis.com/home/webmap/viewer.html?url=https://services.arcgis.com/QVENGdaPbd4LUkLV/ArcGIS/rest/services/USFWS_Critical_Habitat/FeatureServer&source=sd (accessed December 6, 2019).

No Impact. According to the National Wetlands Inventory managed by USFWS, the project site does not contain federally protected wetlands. The project site is located entirely outside of streambeds, banks, and riparian habitat. No potential waters of the United States or CDFW jurisdictional areas are located on the project site.

Although construction activities have the potential to result in temporary indirect effects to water quality including a potential increase in erosion and sediment transport into downstream aquatic areas and the contamination of waters from construction equipment, these potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of Best Management Practices (BMPs) and a Water Quality Management Plan as discussed in Section 4.8, Hydrology and Water Quality. Specifically, adherence to Regulatory Compliance Measure HYD-1, provided in Section 4.9, Hydrology and Water Quality, during construction would address erosion-related impacts during construction through implementation of construction site BMPs to avoid erosion and sedimentation impacts to downstream aquatic areas and water quality. As such, there would be no impacts on State or federally protected wetlands.

Threshold 4.3.4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact. Due to the lack of sensitive or special-status species or their habitats on the project site, the project would not result in impacts on candidate, sensitive, or special-status animal species. The proposed project would avoid impacts on nesting resident and/or migratory birds either by avoiding vegetation removal during the avian nesting season (February 1 through August 31) or by implementing Regulatory Compliance Measure BIO-1. The proposed project has the potential to impact active migratory bird nests if and to the extent that those trees are removed during the avian nesting season and they contain nests. Regulatory Compliance Measure BIO-1, below, would address any impacts to nesting resident and/or migratory birds should it be necessary to conduct vegetation removal during the nesting season and nests are present. With implementation of Regulatory Compliance Measure BIO-1, the proposed project's potential impacts on nesting migratory birds would be less than significant.

The proposed project would avoid impacts on the nests of raptors (which are migratory birds) if the existing trees in the ornamental vegetation area are removed outside the raptor nesting season (February 1 through June 30) and they contain raptor nests. The proposed project has the potential to impact active raptor nests if and to the extent that (1) those ornamental trees are removed during the raptor nesting season, and (2) special-status or common species of raptors establish nests in the future in any of those ornamental trees prior to their removal. Regulatory Compliance Measure BIO-1, below, would also address any impact to nesting raptors should it be necessary to conduct vegetation removal during the nesting season and raptors are present. With implementation of Regulatory Compliance Measure BIO-1, the proposed project exhibits no potential to disrupt a wildlife corridor or in any way disrupt movement of native wildlife.

Threshold 4.3.5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact. The Landmark Tree Ordinance in the City's Municipal Code protects designated landmark trees, which are specifically identified in the City's *Inventory of Landmark Trees* (July 1996). As shown in this inventory, there are no landmark trees on the project site. The removal of any on-site trees or vegetation would not conflict with the City's Landmark Tree Ordinance.

Per Article IV of the Municipal Code, Street Trees, any tree within the public right-of-way belongs to the City of Cypress. Any work to street trees conducted as part of the proposed project would be done in accordance with the City Council's adopted Parkway Tree Policy.

Therefore, through compliance with the local policies and ordinances relating to tree protection, any impacts to local street trees would be considered less than significant.

Threshold 4.3.6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The OCTA's NCCP/HCP includes a Plan Area that covers the entirety of Orange County, including the City of Cypress. Only some portions of the Plan Area fall within a designated Permit Area, or the area in which OCTA would request authorization from CDFW and USFWS to issue permits due to potential project-related impacts to certain identified species. Because the project site does not fall within the Permit Area, the proposed project would not conflict with any local, regional, or State HCP. Therefore, the proposed project would result in no impacts related to conflict with an HCP, and no mitigation is required.

4.3.6 Level of Significance Prior to Mitigation

The proposed project would result in no impacts related to candidate, sensitive, or special-status wildlife species, riparian habitat and sensitive natural communities, wetlands, policies or ordinances protecting biological resources, and conflicts with an adopted HCP. Potential impacts to migratory birds and raptors and street trees would be considered less than significant. No mitigation is required.

4.3.7 Regulatory Compliance Measures and Mitigation Measures

4.3.7.1 Regulatory Compliance Measures

Regulatory Compliance Measure BIO-1 **Nesting Bird Survey and Avoidance.** If vegetation removal, construction, or grading activities are planned to occur within the active nesting bird season (February 1 through August 31), the City of Cypress, or designee, shall confirm that the Applicant/Developer has retained a qualified biologist who shall conduct a preconstruction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased

human activity, and dust, etc. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.

4.3.7.2 Mitigation Measures

No mitigation measures are applicable the proposed project.

4.3.8 Level of Significance after Mitigation

Potential impacts to biological resources from the proposed project would be addressed through compliance with Regulatory Compliance Measure BIO-1 and would be considered less than significant. The proposed project would have no significant and unavoidable adverse impacts related to biological resources.

4.3.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for biological resources. The project site is heavily disturbed, with existing paving and light poles. Because the project site is located within the City of Cypress, the cumulative area for biological impacts is the City. As described above, the proposed project would have no impacts to federal and State listed species and waters of the United States or wetlands and would have less than significant effects on migratory birds and local tree policies. As the proposed project's impacts to biological resources would be limited, its contribution to cumulative biological impacts in consideration of the City of Cypress projects identified in Table 4.A, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, would be considered less than significant.

As discussed earlier, the project site is located within the OCTA NCCP/HCP that covers the entirety of Orange County, including the City of Cypress. Only some portions of the Plan Area fall within a designated Permit Area, or the area in which OCTA would request authorization from CDFW and USFWS to issue permits due to potential project-related impacts to certain identified species. Additionally, the project site is not located within a designated habitat reserve and, therefore, the proposed project would not contribute to the loss of natural habitat in the City. The development of the proposed project would not result in the removal of any sensitive habitat species identified in the OCTA NCCP/HCP. Therefore, the proposed project would not contribute to the cumulative loss of biological resources, and impacts on biological resources would be less than cumulatively significant.

4.4 CULTURAL RESOURCES

This section provides a discussion of the existing cultural resource environment and an analysis of potential impacts from implementation of the Cypress City Center project (proposed project). Cultural resources are sites, buildings, structures, objects, and districts over 50 years old that may have traditional or cultural value for the historical significance they possess. This section summarizes information obtained from a record search at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) and an archaeological pedestrian survey of the project site. A cultural resources technical memorandum summarizing the results of the record search and archaeological pedestrian field survey are contained in a confidential appendix (Appendix D) of this Environmental Impact Report (EIR).

4.4.1 Methodology

A cultural resources record search was completed on January 9, 2020, at the SCCIC of the CHRIS at California State University, Fullerton. It included a review of all prehistoric and historic archaeological sites within a 0.25-mile radius of the project site, as well as a review of known cultural resource survey and excavation reports in that area. The California State Historic Resources Inventory (HRI), National Register of Historic Places (National Register), California Historical Landmarks (SHL), California Points of Historical Interest (SPHI), and various local historical registers were examined. An archaeological pedestrian field survey of the project site was conducted on January 14, 2020.

4.4.2 Existing Environmental Setting

The area that is now Cypress (including the project site) was prehistorically occupied by the Gabrielino Native American people. The project site is currently characterized by a paved parking lot with existing light poles and various electrical utility boxed and lines. Temporary existing uses on the project site include overflow parking and a variety of other temporary uses.

4.4.3 Regulatory Setting

4.4.3.1 Federal Regulations

No federal regulations are applicable to the proposed project.

4.4.3.2 State Regulations

California Health and Safety Code (HSC) Section 7050.5. California HSC Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Public Resources Code Section 5097.5. PRC Section 5097.5 provides for the protection of cultural resources and prohibits the removal, destruction, injury, or defacement of archaeological features on any lands under the jurisdiction of State or local authorities.

California Register of Historical Resources (PRC Section 5020 et seq.). State law also protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in *State CEQA Guidelines* Section 15064.5(a). These criteria are nearly identical to those for the National Register, which are listed above.

The SHPO maintains the California Register. Properties listed, or formally designated eligible for listing, on the National Register are nominated to the California Register and then selected to be listed on the California Register, as are State Landmarks and Points of Interest.

The California Register criteria are based on National Register criteria. For a property to be eligible for inclusion in the California Register, one or more of the following criteria must be met:

1. It is associated with the events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; and/or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time has passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of time needed to develop the perspective to understand the resource's significance (California Code of Regulations [CCR] 4852[d][2]).

The California Register also requires that a resource possess integrity, which is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (California Office of Historic Preservation [OHP] 1999:2). To retain integrity, a resource should have its original location, design, setting, materials, workmanship, feeling, and association. Which of these factors is most important depends on the particular criterion under which the resource is considered eligible for listing (OHP 1999).

4.4.3.3 Regional Regulations

There are no regional regulations that are applicable to cultural resources relevant to the proposed project.

4.4.3.4 Local Regulations

Cypress General Plan. The Conservation/Open Space/Recreation (COSR) Element of the Cypress General Plan identifies goals and policies related to cultural resources (and includes references to paleontological resources). Goal COSR-5 is to "preserve Cypress' archaeologic and paleontologic resources" through implementation of two policies: COSR-5.1 and COSR-5.2. Policy COSR-5.1 is "to update records of resource finds and locations when required" and COSR-5.2 states that "Prior to development in previously undeveloped areas, [the City will] require strict adherence to the CEQA guidelines for environmental documentation and mitigation measures where development will affect archaeological or paleontological resources."

4.4.4 Thresholds of Significance

The thresholds for cultural resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to cultural resources if it would:

Threshold 4.4.1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Threshold 4.4.2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Threshold 4.4.3: Disturb any human remains, including those interred outside of dedicated cemeteries?

4.4.5 Project Impacts

Threshold 4.4.1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact. The SCCIC record search results and archaeological pedestrian field survey identified no previously recorded cultural resources on or in soils on the project site. As such, there are no historical resources as defined in Section 15064.5 of the *State CEQA Guidelines* located within the project site. The proposed project will not cause a substantial adverse change in the significance of a historical resource, and no mitigation is required.

Threshold 4.4.2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated. The SCCIC record search included the project site and the areas within 0.25 mile of the project site. No archaeological resources have been previously recorded within the project site. There has been one archaeological resource previously recorded within 0.25 mile of the project site, the historic-period Navy Golf Course in Seal Beach (P-30-176854). One previous study (an archaeological pedestrian field survey) has included the project site.

Historic-period 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. The project site is located within pre-development 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. As such, there is a low likelihood of encountering intact buried archaeological deposits during ground-disturbing construction activities. However, there is a possibility that isolated archaeological cultural resources may be encountered during construction activities.

Mitigation Measure CUL-1 requires that a qualified professional archaeologist provide cultural resources awareness training prior to the commencement of ground-disturbing activities and that a qualified professional archaeologist be retained on-call in the event that construction personnel encounter any archaeological deposits and/or human remains during construction activities. If construction personnel encounter any archaeological deposits during construction activities, the on-call qualified professional archaeologist will be contacted to assess the nature of the find. When archaeological resources are assessed and/or protected as they are discovered, impacts to these resources would be less than significant. As such, implementation of Mitigation Measure CUL-1 would reduce the impact of the proposed project on the significance of archaeological resources to less than significant.

Threshold 4.4.3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. No previously identified human remains are present on the project site, and there are no facts or evidence indicating that Native Americans or people of European descent are buried on the project site. However, undiscovered human remains may be present below the ground surface on any property. Disturbing human remains could violate the State's Health and Safety Code as well as destroy the resource. Regulatory Compliance Measure CUL-1 requires compliance with the State's Health and Safety Code for the treatment of human remains. Adherence to regulatory standards included in Regulatory Compliance Measure CUL-1 would reduce the impact of the proposed project on human remains to less than significant. No mitigation is required.

4.4.6 Level of Significance Prior to Mitigation

No impacts to historical resources would occur. Prior to mitigation, the proposed project has the potential to result in significant impacts to unknown archaeological resources. With adherence to the regulatory standards in Regulatory Compliance Measure CUL-1, the project would result in less than significant impacts to previously undiscovered buried human remains.

4.4.7 Regulatory Compliance Measures and Mitigation Measures

4.4.7.1 Regulatory Compliance Measures

Regulatory Compliance Measure CUL-1

Human Remains. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to State PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.

4.4.7.2 Mitigation Measures

Mitigation Measure CUL-1

Archaeological Resources. Prior to the issuance of a grading permit, a qualified professional archaeologist shall be retained by the Applicant/Developer to provide cultural resources awareness training to construction personnel. The qualified professional archaeologist shall also be retained by the Applicant/Developer on an on-call basis. This training shall 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 shall be used in the event of inadvertent discoveries of cultural resources during construction. In the event that construction personnel encounter any archaeological deposits during construction activities, the retained qualified professional archaeologist shall be contacted immediately. If any such resources are discovered,

contractors shall stop work in the immediate area of the find and contact the retained archaeologist to assess the nature of the find and determine if future studies and/or monitoring is appropriate. Upon completion of any monitoring activities, the archaeologist shall prepare a report to document the methods and results of monitoring activities. This report shall be submitted to the South Central Coastal Information Center (SCCIC).

4.4.8 Level of Significance after Mitigation

No impacts to historical resources would occur. With adherence to the regulatory standards in Regulatory Compliance Measure CUL-1, the project would result in less than significant impacts to previously undiscovered buried human remains. Mitigation Measure CUL-1 would reduce potential impacts to unknown archaeological resources to a less than significant level. No significant unavoidable impacts to archaeological resources would occur with implementation of this mitigation measure.

4.4.9 Cumulative Impacts

Potential impacts of the proposed project to unknown cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Cypress, could contribute to a cumulatively significant impact due to the overall loss of historical and archaeological artifacts unique to the region.

Each development proposal received by the City is required to comply with the requirements of CEQA, including an environmental review, if applicable. If there were any potential for significant impacts to archaeological resources as a result of present or reasonably foreseeable projects in Cypress, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When archaeological resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.

As such, implementation of Regulatory Compliance Measure CUL-1 and Mitigation Measure CUL-1 would ensure that the proposed project, together with cumulative projects, would not result in a significant cumulative impact to unique archaeological and historical resources.

4.5 ENERGY

This section discusses energy use resulting from implementation of the Cypress City Center Project (proposed project) and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency. The energy use analysis in this section is based on information from the California Emissions Estimator Model (CalEEMod) version 2016.3.2 modeling results in Appendix B of this Environmental Impact Report (EIR).

4.5.1 Methodology

The analysis of electricity/natural gas usage is based on the CalEEMod modeling conducted by LSA (LSA 2019), which quantifies energy use for project operations. Fuel consumption (diesel fuel and gasoline) from vehicle trips during operation was estimated for the opening year (2022) of the proposed project based on trip estimates from the CalEEMod model and fuel efficiencies from the California Air Resources Board's (CARB) EMission FACtor Model (EMFAC2017) model. Estimates of fuel consumption (diesel fuel and gasoline) from construction trucks and construction worker vehicles were based on trip estimates from the CalEEMod model and fuel efficiencies from the CARB EMFAC2017 model.

The analysis focuses on the four sources of energy that are relevant to the proposed project: electricity, natural gas, the equipment fuel necessary for project construction, and vehicle fuel necessary for project operations. For the purposes of this analysis, the amount of electricity, natural gas, construction fuel, and fuel use from operations are quantified and compared to that consumed in Orange County. The electricity/natural gas use of the proposed project is analyzed as a whole on an annual basis.

4.5.2 Existing Environmental Setting

4.5.2.1 Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).[1]

In 2017, California's electricity was generated primarily by natural gas (33.67 percent), coal (4.13 percent), large hydroelectric (14.72 percent), nuclear (9.08 percent), and renewable sources (29 percent). Total electric generation in California in 2017 was 292,039 gigawatt-hours (GWh), up 0.5 percent from the 2016 total generation of 290,567 GWh. In 2017, California produced approximately 70.7 percent and imported 29.3 percent of the electricity it used.[2]

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1 United States Energy Information Administration (EIA). 2019b. Electricity Explained. Website: https://www.eia.gov/energyexplained/electricity/ (accessed December 9, 2019).

2 California Energy Commission (CEC). 2019c. Notice of Request for Public Comments on the Draft Scoping Order for the 2019 Integrated Energy Policy Report. Docket No. 19-IEPR-01.

The project site is within the service territory of Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square-mile (sq mi) area of Central, Coastal, and Southern California.[1] According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2018 was 84,000 GWh. (28,617 GWh for the residential sector and 54,783 GWh for the non-residential sector). Total electricity consumption in Orange County in 2018 was 19,858 GWh (6,814 GWh for the residential sector and 13,044 GWh for the non-residential sector).[2]

Although electricity is used to power the parking lot lights on the project site, the amount of electricity that is used on an annual basis is unknown.

4.5.2.2 Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).[3]

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply.[4]

The Southern California Gas Company (SoCalGas) is the natural gas service provider for the project site. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border.[5] According to the California Energy Commission (CEC), total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms (2,147.4 million therms for the residential sector and 987.5 million therms for the commercial sector). Total natural gas consumption in Orange County in 2018 was 575.1 million therms (339.0 million therms for the residential sector and 236.1 therms for the non-residential sector).[6]

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1 Southern California Edison (SCE). 2019. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed December 12, 2019).

2 CEC. 2019a. Electricity Consumption by County. Website: http://www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed December 12, 2019).

3 EIA. 2019c. Natural Gas Explained- Use of Natural Gas. Website: https://www.eia.gov/energyexplained/index.php?page=natural_gas_use (accessed December 9, 2019).

4 CEC. 2019d. Supply and Demand of Natural Gas in California. Website: https:// ww2.energy.ca.gov/almanac/naturalgas_data/overview.html (accessed December 9, 2019).

5 Southern California Gas Company (SoCalGas). 2019. About SoCalGas. Website: https://www3.socalgas.com/about-us/company-profile (accessed December 9, 2019).

6 CEC. 2019b. Gas Consumption by County. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed December 12, 2019).

In its existing condition, no natural gas is currently used on the project site.

4.5.2.3 Petroleum/Transportation Energy

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel.

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2017, total gasoline consumption in California was 366,820 thousand barrels (15.4 billion gallons) or 1,853.5 trillion British Thermal Units (BTU).[1] Of the total gasoline consumption, 350,604 thousand barrels (14.7 billion gallons) or 1,771.6 trillion BTU were consumed for transportation.[2] Based on fuel consumption obtained from EMFAC2017, 160.5 million gallons of diesel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County in 2018.

4.5.3 Regulatory Setting

4.5.3.1 Federal Regulations

Corporate Average Fuel Economy (CAFE). Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. CAFE standards are federal regulations that are set to reduce energy consumed by on-road motor vehicles. The National Highway Traffic Safety Administration (NHTSA) regulates the standards and the United States Environmental Protection Agency (USEPA) measures vehicle fuel efficiency. The standards specify minimum fuel consumption efficiency standards for new automobiles sold in the United States. The law has become more stringent over time. The current standard is 27.5 miles per gallon (mpg) for passenger cars and 20.7 mpg for light-duty trucks.

On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the USEPA and the United States Department of Transportation's (USDOT) NHTSA announced a joint final rule establishing a national program that would reduce greenhouse gas (GHG) emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. This phase required these vehicles to meet a fuel economy standard of 35.5 mpg. The second phase applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for

1 A British Thermal Unit (BTU) is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

2 EIA. 2019a. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2017. Website: https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed December 12, 2019).

model years 2017 through 2025. This phase required these vehicles to meet an estimated fuel economy standard of 54.5 mpg.[1]

On September 15, 2011, the USEPA and USDOT issued a final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses, model years 2014 through 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction in fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption (USEPA 2019a). On October 25, 2016, the USEPA and USDOT issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 through 2027 to achieve vehicle fuel savings as high as 25 percent, depending on the vehicle category (USEPA 2019a).

Safer Affordable Fuel-Efficient Vehicles Rule. On August 2, 2018, the current Administration released a notice of proposed rulemaking, *The Safer Affordable Fuel-Efficient* (SAFE) *Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule) to amend the CAFE and GHG emission standards established in 2012 for model years 2021 through 2026. The SAFE Vehicles Rule would decrease fuel economy and would withdraw the California Waiver for the California Advanced Clean Car program, Zero Emissions Vehicle mandate, and GHG emission standards for model years 2021 through 2026. Final rulemaking on the SAFE Vehicles Rule is pending.[2]

4.5.3.2 State Regulations

Assembly Bill 1575, Warren-Alquist Act. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs; license power plants of 50 megawatts (MW) or larger; develop energy technologies and renewable energy resources; plan for and direct State responses to energy emergencies; and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require EIRs to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and

[1] National Highway Traffic Safety Administration (NHTSA). 2019a. Corporate Average Fuel Economy. Website: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy (accessed December 9, 2019).

[2] NHTSA. 2019b. The Safer Affordable Fuel-Efficient 'SAFE' Vehicles Rule. Website: https://www.nhtsa.gov/corporate-average-fuel-economy/safe (accessed December 9, 2019).

efficient use of energy and the means of achieving this goal, including (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting. In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an *Integrated Energy Policy Report* every 2 years and an update every other year. The most recently adopted reports include the *2017 Integrated Energy Policy Report* (CEC 2018a) and the *2018 Integrated Energy Policy Report Update* (CEC 2018b). The *2017 Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The *2017 Integrated Energy Policy Report* covers a broad range of topics, including implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas, updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency. The *2018 Integrated Energy Policy Report Update* included a review of the implementation of California's energy policies and updated the 2017 California energy demand forecasts that were adopted as part of the *2017 Integrated Energy Policy Report* proceedings.

The CEC circulated the 2019 Integrated Energy Policy Report for public review in February 2019 and is anticipated to approve the report in February 2020.[1]

Renewable Portfolio Standards. SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the

[1] CEC. 2019c. Notice of Request for Public Comments on the Draft Scoping Order for the 2019 Integrated Energy Policy Report. Docket No. 19-IEPR-01.

requirement to 60 percent by 2030 and required that all State's electricity to come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019.[1]

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years, and the current 2019 CBC went into effect on January 1, 2020. The efficiency standards apply to both new construction and rehabilitation of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

California Green Building Standards Code (CALGreen Code). In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code took effect on January 1, 2011. The CALGreen Code is updated on a regular basis, with the most recent update consisting of the 2019 CALGreen Code standards that became effective January 1, 2020. The CALGreen Code established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. Although the CALGreen Code was adopted as part of the State's efforts to reduce GHG emissions, the CALGreen Code standards have co-benefits of reducing energy consumption from residential and non-residential buildings subject to the standard.

California Energy Efficiency Strategic Plan. On September 18, 2008, the California Public Utilities Commission (CPUC) adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California (CPUC 2008). The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The Plan also reiterates the following four specific programmatic goals known as the "Big Bold Energy Efficiency Strategies" that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofitted to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

[1] California Public Utilities Commission (CPUC). 2019. Renewables Portfolio Standard (RPS) Program. Website: https://www.cpuc.ca.gov/rps/ (accessed December 9, 2019).

4.5.3.3 Regional Regulations

There are no regional energy regulations that apply to the proposed project.

4.5.3.4 Local Regulations

Cypress Municipal Code. The City of Cypress (City) has adopted the 2019 California Green Building Standards Code (CALGreen Code) and incorporated the CALGreen Code by reference into the City Municipal Code (Chapter 5, Buildings, Article 1, Building Code, Section 5-1 California Building Codes – Adopted).

Cypress General Plan Conservation/Open Space/Recreation Element. The following goals and policies are applicable to the proposed project:

COSR-3: Conserve energy resources through the use of available technology and conservation practices.

COSR-3.1: Encourage innovative site planning and building designs that minimize energy consumption by taking advantage of sun/shade patterns, prevailing winds, landscaping, and building materials.

COSR-3.2: Encourage new development and existing structures to install energy saving features.

4.5.4 Thresholds of Significance

The thresholds for energy impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to energy if it would:

Threshold 4.5.1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Threshold 4.5.2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

4.5.5 Project Impacts

Threshold 4.5.1: Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact.

Construction. Construction of the proposed project is anticipated to last 20 months, and would require energy for activities such as the manufacture and transportation of building materials, demolition and grading activities, and building construction. Construction of the proposed project

would require electricity to power construction-related equipment. Construction of the proposed project would not involve the consumption of natural gas. The construction-related equipment would not be powered by natural gas, and no natural gas demand is anticipated during construction.

Transportation energy represents the largest energy use during construction and would occur from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of energy use during construction focuses on fuel consumption. Construction trucks and vendor trucks hauling materials to and from the project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the project site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, VMT, the fuel efficiency of the vehicles, and travel mode.

As indicated in Table 4.5.A, the project would consume approximately 72,347 gallons of diesel fuel and approximately 162,160 gallons of gasoline during construction, which would increase the annual construction generated fuel use in Orange County by approximately 0.05 percent for diesel fuel usage and approximately 0.01 percent for gasoline fuel usage. As such, project construction would have a negligible effect on local and regional energy supplies. Furthermore, impacts related to energy use during construction would be temporary and relatively small in comparison to Orange County's overall use of the State's available energy sources. No unusual project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the State.

Table 4.5.A: Proposed Project Energy Consumption Estimates

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Project Construction		
Diesel Fuel (total gallons)	72,347 gallons	0.05%
Gasoline (total gallons)	162,160 gallons	0.01%
Project Operation		
Electricity Consumption (kWh/year)	4,094,453 kWh	0.02%
Natural Gas Consumption (therms/year)	94,546 therms	0.04%
Automotive Fuel Consumption		
Gasoline (gallons/year)	407,128 gallons	0.03%
Diesel Fuel (gallons/year)	26,198 gallons	0.02%

Source: Compiled by LSA (December 2019).
kWh = kilowatt-hours

For these reasons, fuel consumption during construction would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature, and impacts would be less than significant. No mitigation is required.

Operation. Energy use consumed by the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project. As shown in Table 4.5.A, the estimated potential increase in electricity demand associated with the operation of the proposed project is 4,094,543 kWh per year. Total electricity demand in Orange County in 2018

was approximately 19,858,000,000 kWh. Therefore, operation of the proposed project would increase the annual electricity consumption in Orange County by approximately 0.02 percent.

As shown in Table 4.5.A, the estimated potential increase in natural gas demand associated with the proposed project is 94,546 therms per year. Total natural gas consumption in Orange County in 2018 was 236,102,647 therms. Therefore, operation of the proposed project would negligibly increase the annual natural gas consumption in Orange County by approximately 0.04 percent.

Electrical and natural gas demand associated with project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Furthermore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The project would be required to adhere to all federal, State, and local requirements for energy efficiency, including the Title 24 standards. Title 24 building energy efficiency standards establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Compliance with Title 24 standards is required as identified in Regulatory Compliance Measure E-1, which would significantly reduce energy usage. Impacts are considered less than significant, and no mitigation is required.

The proposed project would also result in energy usage associated with gasoline and diesel fuel consumed by project-related vehicle trips. As shown in Table 4.5.A, fuel use associated with the vehicle trips generated by the proposed project is estimated at 407,128 gallons of gasoline and 26,198 gallons of diesel fuel per year. The amount of operational fuel use was estimated using CARB's EMFAC2017 model, which provided projections for typical daily fuel usage in Orange County. This analysis conservatively assumes that all vehicle trips generated as a result of project operation would be new to Orange County. Based on fuel consumption obtained from EMFAC2017, 160.5 million gallons of diesel and 1.3 billion gallons of gasoline were consumed from vehicle trips in Orange County in 2018. Therefore, operation of the proposed project would increase the annual gasoline and diesel fuel consumption in Orange County by approximately 0.03 percent and 0.2 percent, respectively. Fuel consumption associated with vehicle trips generated by project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. The proposed project would increase internal trip capture between residential and retail segments through its mixed-use design. Additionally, the proposed project would facilitate transit use by providing a new dense, mixed-use development on an underutilized property along a major arterial street (Katella Avenue), which is already served by existing transit service. Furthermore, the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Impacts are considered less than significant, and no mitigation is required.

Threshold 4.5.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase

the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for ZEVs and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC recently adopted the *2017 Integrated Energy Policy Report*[1] and the *2018 Integrated Energy Policy Report Update.*[2] The Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. The City of Cypress relies on the State integrated energy plan and does not have its own local plan to address renewable energy or energy efficiency.

As indicated above, energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the overall use in the County. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the overall use in Orange County, and the State's available energy source. Therefore, energy impacts at the regional level would be negligible. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the CEC's Integrated Energy Policy Report. Additionally, as demonstrated above under Threshold 4.5.1, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Potential impacts related to conflict with or obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.

4.5.6 Level of Significance Prior to Mitigation

Energy impacts related to the inefficient, wasteful, and unnecessary consumption of energy are considered less than significant, and no mitigation is required.

4.5.7 Regulatory Compliance Measures and Mitigation Measures

4.5.7.1 Regulatory Compliance Measures

The proposed project would comply with the following regulatory standard.

Regulatory Compliance Measure E-1 **California Code of Regulations (CCR), Title 24.** Prior to the issuance of building permits, the City of Cypress (City) Chief Building Official, or designee, shall confirm that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and green building standards, as well as those listed in Part 11 (California Green Building Standards [CALGreen Code]). The City's Chief Building Official shall confirm that the project complies with the mandatory measures listed in the

1 CEC. 2017. *2017 Integrated Energy Policy Report.* Publication Number: CEC-100-2017-001-CMF.
2 CEC. 2018a. *2018 Integrated Energy Policy Report*. Publication Number: CEC-100-2018-001-V1.

CALGreen Code for residential and non-residential building construction.

4.5.7.2 Mitigation Measures

No mitigation is required for the proposed project.

4.5.8 Level of Significance after Mitigation

Construction and operational impacts related to energy use would be less than significant. No mitigation is required.

4.5.9 Cumulative Impacts

The geographic area for cumulative analysis of electricity is that of the SCE service area, while the geographic area for cumulative analysis of natural gas service is that of the SoCalGas service area. The proposed project would result in an increased services demand in electricity and natural gas. Although the proposed project would result in a net increase in demand for electricity, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts. As discussed previously, the total annual electricity consumption in the SCE service area in 2017 was 84,291.6 GWh. By 2030, consumption is anticipated to increase by approximately 12,000 GWh for the low-demand scenario and by 22,000 GWh for the high-demand scenario.[1] While this forecast represents a large increase in electricity consumption, the proposed project's share of cumulative consumption would negligible. The proposed project, in combination with cumulative development, is well within SCE's system-wide net annual increase in electricity supplies over the 2018 to 2030 period, and there are sufficient planned electricity supplies in the region for estimated net increases in energy demands.

Similarly, additional natural gas infrastructure is not anticipated due to cumulative development. Total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms. Between 2018 and 2035, total natural gas consumption in the SoCalGas service area is forecast to remain steady for the low- and mid-demand scenarios and to increase by approximately 650 million therms in the high-demand scenario due to intense energy efficiency efforts.[2] The proposed project's share of cumulative consumption of natural gas in the SoCalGas service area would be negligible. It is anticipated that SoCalGas would be able to meet the natural gas demand of the related projects without additional facilities. In addition, both SCE and SoCalGas demand forecasts include the growth contemplated by the proposed project and the related projects. Increased energy efficiency to comply with building energy efficiency standards will reduce energy consumption on a per-square-foot basis. Furthermore, utility companies are required to increase their renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. SCE and SoCalGas plan to continue to provide reliable service to their customers and upgrade their distribution systems as necessary to meet future demand.

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1 CEC. 2018b. California Energy Demand, 2018–2030 Revised Forecast. Publication Number: CEC-200-2018-002-CMF. February. Website: https://efiling.energy.ca.gov/getdocument.aspx?tn=223244 (accessed December 12, 2019).

2 Ibid.

Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and to the total number of vehicle trips and VMT throughout Orange County and the region. The proposed project and related projects are required to comply with various federal and State government legislation to improve energy efficiency in buildings, equipment, and appliances, and reduce VMT.

Compliance with Regulatory Compliance Measure E-1 would ensure that the proposed project does not result in an inefficient, wasteful, and unnecessary consumption of energy. Therefore, the proposed project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.

4.6 GEOLOGY AND SOILS

This section provides a discussion of the existing geology and soils setting and an analysis of the Cypress City Center project's (proposed project) potential geology and soils impacts. This section also addresses potential impacts due to the local geology underlying the project site, as well as slope stability, ground settlement, soil conditions, grading, and regional and local seismic conditions. This section also evaluates potential impacts to paleontological resources. This section summarizes information provided in the *Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California* (Geotechnical Assessment) (NMG Geotechnical, Inc. [NMG], June 13, 2019). This report is included as Appendix E to this Draft Environmental Impact Report (EIR). This section also incorporates data from the City of Cypress (City) General Plan (City of Cypress 2000), numerous State and federal studies of geologic and seismic hazards in the vicinity of the City, site-specific investigations in the project site, and field observations.

4.6.1 Methodology

To assess the impacts of the proposed project with respect to geologic and soil conditions, NMG conducted a Geotechnical Assessment and field explorations, and reviewed previous geotechnical reports prepared by others with respect to the project site. The discussion below describes the scope of the exploration, including methods used during site reconnaissance and the results of pertinent prior explorations, laboratory tests, and engineering analyses.

4.6.1.1 Background Research and Data Review

Existing geologic literature (i.e., geologic maps, boring logs, and other applicable data) was reviewed by NMG.

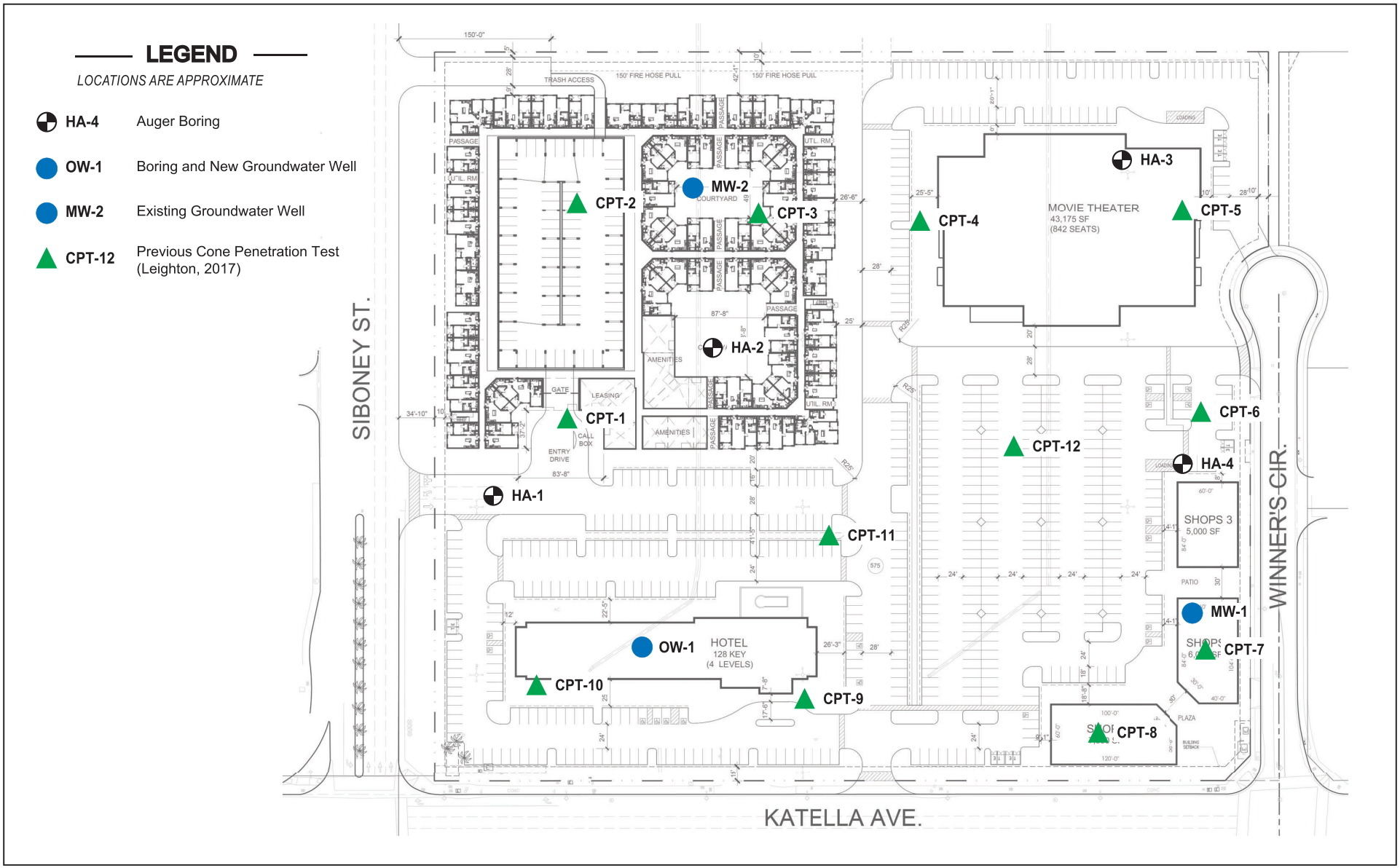
4.6.1.2 Site Reconnaissance

A site reconnaissance and a subsurface exploration of the project site were conducted by NMG. This included marking exploration and test locations for geology and soils that were analyzed in the Geotechnical Assessment.

4.6.1.3 Field Investigation

A preliminary field investigation was conducted by NMG to identify subsurface conditions on the project site related to soil types, groundwater, liquefaction, corrosive soils, settlement, and the potential need for remedial grading. As part of the field investigation, five small-diameter borings, at the locations shown on Figure 4.6.1, Boring, Well, and CPT Locations, were conducted on the project site to a maximum depth of 20 feet (ft) below the surface. One of the boring locations was converted to a groundwater observation well. Liquefaction analysis was performed using cone penetrometer (CPT) data from a prior study. All boring sites, wells, and CPT locations are shown in Figure 4.6.1.

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FIGURE 4.6.1

Cypress City Center

Boring, Well, and CPT Locations

SOURCE: NMG Geotechnical, Inc.

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4.6.1.4 Geotechnical Laboratory Testing/Analysis

Laboratory testing was conducted on soil samples collected during the field investigation. Tests were performed to analyze the soil's moisture content, in-place dry density and moisture content, maximum dry density and optimum moisture content, expansion index, shear strength, consolidation characteristics, grain size distribution, Atterberg limits, and organic content, as well as chemical activity.

Soils, geology, and seismic hazards, as identified in the Geotechnical Assessment, were assessed with respect to significance within the context of Appendix G to the *State CEQA Guidelines*.

To assess the impacts of the project with respect to paleontological resources, project plans, geologic maps of the project site, and relevant geological and paleontological literature were reviewed to determine which geologic units are present within the project site and whether fossils have been recovered within the project site or from those or similar geologic units elsewhere in the region. In addition, a search for known fossil localities was conducted at the Natural History Museum of Los Angeles County (LACM) to determine the status and extent of previously recorded paleontological resources within and surrounding the project site. A field survey was also conducted to identify any paleontological resources and to note the sediments at the surface.

4.6.2 Existing Environmental Setting

4.6.2.1 Project Site

The topography of the project site is generally flat, with an elevation range on the project site of between 22 and 25 ft above mean sea level. Variations in topography occur along the southerly property boundary, where there is some existing landscaping.

4.6.2.2 Regional Geology

The project site is located within the Los Angeles Basin, a northwest-trending alluviated lowland situated at the north end of the Peninsular Ranges geomorphic province of coastal Southern California. The Los Angeles Basin is subdivided into four primary structural blocks that are distinguished from one another by contrasting basement rock types and stratigraphy. More specifically, the project site is located within the east-central portion of the Downey Plain, a broad lowland area that comprises a large portion of the Central Block of the Los Angeles Basin. This plain is bounded by the Santa Monica Mountains to the north, the Puente Hills and Santa Ana Mountains to the northeast and east, and a northwest-trending alignment of hills and mesas to the west and southwest.

In the area of the project site, the soils that form this extensive alluvial plain are composed primarily of geologically young materials deposited as a result of sedimentation along the Santa Ana and San Gabriel Rivers, with additional materials contributed from smaller canyons that drain the adjoining upland areas to the northeast.

4.6.2.3 Local Geology and Subsurface Conditions

The area occupied by the southern portion of the City of Cypress is underlain by unconsolidated, generally fine-grained, Holocene-age alluvial floodplain deposits composed primarily of various combinations of silt, sand, and clay. Underlying these Holocene alluvial deposits are older, semi-consolidated to consolidated Quaternary-age sediments that extend to depths of 2,700 ft to greater than 4,200 ft below the surface.

The subsurface investigation revealed that the project site is underlain predominantly by approximately 100 ft of Holocene sediments and a total of approximately 2,600 ft of Quaternary sediments. These materials consist of interlayered sands and silts. The native alluvial materials described above are likely to be capped by several feet of Artificial Fill in most areas of the project site.

4.6.2.4 Local Groundwater Conditions

Information pertaining to the occurrence of groundwater within inland portions of Orange County has primarily been obtained from borehole logs prepared during installation of the numerous water wells throughout the area. In the City and surrounding areas, groundwater may occur within the upper 40 to 50 ft of Holocene-age sediments. This water typically occurs within thin layers of silty sand and sand at depths of between 5 and 50 ft below the surface. A publication from the California Division of Mines and Geology[1] indicates that the project site is located within an area where shallow groundwater (i.e., groundwater existing at a depth of 40 ft or less below the ground surface) would typically be expected to occur. That publication indicates that the historical high groundwater depth for the project site is approximately 10 ft below the surface.

The CPT sounding data in the Geotechnical Assessment indicate that static groundwater levels on the project site are very shallow, ranging from approximately 4.5 to 6 ft below the surface at the time of the field investigation. This depth range is consistent with the groundwater depths reported by recent investigations, indicating that the historic high groundwater of 10 ft below the surface is obsolete.

4.6.2.5 Fault Systems and Seismic Conditions

A potentially active fault is defined by the State as a fault with a history of movement within Pleistocene time (between 11,000 and 1.6 million years ago [Ma]). The active and potentially active faults are capable of producing potentially strong seismic shaking at the project site. It is anticipated that the project site will periodically experience ground acceleration as a result of earthquakes. The closest mapped active fault to the project site is the Newport-Inglewood Fault, located approximately 4.6 miles southwest of the project site. In addition, several other active faults are located in the vicinity of the project site, including the Puente Hills Blind Thrust Fault (6.1 miles to the northeast).

[1] California Division of Mines and Geology (CDMG), 1976, Environmental Geology of Orange County, California Open-File Report 79-8 LA.

No portion of the project site or larger study area in the Geotechnical Assessment is located within the boundaries of an "Earthquake Fault Zone," as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. Furthermore, the Cypress General Plan Safety Element indicates that no active faults have been identified within City boundaries.

Seismic shaking is characterized by the physical movement of the land surface during and subsequent to an earthquake. Seismic shaking has the potential to cause destruction and damage to buildings and property, including damage resulting from damaged or destroyed gas or electrical utility lines, disruption of surface drainage, blockage of surface seepage and groundwater flow, changes in groundwater flow, dislocation of street alignments, displacement of drainage channels and drains and possible loss of life. In addition, ground shaking can induce several kinds of secondary seismic effects, including liquefaction, differential settlement, and landslides.

The intensity of seismic shaking during an earthquake depends largely on the geologic foundation conditions of the materials composing the upper several hundred feet of the Earth's surface. The greatest amplitudes and longest durations of ground shaking occur on thick, water-saturated, unconsolidated alluvial sediments, which may lead to liquefaction (as further described below). Ground shaking can also cause ground failure or deformation due to lurching and liquefaction.

Surface fault rupture refers to the displacement of the ground surface along a fault, which can occur during strong earthquakes. The potential for seismic hazards at the project site is a consequence of ground shaking caused by events on nearby active faults. However, as previously discussed, the project site is not located within a designated Alquist-Priolo Earthquake Fault Zone, so the possibility for surface fault rupture is low. The project site is, however, located approximately 4.6 miles to the northeast of an earthquake fault zone that has been established around the active traces of the Newport-Inglewood Fault.

4.6.2.6 Liquefaction and Lateral Spreading

Liquefaction occurs when saturated, cohesionless soils temporarily lose shear strength (liquefy) due to increased pore water pressures induced by strong ground motion during an earthquake. Intervals of loose sand may, therefore, be subject to liquefaction if these materials are or were to become submerged and also exposed to strong seismic ground shaking. Seismic ground shaking of relatively loose, granular soils that are saturated or submerged can cause the soils to liquefy and temporarily behave as a dense fluid. This loss of support can produce local ground failure such as settlement or lateral spreading that may damage overlying improvements.

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "unconfined" face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and is often associated with liquefaction.

As discussed in the Geotechnical Assessment, the project site is located within a Liquefaction Hazard Zone, as designated by the California Geological Survey. This zone extends well beyond the project site and encompasses all of the land area within the boundaries of the City of Cypress, as well as large portions of the adjacent Cities of Los Alamitos, Garden Grove, Stanton, Anaheim, and Buena

Park. The Safety Element of the City's General Plan identifies the project site as an area at a potentially high risk of liquefaction.

4.6.2.7 Subsidence

The phenomenon of widespread land sinking, or subsidence, is generally related to substantial overpumping of groundwater or petroleum reserves from deep underground reservoirs. Like most of northern Orange County, the City lies atop the Orange County Groundwater Basin (Orange County Basin). Although slight subsidence has been observed elsewhere in the Orange County Basin in Santa Ana (likely due to groundwater withdrawal) and in the Huntington Beach area (likely due to oil withdrawal), there is no recent history of subsidence in the project vicinity.[1] Groundwater levels and storage in the Orange County Basin are managed by the Orange County Water District (OCWD) in a manner that reduces the potential for land subsidence to occur.

4.6.2.8 Compressible/Collapsible Soils

Compressible soils are soils that consolidate when exposed to new loading, such as Artificial Fill or foundation loads. Soil collapse occurs when soils substantially decrease in volume following an increase in moisture content. The results of the subsurface investigation within the project site, as well as investigations conducted for previous reports, indicate that the majority of the project site is underlain by fill soil that extends to depths of 2 to 5 ft below the surface. In localized areas, this fill may extend as deep as 9 ft.

During the subsurface investigation, the presence of medium to firm native alluvial soils was noted from a depth of approximately 10 ft to a depth of approximately 30 ft below the existing ground surface.

4.6.2.9 Paleontological Resources

Results of the literature review indicate that the project site is located within the Peninsular Ranges Geomorphic Province, a 900-mile long northwest-southeast trending structural block that extends from the Transverse Ranges in the north to the tip of Baja California in the south and includes the Los Angeles Basin (California Geological Survey 2002; Norris and Webb 1976). This province is characterized by mountains and valleys that trend in a northwest-southeast direction, roughly parallel to the San Andreas Fault Zone (Norris and Webb 1976; Sharp 1976). Within this larger region, the project site is located in the Los Angeles Basin, a broad alluvial lowland bounded to the north and east by the San Gabriel and Santa Ana Mountains, respectively, and by the Pacific Ocean to the southwest (Yerkes et al. 1965). The basin is underlain by a structural depression that has discontinuously accumulated thousands of feet of marine and terrestrial deposits since the Late Cretaceous (approximately 100.5 Ma) (Yerkes et al. 1965). Surficial geologic mapping indicates that the project site contains Young Alluvial Fan Deposits, Unit 2 (Saucedo et al. 2016). Although Artificial Fill was not mapped, it was likely placed in certain areas of the project site during previous development. Ages for the geologic time intervals referenced herein are derived from the

[1] Metropolitan Water District of Southern California. 2007. Groundwater Assessment Study, Chapter IV – Groundwater Basin Reports, Orange County Basins – Orange County Basin, September. Website: http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/groundwater/PDFs/OrangeCountyBasins/OrangeCountyBasin.pdf (accessed April 8, 2015).

International Chronostratigraphic Chart prepared by the International Commission on Stratigraphy (Cohen et al. 2019).

Artificial Fill consists of sediments that have been removed from one location and transported to another location by human activity, rather than by natural means. The transportation distance can vary from a few feet to many miles, and composition is dependent on the source and purpose. Artificial Fill will sometimes contain modern debris such as asphalt, wood, bricks, concrete, metal, glass, plastic, and even plant material. While Artificial Fill may contain fossils, these fossils have been removed from their original location and are thus out of stratigraphic context. Therefore, they are not considered important for scientific study, and Artificial Fill has no paleontological sensitivity.

The Young Alluvial Fan Deposits, Unit 2 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 sediments were eroded from higher elevations, carried by flooding streams and debris flows, and deposited in gently sloping fan-shapes at the base of the hills (Saucedo et al. 2016). Although Holocene (less than 11,700 years ago) deposits can contain remains of plants and animals, only those from the middle to early Holocene (4,200 to 11,700 years ago) are considered scientifically important (Society of Vertebrate Paleontology [SVP] 2010), and fossils from this time interval are not very common. These Holocene deposits overlie older, Pleistocene deposits, which have produced scientifically important fossils elsewhere in the region (Jefferson 1991a, 1991b; Miller 1971; Reynolds and Reynolds 1991). These older, Pleistocene deposits span the end of the Rancholabrean North American Land Mammal Age (NALMA), which dates from 11,000 to 240,000 years ago (Sanders et al. 2009) and was named for the Rancho La Brea fossil site in central Los Angeles. The presence of *Bison* defines the beginning of the Rancholabrean NALMA (Bell et al. 2004), but fossils from this time also include other large and small mammals, reptiles, fish, invertebrates, and plants (Jefferson 1991a, 1991b; Miller 1971; Reynolds and Reynolds 1991). There is a potential to find these types of fossils in the older sediments of this geologic unit, which may be encountered below a depth of approximately 10 ft. Therefore, these deposits are assigned a low paleontological sensitivity above a depth of 10 ft and a high sensitivity below that mark.

According to the locality search conducted by the LACM, there are no known fossil localities on the project site. However, the LACM states that it has a record of fossil localities from older, Pleistocene alluvial deposits (i.e., Young Alluvial Fan Deposits, Unit 2 at depth) near the project site. The closest locality, LACM 3757, is southwest of the project site south of 7th Street and east of Pacific Coast Highway. This locality produced specimens of eagle ray (*Myliobatis*), guitarfish (Rhinobatoidea), white shark (*Carcharodon*), blue shark (*Prionace*), surfperches (*Damalichthys* and *Rhacochilus*), croaker (*Genyonemus*), pond turtle (*Emys*), sea duck (*Chendytes*), loon (*Gavia*), dog (*Canis*), sea otter (*Enhydra*), horse (*Equus*), camel (*Hemiauchenia*), and pocket gopher (*Thomomys*). Farther to the west along 7th Street, west of Pacific Coast Highway, locality LACM 6746 produced a fossil mammoth (*Mammuthus*). To the west-southwest of the project site, locality LACM 7493, which is near the intersection of Pacific Coast Highway and Grand Avenue, produced a specimen of camel (*Camelidae*) at a depth of 8.5 ft below the surface. A copy of the results letter from the LACM is included in Appendix E.

The majority of the project site is paved; therefore, the field survey concentrated on areas of exposed ground around the perimeter of the project site. Visibility during the field survey was poor

(less than 10 percent) as many of the unpaved areas were landscaped and covered with non-native vegetation. Exposed sediment consisted of light brown silty sand, overlain by bird's eye gravel in some places (i.e., Artificial Fill). No native deposits or paleontological resources were noted during the field survey.

4.6.3 Regulatory Setting

4.6.3.1 Federal Regulations

There are no federal policies or regulations related to geology and soils that are applicable to the proposed project.

4.6.3.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (1972). The Alquist-Priolo Earthquake Fault Zoning Act of 1972 and updates (California PRC, Section 2621, et seq.) is the principal California State guidance to prevent the construction of habitable structures on the surface trace of active earthquake faults. If an active fault is found, a structure for human occupancy must be set back from the fault (generally 50 ft). The Alquist-Priolo Earthquake Fault Zoning Act only addresses the hazard of surface fault rupture; it does not consider other earthquake hazards. There are no known earthquake fault zones on or in the near vicinity of the project site; therefore, regulations recommended by the California Geological Survey (CGS) for investigations conducted in such zones do not specifically apply.

Seismic Hazard Mapping Act (1990). The Seismic Hazard Mapping Act (SHMA) was adopted by the State in 1990 to address the potential hazards posed by secondary effects of seismic activity, including strong ground shaking, soil liquefaction, and associated ground failure and seismically induced landslides. The CGS prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazard zones are referred to as "zones of required investigation" because site-specific geological investigations are required for construction projects located within these areas. Before a project can be permitted, a geologic investigation, evaluation, and written report must be prepared by a licensed geologist to demonstrate that the potential hazards can be successfully mitigated.

Public Resources Code. Section 5097.5 of the PRC provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

4.6.3.3 Local Regulations

City of Cypress Municipal Code. Building and construction in the City are subject to the regulations of the City of Cypress Municipal Code. California Code of Regulations (CCR), Title 24, Part 2, the California Building Code (CBC) (2019), provides minimum standards for building design in the State. Local codes are permitted to be more restrictive than Title 24, but not less restrictive. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic design category. The seismic ratings used

in the CBC are derived from the International Building Code specifications. Most of coastal Southern California, including the project site, is located in Seismic Design Category D. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in the California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8). In addition, the proposed project would adhere to the regulatory standards described in Regulatory Compliance Measure GEO-1, which includes the seismic and building standards in the City's Building Code, that adopt the CBC with amendments and modifications.

City of Cypress General Plan Conservation/Open Space/Recreation Element. The existing City of Cypress General Plan identifies goals and policies related to paleontological resources. Goal COSR-5 in the Conservation/Open Space/Recreation Element of the City's General Plan addresses paleontological resources (and potential resources) and indicates that conservation of the resources and investigation of potential resource areas is an important undertaking for connecting with the community's past (City of Cypress, 2000).

The following goal and policies apply to the proposed project:

COSR-5: Preserve Cypress' archaeologic and paleontological resources.

COSR-5.1: Update records of resource finds and locations when required.

COSR-5.2: Prior to development in previously undeveloped areas, require strict adherence to the CEQA guidelines for environmental documentation and mitigation measures where development will affect archaeological or paleontological resources.

4.6.4 Thresholds of Significance

The thresholds for geology and soils impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to geology and soils if it would:

Threshold 4.6.1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

(i): Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidences of known fault? (Refer to Division of Mines and Geology Special Publication 42)

(ii): Strong seismic ground shaking?

(iii):Seismic-related ground failure, including liquefaction?

(iv):Landslides?

Threshold 4.6.2: **Result in substantial soil erosion or the loss of topsoil?**

Threshold 4.6.3: **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?**

Threshold 4.6.4: **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?**

Threshold 4.6.5: **Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

Threshold 4.6.6: **Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

4.6.5 Project Impacts

Threshold 4.6.1(i): **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidences of known fault? (Refer to Division of Mines and Geology Special Publication 42)**

No Impact. According to the California Department of Conservation 2010 Fault Activity Map, there are no known earthquake faults that run through the project site, nor is there any other evidence of a known fault that runs through the project site. Therefore, although the proposed project is in a seismically active region, it would not result in any impact related to the rupture of a known earthquake fault, and there would be no impact.

Threshold 4.6.1(ii): **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?**

Less Than Significant with Mitigation Incorporated. As with all of Southern California, the project site is subject to strong ground motion resulting from earthquakes on nearby faults. There are several faults in the vicinity of the project site that are capable of producing strong ground motion, including the Newport-Inglewood Fault, the Puente Hills Blind Thrust Fault, the San Joaquin Hills Thrust Fault, the Palos Verdes Fault, and the Whittier Fault. During an earthquake along any of these faults or other faults in the region, seismically induced ground shaking would be expected to occur. The severity of the shaking would be influenced by the magnitude of the earthquake, the distance of the project site to the seismic source, the soil conditions, the depth to groundwater, and the duration of the seismic event.

Peak ground acceleration (PGA) is a measure of earthquake acceleration on the ground and an important input parameter for earthquake engineering. Based on the Geotechnical Assessment, a design-level PGA of 0.55 g has been calculated for the project site. This acceleration is consistent with other areas in this region of California that are underlain by similar geologic materials and indicates that strong seismic ground shaking generated by seismic activity is considered a potentially significant impact that may affect people or structures associated with the proposed project.

Mitigation Measure GEO-1 requires the project Applicant/Developer to comply with the recommendations of the Geotechnical Assessment, which stipulates appropriate seismic design provisions that shall be implemented with project design and construction. The proposed project would adhere to the adopted City's Building Code, including the seismic standards therein, consistent with Regulatory Compliance Measure GEO-1. With the implementation of Mitigation Measure GEO-1 and adherence to the regulatory standards described in Regulatory Compliance Measure GEO-1, potential project impacts related to seismic ground shaking would be reduced to a less than significant level.

Threshold 4.6.1(iii): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Less Than Significant with Mitigation Incorporated. The secondary effects of seismic activity that are typically considered as potential hazards to a particular site include several types of ground failure. The general types of ground failure that can occur as a consequence of severe ground shaking include landsliding, ground subsidence, ground lurching, and shallow ground rupture, as well as liquefaction-induced vertical settlement, lateral spreading, and surface manifestation of liquefaction. The probability of the occurrence of each type of ground failure depends on the severity of the earthquake, distance from the causative fault, topography, soil and groundwater conditions, and other factors. Of these seismically induced ground failure modes, liquefaction-induced settlement and surface manifestation appear to be the only potential concerns with respect to the proposed project.

Liquefaction can cause settlement of the ground surface, settlement and tilting of engineered structures, flotation of buoyant buried structures, and fissuring of the ground surface. Assessment of liquefaction potential for a particular site requires knowledge of a number of regional and site-specific parameters, including the estimated design earthquake magnitude, the distance to the assumed causative fault, and the associated probable peak horizontal ground acceleration at the site, subsurface stratigraphy, and soil characteristics. Parameters such as distance to causative faults and estimated probable peak horizontal ground acceleration were determined using published references and online computer programs by the United States Geological Survey (USGS). Stratigraphy and soil characteristics were determined by means of a site-specific subsurface investigation combined with appropriate laboratory analysis of representative samples of on-site soils.

An analysis was performed using data from the previous CPT soundings conducted at the project site. As previously discussed, groundwater was observed at depths of between 4.5 and 6 ft below the ground surface. For purposes of the liquefaction analysis, the groundwater level was assumed to be 5 ft. Therefore, there is potential for liquefaction on the project site.

Many jurisdictions, including the Counties of Orange and Los Angeles, allow structural fortification of slabs and footings to mitigate the adverse effect of up to 4 inches of liquefaction-induced total settlement. Guidelines published by the CGS also suggest that structural mitigation is acceptable where vertical displacements of less than 4 inches are predicted (CGS Special Publication 117A, page 54). If liquefaction-induced settlement would exceed 4 inches, some form of ground improvement is required to reduce the potential total settlement to 4 inches or less. Typical ground improvement techniques include compaction grouting, installation of stone columns, and construction of reinforced earth zones beneath proposed structural areas.

Based on the results of the Geotechnical Assessment, the maximum estimated vertical settlement was calculated to be approximately 2.9 inches for the CPT locations within the project site. This is well within the commonly accepted limitations of structural mitigation described above (i.e., 4 inches).

Predicted liquefaction-induced total settlement with respect to most of the project site would be addressed by incorporating deep foundations or ground improvement for the larger buildings into the design (Mitigation Measure GEO-1). The best-suited ground improvement to mitigate settlement of the large structures would be stone columns or (Geopier brand) rammed aggregate piers (RAP) approximately 15 ft deep. Mitigation Measure GEO-1 also includes ground improvement recommendations (a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement) in the areas of the smaller retail buildings to mitigate potential impacts related to liquefaction-induced settlement. The deeper undocumented fill in the southeast corner of the project site (future retail shops area) would also be completely removed and replaced with engineered fill (Mitigation Measure GEO-1). With the implementation of Mitigation Measure GEO-1, the potential adverse effects of seismic-related ground failure including liquefaction would be less than significant.

Threshold 4.6.1(iv): Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?

No Impact. The project site and vicinity are relatively flat, and the site is not located within a zone of earthquake induced landslide as mapped by the CGS (1998). Historically, there have been no recorded landslides within the City's boundaries (City of Cypress, 2001, page 4.6-7). No landslides are anticipated as the result of the proposed project, and there would be no impact.

Threshold 4.6.2: Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. 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. The total surface area of these existing unpaved areas is

approximately 1 acre. As discussed in Section 4.9, Hydrology and Water Quality, during project construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. As discussed above, the Construction General Permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) (Regulatory Compliance Measure HYD-1, in Section 4.9, Hydrology and Water Quality). The SWPPP would detail Erosion Control and Sediment Control BMPs to be implemented during project construction to minimize erosion and retain sediment on site. With compliance with the requirements of the Construction General Permit and with implementation of the construction BMPs, construction impacts related to on-site erosion would be less than significant, and no mitigation is required.

As discussed in Section 4.9, Hydrology and Water Quality, the project would not change the impervious surface area on site (the site would consist of 12 acres of impervious surface area in the existing and proposed conditions). In the proposed condition, 12 acres on the project site would be impervious surface area and not prone to on-site erosion or siltation because no soil would be included in these areas. The remaining acreage on the approximately 13-acre project site would consist of pervious surface area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. Therefore, on-site erosion impacts would be minimal. For these reasons, operational impacts related to substantial on-site erosion would be less than significant, and no mitigation is required.

Threshold 4.6.3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?

4.6.5.1 Landslides and Unstable Slopes

Less Than Significant Impact. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking. Because the project site is located in a relatively flat area, landslides or other forms of natural slope instability do not represent a significant hazard to the project. In addition, as stated above, the site is not within a State-designated hazard zone for an earthquake-induced landslide. Therefore, potential impacts related to landslides would be less than significant, and no mitigation is required.

4.6.5.2 Lateral Spreading

Less Than Significant Impact. Lateral spreading often occurs on very gentle slopes or flat terrain. The dominant mode of movement is lateral extension accompanied by shear or tensile fracture. This failure is caused by liquefaction and is usually triggered by rapid ground motion, such as that experienced during an earthquake, but can also be artificially induced. When coherent material, either bedrock or soil, rests on materials that liquefy, the upper units may undergo fracturing and extension and may then subside, translate, rotate, disintegrate, or liquefy and flow. As discussed above, the Geotechnical Assessment indicates that lateral spreading is not a potential concern with

respect to the proposed project. Therefore, potential impacts related to lateral spreading would be less than significant, and no mitigation is required.

4.6.5.3 Subsidence

No Impact. Subsidence refers to broad-scale changes in the elevation of land. Common causes of land subsidence are pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils (hydrocompaction). Subsidence is also caused by heavy loads generated by large earthmoving equipment. The project site is not located within an area of known subsidence that may be associated with groundwater, peat loss, or oil extraction. Therefore, the proposed project would not be subject to potential geotechnical hazards related to subsidence, and no mitigation is required.

4.6.5.4 Liquefaction and Compressible/Collapsible Soils

Less Than Significant with Mitigation Incorporated. As discussed in detail under Threshold 4.6.1(iii) above, implementation of Mitigation Measure GEO-1 and adherence to the regulatory standards described in Regulatory Compliance Measure GEO-1 would be required to address the proposed project's impacts with respect to liquefaction and compressible soils. Provided that design and remedial grading, ground improvement (as necessary), and design of building foundation systems are performed in accordance with the applicable requirements in the CBC (adopted by the City as its Building Code with certain amendments), and current standards of practice in the area, excessive settlement resulting from liquefaction and compression of existing undocumented fill and native alluvial soils on the project site would be reduced to a less than significant level.

4.6.5.5 Wet Soils

Less Than Significant with Mitigation Incorporated. Due the presence of shallow groundwater, excavations deeper than 3–4 ft are likely to encounter groundwater and/or soft, wet soil. Implementation of Mitigation Measure GEO-1, which requires that the ground stabilization recommendations in the Geotechnical Assessment be implemented during grading and construction, would address soft ground conditions due to shallow groundwater. With implementation of Mitigation Measure GEO-1, the proposed project's impacts related to wet soils would be less than significant.

Threshold 4.6.4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?

Less Than Significant Impact. Expansive soils are soils that experience volumetric changes in response to increases or decreases in moisture content. The project site stratigraphy consists of Artificial Fill and Quaternary Alluvium (NMG 2019). These soil types have low shrink-swell potential and, therefore, are not susceptible to expansion. In the event that, following the completion of grading, it is determined that near-surface soils within building pad areas exhibit an elevated expansion potential, potential impact of those expansive soils would be addressed through design of structural foundations and floor slabs in compliance with applicable requirements in the CBC, as

adopted by the City of Cypress in its Municipal Code (Regulatory Compliance Measure GEO-1). Since the potential for expansive soils is low and any potential expansion would be addressed through compliance with applicable code requirements, the proposed project would not create substantial potential risks to life or property, and there would be less than significant impacts.

Threshold 4.6.5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed project would not include the use of septic tanks or alternative wastewater disposal systems because sanitary sewer and wastewater facilities are available in the vicinity of the project site. Therefore, the project would have no impact with respect to septic tanks or alternative wastewater disposal systems.

Threshold 4.6.6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated. Ground disturbance associated with the various components of the proposed project is expected to extend to depths of 10 ft or less below the existing ground surface, with the exception of the rammed aggregate piers, which would be used for supports for the larger buildings (i.e., theater, five-story hotel, and apartment complex) (personal communication, Shea Properties, December 2019). The rammed aggregate piers are expected to extend to a depth of 15 ft below the existing surface (personal communication, Shea Properties, December 2019). The Young Alluvial Fan Deposits, Unit 2 that lie below surficial Artificial Fill within the project site have low paleontological sensitivity from the surface to a depth of 10 ft and high sensitivity below a depth of 10 ft. As such, the majority of project activities would remain in deposits with low paleontological sensitivity. Although the rammed aggregate piers are expected to extend up to 5 ft into deposits with high paleontological sensitivity, drilling for aggregate piers has a limited impact area and presents challenges to collecting fossils and the contextual information necessary for scientific importance. Considering the paleontological sensitivity of the deposits in the project site and the excavation parameters, there is a potential for the proposed project to impact scientifically important paleontological resources. To mitigate adverse impacts to unknown, buried paleontological resources that may exist on site, Mitigation Measure GEO-2 requires that if paleontological resources are discovered during ground-disturbing activities, a qualified paleontologist shall be contacted to assess the discovery for scientific importance. The qualified paleontologist shall then make recommendations regarding treatment and disposition of the discovery, the need for paleontological monitoring, and preparation of the appropriate report. Implementation of Mitigation Measure GEO-2 would ensure that impacts to paleontological resources would be reduced to a level that is less than significant.

4.6.6 Level of Significance Prior to Mitigation

The potential for surface fault rupture, erosion, subsidence, landslides, lateral spreading, and expansive soil is less than significant, and no mitigation is required. The potential impacts related to seismic shaking, liquefaction, settlement due to undocumented fill, and wet soils would be

potentially significant prior to mitigation. The proposed project would also have potentially significant impacts on paleontological resources prior to the implementation of mitigation.

4.6.7 Regulatory Compliance Measures and Mitigation Measures

4.6.7.1 Regulatory Compliance Measures

The following Regulatory Compliance Measure is a requirement of the CBC that is applicable to the proposed project and is considered in the analysis of potential impacts related to geology and soils. The City of Cypress considers this requirement to be mandatory; therefore, it is not a mitigation measure.

Regulatory Compliance Measure GEO-1

California Building Code Compliance Seismic Standards. All structures shall be designed in accordance with the seismic parameters presented in the Geotechnical Assessment prepared for this project (NMG Geotechnical, Inc., 2019) and applicable sections of the most current California Building Code (CBC). Prior to the issuance of building permits for planned structures, the Project Soils Engineer and the City of Cypress Chief Building Official, or designee, shall review building plans to verify that the structural design conforms to the requirements of the Geotechnical Assessment and the City of Cypress Municipal Code.

4.6.7.2 Mitigation Measures

In addition to the regulatory requirements described above, the following mitigation measures would reduce potential impacts related to seismic ground shaking, liquefaction, compressible/ collapsible soils, and paleontological resources to a less than significant level.

Mitigation Measure GEO-1

Compliance with the Recommendations in the Project Geotechnical Assessment. The Applicant/Developer's construction contractor shall implement the recommendations of the *Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California* (NMG Geotechnical, June 2019; Geotechnical Assessment) prepared for the proposed project, as applicable to the satisfaction of the City of Cypress' (City) Chief Building Official or designee, including, but not limited to:

1. To address potential liquefaction potential and seismically induced settlement, stone columns or (Geopier brand) rammed aggregate piers (RAP) or equivalent ground improvement method

alternatives shall be used and installed to a depth of 15 feet (ft). Building areas where the ground is improved with RAPs or stone columns shall provide a minimum 2 ft thick layer of newly compacted fill. The smaller retail buildings may be supported on a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid reinforcement. Fill material shall be a minimum of 5 ft below finish grade or 3 ft below the bottoms of foundations, whichever is deeper. The bottom of the excavation shall have a layer of geogrid, such as Tensar 130 or BX1515 and a minimum of 2 ft of aggregate base. The remaining fill may be compacted native soil.

2. The deeper undocumented fill in the southeast corner of the project site (future retail shops area) should be completely removed and replaced with engineered fill.

3. To address shallow groundwater and wet soil, some type of ground stabilization, such as cement treatment or aggregate or a combination of both shall be used. 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.

4. Concrete slabs shall be used for all foundations and slabs on grade and shall be a minimum of 4 inches thick.

Additional site testing and final design evaluation shall be conducted by the Project Geotechnical Consultant to refine and enhance these requirements. The Applicant/ Developer shall require the Project Geotechnical Consultant to assess whether the requirements in that report need to be modified or refined to address any changes in the project features that occur prior to the start of grading. If the Project Geotechnical Consultant identifies modifications or refinements to the requirements, the Applicant/Developer shall require appropriate changes to the final project design and specifications. Design, grading, and construction shall be performed in accordance with the requirements of the City of Cypress Municipal Code and the California

Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the requirements of the Project Geotechnical Consultant as summarized in a final written report, subject to review by the City of Cypress Director of Public Works, or designee, prior to commencement of grading activities.

Grading plan review shall also be conducted by the Director of Public Works, or designee, prior to the start of grading to verify that the requirements developed during the geotechnical design evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the Project Geotechnical Consultant as summarized in a final report based on the CBC applicable at the time of grading and building, and the City's Building Code. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and the City of Cypress Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans. Prior to the final grading permits, the Project Geotechnical Consultant shall submit a Final Testing and Observation Geotechnical Report for Rough Grading to the City of Cypress Director of Public Works/City Engineer, or designee.

Mitigation Measure GEO-2

Procedures for Unexpected Paleontological Resources Discoveries. If paleontological resources are discovered during ground-disturbing activities associated with the proposed project, construction personnel shall immediately halt work within 50 ft of the discovery, and the Applicant/Developer or construction supervisor shall contact a qualified paleontologist to assess the discovery for scientific importance. A qualified paleontologist is defined as a person with an M.S. or Ph.D. in geology or paleontology and who meets the standards set forth by the Society of Vertebrate Paleontology. The paleontologist shall make recommendations regarding the collection, treatment, and disposition of the discovery. Scientifically important resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent

collections of a museum repository. If paleontological resources are discovered, regardless of their scientific importance, paleontological monitoring shall be required for subsequent ground-disturbing activities at a frequency, depth, and/or interval determined by the paleontologist. Paleontological monitoring shall be conducted by a qualified paleontological monitor as set forth in the Society of Vertebrate Paleontology standards. At the conclusion of monitoring, a final monitoring report shall be prepared by the paleontologist to document the results of monitoring and project compliance with all regulations and project requirements. If scientifically important paleontological resources are recovered, this report shall also document those paleontological resources with a catalog, descriptions, and photographs as determined appropriate by the paleontologist. The final monitoring report shall be submitted to the City of Cypress Director of Community Development Department or designee for review and approval. A copy of this final report shall also accompany the fossil material to the museum repository.

4.6.8 Level of Significance after Mitigation

With implementation of Regulatory Compliance Measure GEO-1 and Mitigation Measures GEO-1 and GEO-2, all identified potentially significant impacts related to geotechnical hazards and paleontological resources would be reduced below a level of significance.

4.6.9 Cumulative Impacts

Typically, geology and soils impacts are specific to a particular project site and there is little, if any, cumulative relationship between the development of a proposed project and development within a larger cumulative area. Moreover, while seismic conditions are regional in nature, seismic impacts on a given project site are site-specific. For example, development within the project site would not alter geologic events or soil features/characteristics (such as ground shaking, seismic intensity, or soil expansion or compression). Therefore, the proposed project would not affect the level of intensity at which a seismic event on an adjacent site is experienced.

Even if it were appropriate to evaluate cumulative geology and soils impacts, the only related projects in proximity to the project site that could potentially be relevant with respect to cumulative geotechnical impacts would be Related Project Nos. 1, 2, 3, and 4. Related Project No. 1 is the approved retail/commercial project on a 33-acre site located west of the project site and includes 244 units of senior housing, 35,600 square feet (sf) of major retail use, and 11,376 sf of restaurant uses. Related Project No. 2 is also located west of the project site, and includes a 129-unit assisted living facility and 13,700 sf of retail use. Related Project No. 3, to the north of the project site,

includes 67 apartments. Related Project No. 4, to the west of the project, is a 9-acre, 6-field soccer facility.

Due to the similarities in geologic conditions of the project site and Related Project No. 1, the *Geotechnical Feasibility and CEQA-Level Assessment: 33-Acre Parcel Located Northeast of the Intersection of Katella Avenue and Enterprise Drive, City of Cypress, California* (Petra Geosciences 2015) was reviewed for information regarding potential geotechnical issues in the project vicinity. This report confirmed that construction of Related Project No. 1 was feasible from a geotechnical standpoint upon incorporation of design and construction recommendations. Mitigation recommendations and construction design parameters were identified due to the presence of near-surface alluvial soils, Artificial Fill, high groundwater levels, and clayey soils.

No geotechnical analysis was available with respect to Related Projects No. 2, 3, or 4. However, given that the sites are located in proximity to the project site and Related Project No. 1, it is reasonably expected that these sites have similar geotechnical characteristics and raise similar geotechnical concerns. Therefore, similar mitigation and regulatory compliance are required for these related projects to mitigate and minimize potential geologic and soil impacts.

It is not anticipated that their development would have any geotechnical impact on the project site or the buildings that would be constructed as part of the proposed project, nor would the project have geotechnical impacts on any nearby projects. Therefore, the proposed project and the applicable related projects would not have the potential to cause cumulatively significant adverse impacts related to geology and soils.

Potential impacts of the proposed project to unknown paleontological resources and unique geologic features, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Cypress, could contribute to a cumulatively significant impact due to the overall loss of paleontological remains unique to the region. However, each development proposal received by the City is required to undergo environmental review pursuant to the California Environmental Quality Act (CEQA). If there were any potential for significant impacts to paleontological resources or unique geologic features, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures.

When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant. As such, implementation of Mitigation Measure GEO-2 would ensure that the proposed project, together with cumulative projects, would not result in significant cumulative impacts to unique paleontological resources or unique geologic features.

4.7 GREENHOUSE GAS EMISSIONS

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions associated with the Cypress City Center project (proposed project). This analysis used the California Emissions Estimator Model version 2016.3.2 (CalEEMod) to quantify the potential GHG emissions associated with both construction and operation of the proposed project. The CalEEMod output is contained in Appendix B of this Environmental Impact Report (EIR).

4.7.1 Methodology

The proposed project would result in criteria pollutant emissions from construction and operational sources. Construction activities would generate emissions at the site from off-road construction equipment, and on roadways as a result of construction-related truck hauling, vendor deliveries, and worker commuting. Operational activities would also generate emissions at the project site from miscellaneous on-site sources, such as natural gas combustion for cooking, heating, and landscaping equipment, and from operational-related traffic. As described above, this analysis used the CalEEMod to quantify the criteria pollutant emissions for both construction and operation of the proposed project. The maximum daily emissions are calculated for the criteria pollutants. The CalEEMod output is contained in Appendix B of this Draft EIR.

Guidance from the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), the Southern California Association of Governments (SCAG), and the South Coast Air Quality Management District (SCAQMD), the *Traffic Impact Analysis* prepared by LSA, and emissions modeling software (specifically, CalEEMod) was used to calculate the criteria pollutant emissions from the proposed project.

CalEEMod is a statewide program designed to calculate both criteria and GHG emissions from development projects in California. The description of this model is provided in Section 4.2.2.

4.7.2 Existing Environmental Setting

Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and

[1] The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33 degrees Fahrenheit (°F) ±0.32°F over the last 100 years. The rate of warming over the last 50 years is almost double that over the last 100 years (Intergovernmental Panel on Climate Change [IPCC] 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3°F to 10.5°F by the end of the century (California Energy Commission 2006). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."[1]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[2]

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur hexafluoride (SF_6).

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which some scientists believe can cause global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO2, CH4, and N2O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

[2] The GHGs listed are consistent with the definition in AB 32 (Government Code 38505).

(e.g., oceanic evaporation). For the purposes of this analysis, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of metric tons[1] of "CO_2 equivalents" (metric tons [MT] of CO_2e). For example, N_2O is 298 times more potent at contributing to global warming than CO_2. Table 4.7.A identifies the GWP for each GHG analyzed in this EIR.

Table 4.7.A: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year)[1]
Carbon Dioxide (CO_2)	~100[2]	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	121	298

Source: CARB. First Update to the Climate Change Scoping Plan (2014).

1 The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2007 Fourth Assessment Report (AR4). Website: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm (accessed December 2019).

2 CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

CARB = California Air Resources Board
CO_2 = carbon dioxide
IPCC = Intergovernmental Panel on Climate Change

The following discussion summarizes the characteristics of the six primary GHGs.

4.7.2.1 Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO_2, and

1 A metric ton is equivalent to approximately 1.1 tons.

consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s.[1]

The transportation sector remained the largest source of GHG emissions in 2016, representing 39 percent of the State's GHG emission inventory.[2] The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy-duty trucks and buses. Emissions from on-road sources constitute more than 92 percent of the transportation sector total. Industry and electricity generation were the State's second- and third-largest categories of GHG emissions, respectively.

4.7.2.2 Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 include fires, geologic processes, and bacteria that produce CH_4 in a variety of settings (most notably, wetlands) (USEPA 2010). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

4.7.2.3 Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O. The quantity of N_2O emitted varies according to the types of fuel, technology, and pollution control devices used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in the State.

4.7.2.4 Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol.[3] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in the State; however, the rapid growth in the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

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1 California Environmental Protection Agency (Cal/EPA). Climate Action Team Report to Governor Schwarzenegger and the Legislature. Website: http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF (accessed November 2018).

2 Cal/EPA. Air Resources Board. California GHG Emission Inventory. Website: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf (accessed November 2018).

3 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O_3 layer by phasing out the production of several groups of halogenated hydrocarbons that are believed to be responsible for O_3 depletion and are also potent GHGs.

4.7.3 Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

4.7.3.1 Global Emissions

Worldwide emissions of GHGs in 2017 totaled 25.6 billion MT CO_2e (UNFCCC 2019).[1] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

4.7.3.2 United States Emissions

In 2017, the United States emitted approximately 6.456 billion MT CO_2e, down from 7.4 billion MT CO_2e in 2007. United States emissions decreased by 0.5 percent from 2016 to 2017. This decrease was largely driven by a decrease in emissions from fossil fuel combustion, which was a result of multiple factors including a continued shift from coal to natural gas and increased use of renewables in the electric power sector, and milder weather that contributed to less overall electricity use. In 2017, the total United States GHG emissions were approximately 13 percent less than 2005 levels (USEPA 2019).

4.7.3.3 State of California Emissions

According to CARB emission inventory estimates, the State emitted approximately 424 million metric tons of CO_2e (MMT CO_2e) emissions in 2017. This is a decrease of 5 MMT CO_2e from 2016 and below the 2020 target of 431 MMT CO_2e (CARB 2019).

The CARB estimates that transportation was the source of approximately 37 percent of the State's GHG emissions in 2017. The transportation sector remains the largest source of GHG emissions, accounting for 40 percent (CARB 2019). Followed by electricity generation (both in-state and out-of-state) at 15 percent and industrial sources at 21 percent. The remaining sources of GHG emissions were residential and commercial activities at 9 percent, agriculture at 8 percent, high-GWP gases at 4.3 percent, and recycling and waste at 2 percent (CARB 2019).

4.7.4 Regulatory Setting

4.7.4.1 Federal Regulations

The U.S. Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S.

[1] United Nations Framework Convention on Climate Change (UNFCCC). 2019. GHG Data from UNFCCC. Website: https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc (accessed December 2019).

Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, USEPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF6— that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions; per SCAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

U.S. Mandatory Reporting Rule for GHGs (2009). In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT CO_2e or more per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012). The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers were required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017 to 2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the USEPA is reexamining the 2017–2025 emissions standards.

USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing). Pursuant to its authority under the Clean Air Act, the USEPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the USEPA was directed to develop regulations for existing stationary sources as well. However, on June 2019, the USEPA has repealed the Clean Power Plan and implemented the Affordable Clean Energy rule under President Trump's Energy Independence Executive Order.

4.7.4.2 State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Orders S-03-05 and B-30-15, Assembly Bill (AB) 32, Senate Bill (SB) 32, and SB 375.

Executive Order S-03-05. Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006). Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan. The final Scoping Plan was adopted by the California Air Resources Board (CARB) on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 MMT CO2e in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 MMT CO_2e (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MT CO_2e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan. CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated IPCC 2007 Fourth Assessment Report (AR4) GWP, and the 427 MMT CO_2e 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 MMT CO_2e (CARB 2014b).

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014b). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014b).

Executive Order B-30-15. Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent below 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197. In September 2016, Governor Brown signed SB 32 and AB 197, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 MMT CO2e for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 MT CO_2e or less per capita by 2030 and 2 MT CO_2e or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and the state's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

Senate Bill 1383. On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Final Proposed Short-Lived Climate Pollutant Strategy, which identifies the state's approach to reducing sources of short-lived climate pollutants. Human sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017a). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces their particulate emissions by over 80 percent (CARB 2017a). Additionally, SCAQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

Senate Bill 375. In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for

the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 MMT CO_2e of reductions by 2020 and 15 MMT CO_2e of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets. CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted Sustainable Community Strategies (SCSs, discussed below) to achieve the SB 375 targets. As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 MMT CO2e in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent). CARB anticipates adoption of the updated targets and methodology in 2018 and subsequent SCSs adopted afterwards would be subject to these new targets (CARB 2018).

Southern California Association of Governments' (SCAG) 2016–2040 RTP/SCS. SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources.

The 2016–2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016–2040 RTP/SCS compared to a no-plan year

2040 scenario. Under the 2016–2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

Assembly Bill 1493. California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and was anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under Federal Laws, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG and 75 percent less smog-forming emissions.

Executive Order S-01-07. On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08. A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under SBs 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350. SB 350 (de Leon) was signed into law September 2015 and established tiered increases to the RPS— 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also

set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-16-2012. On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards. Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were recently adopted on May 9, 2018, became effective starting January 1, 2020.

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less. Four key areas the 2019 standards will focus on include (1) smart residential photovoltaic systems; (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); (3) residential and nonresidential ventilation requirements; and (4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building Code: CALGreen. On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "the CALGreen Code") was adopted as part of the California Building Standards Code. The CALGreen Code established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2019. The 2019 Standards became effective on January 1, 2020.

Solid Waste Regulations. California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita

requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 CALGreen Code also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also required that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations. The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to SB 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

4.7.4.3 Regional Regulations

The City is part of the South Coast Air Basin (Basin) and is under the jurisdiction of SCAG and SCAQMD. The City of Cypress is a member city of the SCAG. SCAG's 2016–2040 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS), adopted April 7, 2016, is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. A GHG consistency analysis was conducted to determine whether or not the proposed project would be consistent with the RTP/SCS.

4.7.4.4 Local Regulations

The City of Cypress does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

4.7.5 Thresholds of Significance

The thresholds for greenhouse gas emissions impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to greenhouse gas emissions if it would:

Threshold 4.7.1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Threshold 4.7.2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.7.5.1 Regional Emissions Thresholds

The SCAQMD has adopted a significance threshold of 10,000 MT CO_2e per year (MT CO_2e/yr) for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2. Consistency with a locally adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD, under Option 1, is proposing a "bright-line" screening-level threshold of 3,000 MT CO_2e/yr for all land use types or, under Option 2, the following land-use-specific thresholds: 1,400 MT CO_2e for commercial projects, 3,500 MT CO_2e for residential projects, or 3,000 MT CO_2e for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal and therefore less than cumulatively considerable impact on GHG emissions.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MT CO_2e per year per service population (MT CO_2e/yr/SP) for project-level analyses and 6.6 MT CO_2e/yr/SP for plan-level projects (e.g., program-level projects such as general plans). The GHG efficiency metric divides annualized GHG emissions by the service population, which is the sum of residents and employees, per the following equation:

  Rate of Emission: GHG Emissions (MT CO_2e/yr) ÷ Service Population

  The efficiency evaluation consists of comparing the project's efficiency metric to efficiency targets. Efficiency targets represent the maximum quantity of emissions each resident and employee in the State of California could emit in various years based on emission levels necessary to achieve the statewide GHG emissions reduction goals. A project that results in a lower rate of emissions would be more efficient than a project with a higher rate of emissions, based on the same service population. The metric considers GHG reduction measures integrated into a project's design and operation (or through mitigation). The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for the CARB's 2008 Scoping Plan.

For the purpose of this analysis, the proposed project will first be compared to the SCAQMD interim screening level Tier 3 Numerical Screening Threshold of 3,000 MT CO_2e/yr for mixed-use development such as the proposed project was used. If it is determined that the proposed project is estimated to exceed this screening threshold, it will then be compared to the SCAQMD-recommended efficiency-based threshold of 4.8 MT CO_2e/yr per service population in 2020, and 4.3 MT CO_2e/yr per service population in 2022.

The project is also evaluated for compliance with SCAG's 2016–2040 RTP/SCS, which establishes an overall GHG target for the project region consistent with both the target date of AB 32 (2020) and the post-2020 GHG reduction goals of SB 32.

4.7.6 Project Impacts

The GHG analysis is prepared in response to the two GHG thresholds in the Appendix G Checklist of the *State CEQA Guidelines*.

Threshold 4.7.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Significant and Unavoidable Impact. During construction of the proposed project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Construction activities produce combustion GHG emissions from various sources (utility engines, tenant improvements, and motor vehicles transporting the construction crew). The tentative project construction schedule for the proposed residential, commercial, and retail development included in the proposed project is based on a probable start date of early 2020 (after asphalt demolition of existing parking lot) and a planned completion date of late 2022. The project site is mostly flat and ready for site grading and construction. For the purpose of the analysis, the proposed project would be developed in one phase with three subphases. The sequence of development would coincide with the product type, with the 20,800 sf of retail shops and 10-screen movie theater completing construction within 1 year from start of construction, the 120-room hotel about 1 year from start of construction, and the 251 apartment dwelling units within about 2 years from start of construction. Table 4.7.B presents the annual carbon dioxide equivalent (CO_2e) emissions for each of the planned construction phases based on the results from CalEEMod.

Table 4.7.B: Proposed Project Construction GHG Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2020	Demolition	67.55	0.01	0	67.85
	Site Preparation	17.60	<0.01	0	17.74
	Grading	84.69	0.03	0	85.35
	Building Construction	31.01	<0.01	0	31.09
2021	Building Construction	1,327.68	0.14	0	1,331.09
2022	Building Construction	314.89	0.03	0	315.70
	Paving	32.11	<0.01	0	32.36
	Architectural Coating	31.98	<0.01	0	32.01
Total Construction Emissions		**1,907.53**	**0.23**	**0**	**1,913.19**
Amortized over 30 years		**63.58**	**<0.01**	**0**	**63.77**

Source: LSA (January 2020).
CH_4 = methane
CO_2 = carbon dioxide
MT/yr = metric tons per year
N_2O = nitrous oxide

Long-term operation of the proposed project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. The majority of energy consumption (and associated generation of GHG emissions) would occur during the project's operation (as opposed to during its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings and less than 20 percent of energy is consumed during construction (United Nations Environment Programme 2007). Mobile-source emissions of GHGs would include project-generated vehicle trips associated with the residential, commercial, and retail vehicle trips. Area-source emissions would be associated with activities including landscaping and maintenance of the proposed project, natural gas for heating, and other sources. Increases in stationary-source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed project.

Based on trip generation factors provided in the *Traffic Impact Analysis* prepared for the proposed project (Appendix J), the proposed project would generate 5,353 average daily trips (ADTs) without any internal capture and drive-by trip credits. With these trip credits, the trip generation rate would decrease to approximately 4,978 ADTs. The CalEEMod modeling data utilizes the appliance data that is compliant with SCAQMD Rule 445 and assumes there would be no woodstoves and any fireplaces would be non-wood burning gas powered. Similar to the air quality emissions modeling, the GHG modeling incorporates project design features in accordance with the 2020 California Green Building Standard Codes such as such as photovoltaic energy for 30 percent of project power needs, provided by use of energy efficient appliances, and water-efficient faucets.

The GHG emission estimates presented in Table 4.7.C show the emissions associated with the level of development envisioned by the proposed project at project opening. Area sources include consumer products and landscaping. Energy sources include natural gas consumption for heating and cooking. As shown in Table 4.7.C, the proposed project is estimated to result in GHG emissions of 7,208 metric tons of CO_2e per year.

Table 4.7.C: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Project Construction Emissions						
Construction emissions amortized over 30 years	0	63.58	63.58	<0.01	0	63.77
Project Operational Emissions						
Area Sources	0	4.26	4.26	<0.01	0	4.36
Energy Sources	0	1,437.94	1,437.94	0.06	0.02	1,445.61
Mobile Sources	0	5,336.41	5,336.41	0.27	0	5,343.06
Waste Sources	73.03	0	73.03	4.32	0	180.92
Water Usage	10.15	126.10	136.24	1.05	0.03	170.26
Total Project Emissions	**83.17**	**6,968.30**	**7,051.47**	**5.69**	**0.05**	**7,207.98**
SCAQMD Tier 3 GHG Numerical Screening Threshold						**3,000.0**
Exceedance?						**Yes**

Source: LSA (January 2020).
Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2

The GHG emission estimates presented in Table 4.7.C show that the proposed project would generate 7,208 MT CO_2e/yr. Therefore, the proposed project's total GHG emissions would exceed the threshold of 3,000 MT CO_2e/yr. Thus, project-related emissions would have a potentially significant impact related to generation of GHG emissions.

Therefore, the project is compared with the efficiency-based threshold of 4.3 MT CO_2e/yr per service population (SP). The SCAQMD's approach is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. The SCAQMD efficiency-based threshold describes an efficiency limit using "per service population." An advantage of the service population approach is its application to both residential land uses and employment-oriented land uses. The per capita or per service population metrics represent the rates of emissions needed to achieve a fair share of the state's emission reduction mandate. The use of "fair share" in this instance indicates the GHG efficiency level that, if applied statewide or to a defined geographic area, would meet the year 2020 and post-2020 emissions targets. The intent of AB 32 and SB 32 is to accommodate population and economic growth in California but do so in a way that achieves a lower rate of GHG emissions, as evidenced in the statement from CARB's Scoping Plan. If projects can achieve targeted rates of emissions per the sum of residents plus employees (i.e., service population), California can accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and future post-2020 targets.

In order to estimate the service population (i.e., the number of residents and employees who reside and work on-site), the following assumptions were made:

- The project would include several land uses, including 20,800 square feet (sf) of retail, 251 multi-family residential dwelling units, a 120-room hotel, and a 10-screen movie theater. Based on the Project Description, the number of residents associated with the project would be 758.

- It is estimated that the apartment complex would employ two groundskeepers, one maintenance worker, and a total of six sales/office staff.

- The number of retail and hotel employees is not currently known; however, according to the U.S. Green Building Council (2008)[1], retail use can be expected to employ one person per 550 sf of building space, while hotel uses would employee one employee per 1,500 sf. Thus, based on the 20,800 sf of retail, the total retail employees would be 38, while the total number of hotel employees would be 65.

- Based on a survey of existing movie theaters, typical movie theaters employee approximately 3.75 employees per movie screen, resulting in approximately 38 employees for the project's 10 screen theater.

[1] U.S. Green Building Council (USGBC). 2020. About LEED. Website: https://www.usgbc.org/credits/new-construction-existing-buildings-commercial-interiors-core-and-shell-schools-new-constr-3 (accessed January 2020).

The total number of employees for the apartments, retail, hotel, and movie theater is estimated to be 149 employees. When added to the residential population estimate of 758, the total project service population would be 907.

For analysis purposes herein, the SP threshold for the project's buildout year of 2022 was calculated by linear interpolation between the 2020 target of 4.8 MT CO_2e/yr and the 2030 target of 2.88 MT CO_2e/yr. As such, the target for the project's buildout year of 2022 is 4.3 MT CO_2e/yr.

As shown in Table 4.7.D, the service population with the number of residents and employees would yield a CO_2e metric ton per service population ratio of 7.9.

Table 4.7.D: Greenhouse Gas Emissions per Service Population

Scenario	Project Emissions (MT CO_2e/Year)	Project Service Population (Residents + Employees)	Metric Tons of CO_2e/SP/Year	*SCAQMD Threshold for Buildout Year 2022*	Exceed Threshold?
Year 2022 Project Buildout	7,208	907	7.9	4.3	**Yes**

Source: Compiled by LSA with CalEEMod version 2016.3.2.
CO_2e/SP/Year = carbon dioxide equivalent per service population per year

As shown in Table 4.7.D, the proposed project would also exceed the SCAQMD efficiency-based significance threshold. SCAQMD thresholds were developed based on substantial evidence that such thresholds represent quantitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA. These thresholds were developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. The working group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State OPR, CARB, the Attorney General's Office, a variety of city and county planning departments in the Southern California Air Basin, various utilities such as sanitation and power companies throughout the basin, industry groups, and environmental and professional organizations.

Therefore, the proposed project's impacts related to GHG emissions would be considered significant, and mitigation would be required.

Threshold 4.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's 2016–2040 RTP/SCS. A consistency analysis with these plans for the proposed project is presented below.

CARB Scoping Plan. The CARB Scoping Plan is applicable to State agencies, but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the

local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley California Advanced Clean Cars program). Although measures in the Scoping Plan apply to state agencies and not the proposed project, the project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project would be consistent with the CARB Scoping Plan, and impacts are considered less than significant.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2016–2040 RTP/SCS was adopted April 7, 2016. SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in the 2016–2040 RTP/SCS is to plan for the southern California region to grow in more compact communities in existing urban areas; provide neighborhoods with efficient and plentiful public transit and abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands (SCAG 2016). The 2016–2040 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecast development that is generally consistent with regional-level general plan data. The projected regional development pattern, when integrated with the proposed regional transportation network identified in the 2016–2040 RTP/SCS, would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region. The 2016–2040 RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the 2016–2040 RTP/SCS, but provides incentives for consistency for governments and developers. The proposed project would involve the operation of a commercial and retail mixed-use infill development project. Additionally, the proposed project would be in close proximity (less than 0.1 mile) to the Orange County Transportation Authority (OCTA) bus stop for Bus Route 50 with several nearby bus transit stops along Katella Avenue, and with connections to the Anaheim Transit Station (i.e., Amtrak and Metrolink Trains). Furthermore, as described in Section 3.4, the proposed project is envisioned as a pedestrian-friendly mixed use development, and pedestrian access and circulation are key project components. Overall, the nearby transit facilities and proposed improvements to the pedestrian network would support public transit use and walking and bicycling. Furthermore, as discussed under Threshold 4.10.1 in Section 4.10, Land Use and Planning, the proposed project would not result in physical divisions in any established community.

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

not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

Based on the nature of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS. Therefore, the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to GHG emission, and impacts are considered less than significant.

4.7.7 Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would result in a potentially significant impact under Threshold 4.7.1.

4.7.8 Mitigation Measures

If a project cannot achieve the numeric or service population targets, mitigation measures shall be implemented to reduce project emissions to the extent feasible. Implementation of Mitigation Measures GHG-1 and GHG-2 would be required to reduce project operational GHG emissions:

Mitigation Measure GHG-1 **Energy Conservation.** Prior to the issuance of building permits, the Applicant/Developer shall provide evidence to the satisfaction of the City of Cypress Director of Community Development Department, or designee, that the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater shall be designed and built to be 10 percent more energy-efficient than 2019 Title 24 requirements or the current Title 24 requirement, whichever is more stringent.

Mitigation Measure GHG-2 **Transportation Demand Management (TDM) Program.** The Applicant/Developer shall develop a TDM Program for on-site residents and workers with the goal of reducing project-related vehicle miles traveled (VMT). The TDM strategies shall include, but not be limited to, the following:

i. Prior to the issuance of a building permit for any of the project's buildings, the Applicant/Developer shall provide evidence to the satisfaction of the Director of the City of Cypress Community Development Department, or designee, that a bicycle rack or a secured bicycle storage area shall be installed within 50 feet of each proposed building.

ii. Prior to the issuance of a certificate of occupancy for the apartment building, the Apartment Building Manager shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that bike route maps, local transit route maps and schedules, and other transportation information, such as the existing carpooling

program sponsored by the Orange County Transportation Authority (OCTA), are displayed in a prominent area accessible to residents and employees.

iii. Prior to the issuance of a certificate of occupancy for the project's commercial buildings, the Applicant/Developer shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that the lease agreements executed with any tenants contain provision requiring each business to provide cash incentives for employees to use public transit and display bike route maps, local transit route maps and schedules, and other transportation information, such as OCTA's existing carpooling program in a prominent area accessible to employees.

iv. The Applicant/Developer shall organize an annual event on the project site promoting the use of transit, carpooling programs, and non-motorized methods of transportation by project residents, employees, and visitors. The City of Cypress Director of Community Development Department, or designee, shall be responsible for confirming that the event is held.

Implementation of both Mitigation Measure GHG-1 and the multi-part Mitigation Measure GHG-2 above would reduce GHG emissions. However, because the type and extent of the measures that would be feasible to implement would be dependent on the individual future tenants that occupy the project, the total amount of GHG reductions cannot be quantified at this time. For example, the ability of a business to affect employee and patron VMT would depend in part on the numbers of employees and patrons, where they live, and the availability of regional programs such as transit buses.

4.7.9 Level of Significance after Mitigation

All anticipated impacts related to GHG would be considered significant and unavoidable.

All anticipated impacts related to GHGs would be considered significant and unavoidable. However, it should be noted that the CalEEMod model likely overestimates the GHG emissions from vehicle trips associated with the proposed hotel and movie theater. The CalEEMod model uses trip lengths established in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition), which likely overestimates the trip lengths to and from the proposed hotel and movie theater, and therefore overestimates the project's GHG emissions. Once constructed, the movie theater will be the only movie theater in the City of Cypress. Currently, the closest movie theaters are located approximately 1.5 miles to the south of the project site in the City of Garden Grove (Starlight 4 Star Cinemas), approximately 4 miles to the southeast in the City of Garden Grove (Regal Garden Grove 16), approximately 4 miles to the northeast of the project site in the City of Buena Park (Krikorian

Buena Park Metroplex 18), and approximately 3.5 miles to the northwest of the project site in the City of Long Beach (Edwards Long Beach Stadium 26). In the existing condition, movie-going residents in the City of Cypress and surrounding communities are more likely to patronize one of these movie theaters based on their relatively close proximity. Because the project would add a movie theater in a community not currently served by a movie theater, it is reasonable to assume that many residents in the City of Cypress and surrounding communities would visit the movie theater on the project site rather than travel to one of the further movie theaters, resulting in reduced trip lengths.

The hotel on the project site would likely be geared toward business travelers associated with the Cypress Business Center located just east of the project site, generally focused around the intersection of Valley View Street and Katella Avenue. Furthermore, because guests of the hotel would likely only travel a short distance from the nearby Cypress Business Center, it is likely that the trip lengths associated with the hotel would be shorter than those estimated by the ITE.

Because the trip lengths are likely overestimated, the GHG emissions from trips associated with the movie theater and hotel are also likely overestimated. Regardless, to be conservative, the significance conclusion for impact related to GHG is significant and unavoidable.

4.7.10 Cumulative Impacts

Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in GHGs, and (b) global growth is continuing to contribute large amounts of GHGs across the world. Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming.

The analysis of impacts related to GHG emissions is inherently cumulative. The proposed project would have no conflict with applicable statewide and regional climate action measures. However, as discussed above, the project's operational-related GHG emissions would exceed the SCAQMD's numeric threshold and service population thresholds. Implementation of Mitigation Measures GHG-1 and GHG-2 would reduce operational emissions to the extent feasible. However, GHG emission impacts associated with the proposed project would be significant and unavoidable, and therefore the cumulative impact would also be significant and unavoidable.

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4.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes known and potential hazards and hazardous materials conditions at the Cypress City Center project (proposed project) site and in the surrounding area, related potentially significant adverse public health impacts anticipated as a result of the proposed project, and addresses the proposed impacts with consideration of local, State, and federal regulations and policies and provides recommended measures pursuant to California Environmental Quality Act (CEQA).

The hazards and hazardous materials analysis in this section is based on the following project-specific technical reports: the *Phase I Environmental Site Assessment* (2019b) and the *Phase II Limited Soil Investigation, Northwest Corner of Katella Avenue and Winners Circle, Cypress, California* (2019a), prepared by Roux Associates, Inc. (Roux Associates) in June 2019. The findings of these reports are summarized, and the complete reports are contained in Appendix F.

4.8.1 Methodology

To assess the impacts of the proposed project with respect to hazardous materials and wastes, Roux Associates performed a Phase I Environmental Site Assessment (ESA) and Phase II Limited Soil Investigation (LSI) of the 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 (project site). Roux Associates performed the 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 project site as defined in ASTM E1527-13.

The Phase I ESA used the following methodology:

4.8.1.1 Background Research and Data Review

Roux Associates performed a records review for the project site and surrounding properties in an effort to identify potential RECs in connection with the project site and assess potential concerns associated with the migration of hazardous substances to the project site from off-site sources. The records review included reasonably ascertainable historical data, which can be helpful in identifying the past uses of the project site and surrounding areas, as they may relate to the environmental condition of the project site.

4.8.1.2 Site Reconnaissance

On May 13, 2019, Roux Associates visually assessed the project 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.

The findings of the Phase I ESA identified a REC in connection to disturbed/imported soils along the southern boundary and in the northeastern corner of the project site. The subsequent Phase II Limited Soil Investigation used the following methodology:

4.8.1.3 Soil Sampling

Eight soil sampling locations were selected along the southern and eastern portions of the project site to address fill materials suspected at the project site. Discrete samples were collected from all borings at depths of 0.5 and 1.5 feet (ft) below ground surface (bgs).

4.8.1.4 Laboratory Analysis

A total of 16 soil samples were collected during this investigation, including eight "shallow" samples from 0.5 ft bgs, and eight "deeper" samples from 2 ft bgs. 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.

Hazardous materials and wastes, as identified in the ESA and LSI, were assessed with respect to significance within the context of Appendix G to the *State CEQA Guidelines*. The shallow soil samples collected from eight locations across the project site 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 for all constituents in the one sample analyzed. Based on the results of the Phase II LSI, the identified REC has been addressed, and no additional investigation of the project site is recommended.

4.8.2 Existing Environmental Setting

The project site is a relatively flat paved parking lot with existing light poles and various electrical utility boxes and lines, approximately 13 acres in size, with no physical street address. The project 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 to the north; Winners Circle the east, beyond which is Costco warehouse outlet and other retail development; and, Katella Avenue to the south, beyond which are commercial properties.

According to aerial photographs, topographic maps, and a City of Cypress (City) directory obtained from Environmental Data Resources, Inc. (EDR), the project site was undeveloped from at least 1896 through 1925. The project site appears to have been used for agricultural purposes in 1928 and the site was vacant from at least 1938 through 1947. The project site was improved with a parking lot before 1963, and it has been generally used for that purpose since that time.

4.8.3 Regulatory Setting

Hazards and hazardous materials are subject to numerous federal, State, and local laws and regulations intended to protect health, safety, and the environment. The U.S. Environmental Protection Agency (USEPA), California EPA (Cal/EPA), the California Department of Toxic Substance Control (DTSC), the Santa Ana Regional Water Quality Control Board (RWQCB), and the County of Orange are the primary agencies responsible for enforcing these regulations. Local regulatory agencies enforce many federal and State regulations through the Certified Unified Program Agency (CUPA) program.

4.8.3.1 Federal Regulations

Major federal laws and issue areas include the following statutes and regulations:

Occupational Safety and Health Administration (OSHA), Title 29 CFR. OSHA is the federal agency responsible for ensuring worker safety. These regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling.

EPA, Title 40 CFR 700–799 (Toxic Substances Control Act). The Toxic Substances Control Act regulates manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. It addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCB), asbestos-containing materials (ACM), and lead-based paint.

United States Department of Transportation (USDOT) Regulations, Title 49 CFR. U.S. DOT, in conjunction with the U.S. EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to safe storage and transportation of hazardous materials. The Code of Federal Regulations (CFR) 49, 171–180, regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials.

Federal Air Regulations, Part 77. The Federal Aviation Administration (FAA) is responsible for the review of construction activities that occur in the vicinity of airports. Its role in reviewing these activities is to ensure that new structures do not result in a hazard to navigation. The regulations in the Federal Air Regulations (14 CFR, Part 77) are designed to ensure that no obstructions in navigable air space are allowed to exist that would endanger the public. Federal Air Regulations Part 77 identifies the maximum height at which a structure would be considered an obstacle at any given point around an airport. The extent of the off-airport coverage that needs to be evaluated for tall structure impacts can extend miles from an airport facility. In addition, Federal Air Regulations Part 77 establishes standards for determining whether objects constructed near airports will be considered obstructions in navigable airspace, sets forth notice requirements of certain types of proposed construction or alterations, and provides for aeronautical studies to determine the potential impacts of a structure on the flight of aircraft through navigable airspace.

4.8.3.2 State Regulations

State Assembly Bill 2948. In response to the growing statewide concern of hazardous waste management, State Assembly Bill 2948 (Tanner 1986) enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each

plan is to assure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within its jurisdiction.

California Occupational Safety and Health Administration (Cal/OSHA) Regulations. Cal/OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA requires many entities to prepare injury and illness prevention plans and chemical hygiene plans, and provides specific regulations to limit exposure of construction workers to lead.

Cortese List Statute (California Government Code, §65962.5). This regulation requires the California Department of Toxic Substances Control to compile and maintain lists of potentially contaminated sites throughout the State, and includes the Hazardous Waste and Substances Sites List. The overall list is called the "Cortese" List.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code, §25249.5 et seq.). The Safe Drinking Water and Toxic Enforcement Act is similar to the federal Safe Drinking Water Act and Clean Water Act in that it regulates the discharge of contaminants to groundwater.

4.8.3.3 Local Regulations

Certified Unified Program Agency. Senate Bill 1082 provides for the designation of a CUPA that would be responsible for the permitting process and collection of fees. The CUPA would be responsible for implementing at the local level the Unified Program, which serves to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs:

- Hazardous Waste
- Hazardous Materials Business Plan
- California Accidental Release Prevention Program
- Underground Hazardous Materials Storage Tanks
- Aboveground Petroleum Storage Tanks / Spill Prevention Control & Countermeasure Plans
- Hazardous Waste Generator and On-Site Hazardous Waste Treatment (tiered permitting) Programs

In Orange County, the Environmental Health Division of the Orange County Health Care Agency is designated as the CUPA responsible for implementing the above-listed program elements. The laws and regulations that established these programs require that businesses that use or store certain quantities of hazardous materials submit a Hazardous Materials Business Emergency Plan (HMBEP) that describes the hazardous materials usage, storage, and disposal required by the CUPA.

As the CUPA, the Environmental Health Division of the Orange County Health Care Agency coordinates five programs regulating hazardous materials and hazardous wastes in Orange County, which include the following:

- **Orange County Health Agency – Environmental Health Division Hazardous Waste**
  - Underground Storage Tanks (UST)
  - Aboveground Storage Tanks (AST)

- **Orange County Fire Authority**
  - Hazardous Materials Disclosure (HMD)
  - Business Plan
  - California Accidental Release Program (CalARP)

4.8.4 Thresholds of Significance

The thresholds for hazards and hazardous materials impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist.* The proposed project may be deemed to have a significant impact with respect to hazards and hazardous materials if it would:

Threshold 4.8.1: **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Threshold 4.8.2: **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

Threshold 4.8.3: **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

Threshold 4.8.4: **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

Threshold 4.8.5: **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

Threshold 4.8.6: **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Threshold 4.8.7: **Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

4.8.5 Project Impacts

Threshold 4.8.1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact.

Construction. Construction of the proposed project would temporarily increase the regional transport, use, and disposal of construction-related hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). These materials are commonly used at construction sites, and the construction activities would be required to comply with applicable State and federal regulations for proper transport, use, storage, and disposal of excess hazardous materials and hazardous construction waste. In addition, Regulatory Compliance Measures HYD-1 and HYD-2 (refer to Section 4.9, Hydrology and Water Quality, of this EIR) require compliance with the waste discharge permit requirements to avoid potential impacts to water quality due to spills or runoff from hazardous materials used during construction. Therefore, with adherence to the regulatory standards included in Regulatory Compliance Measures HYD-1 and HYD-2, impacts related to the routine transport, use, or disposal of hazardous materials during construction would be less than significant.

Operation. Retail and restaurant uses included in the proposed project may include the use and disposal of typical cleaning products along with limited use of pesticide and herbicides for landscape maintenance. Trucks accessing the businesses on site would contain oil and gasoline, to power their engines, which could have the potential to result in minor releases of such substances through drips or leaks from truck loading areas. The proposed project's uses are not anticipated to be associated with major hazardous materials and would not create unusually high quantities of hazardous waste.

The Orange County Fire Authority (OCFA) Hazardous Material Division and the Orange County Environmental Health Department both identify types and amounts of waste generated in Orange County and establish programs for managing waste. The OCFA maintains a Hazardous Material Management Plan, which assures that adequate treatment and disposal capacity is available to manage the hazardous waste generated within the County and address issues related to the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products.

The proposed project would be reviewed by the OCFA for hazardous material use, safe handling, and storage of materials. Prior to the issuance of grading permits, conditions of approval would be applied to the proposed project by the OCFA to reduce hazardous material impacts and insure that any hazardous waste that is generated on site would be transported to an appropriate disposal facility by a licensed hauler in accordance with State and federal law. Therefore, due to the type and nature of the proposed project, its implementation would result in less than significant impacts related to the routine transport, use, or disposal of hazardous materials; no mitigation is required.

Threshold 4.8.2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Because no significant hazards would be created by uses associated with the proposed project, the potential for the proposed project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant; no mitigation is required.

Threshold 4.8.3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. Grace Christian School is located approximately 0.75 mile northwest of the project site, and the Cottonwood Christian Center preschool facility is located approximately 0.5 mile west of the project site. The proposed project's uses would not pose a significant threat of hazardous emissions or significant handling of hazardous materials or substances. Therefore, impacts on schools would be less than significant; no mitigation is required.

Threshold 4.8.4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant Impact. Database searches of the project site, including a GeoTracker search and a search of Superfund sites, determined that the project site is not included on a list of hazardous materials sites that could create a significant hazard to the public or the environment and is not a recorded Superfund site. On May 8, 2019, as part of the Phase I ESA, a government records database search was conducted to identify any properties of potential environmental concern within a 1-mile radius of the project site. The project site was not listed in any of the queried databases. The Phase I ESA identified several listings for off-site adjacent or nearby properties on databases potentially indicative of a contamination concern. However, the Phase I ESA concluded that these sites do not pose a potential hazard to the project site. In addition, soil sampling undertaken as part of the Phase II LSI did not identify elevated concentrations of metals, TPH, or VOCs in the soil at the project site. Therefore, impacts related to hazardous materials sites would remain less than significant; no mitigation is required.

Threshold 4.8.5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. The project site is located approximately 0.5 mile north of the Joint Forces Training Base (JFTB) Los Alamitos. The facilities at JFTB Los Alamitos include two runways and associated taxiways, ramp space, and hangars. According to the Orange County Airport Land Use Commission's 2016 *Airport Environs Land Use Plan* (AELUP) *for Joint Forces Training Base Los Alamitos*, the project site is located in the Federal Aviation Administration's (FAA) Part 77 Notification Area (Exhibit D1) and the AELUP height restriction zone for JFTB Los Alamitos (Exhibit

D2).[1] Height limitations are imposed on projects within a height restriction zone so that structures or trees (1) do not obstruct the airspace required for take off, flight, or landing of aircraft at an airport, or (2) are not otherwise hazardous to the landing or taking off of aircraft.

Implementation of the proposed project would not result in a safety hazard for people working in the project area because the project would comply with all appropriate FAA standards and requirements, including Regulatory Compliance Measure HAZ-1, which requires that the FAA be notified of any proposed structure(s) that would penetrate the 100 to 1 imaginary surface that surrounds the runway at JFTB Los Alamitos. The FAA would then be responsible for reviewing the height of the proposed structures and determining whether they pose a potential aviation hazard. With adherence to the regulatory standards provided in Regulatory Compliance Measure HAZ-1, implementation of the proposed project would result in less than significant impacts related to safety hazards for people working in the project area; no mitigation is required.

Threshold 4.8.6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The project site is not located along an emergency evacuation route.[2] Therefore, implementation of the proposed project would not interfere with the adopted emergency response plan and/or the emergency evacuation plan. No impact would occur; no mitigation is required.

Threshold 4.8.7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The project site is located within a fully urbanized area. There are no wildlands adjacent or in the vicinity of the project site, and the project site is not designated as a Fire Hazard Severity Zone on the Statewide CAL FIRE Map.[3] Therefore, there would be no risk of loss, injury, or death involving wildland fires. No impact would occur, and no mitigation is required.

4.8.6 Level of Significance Prior to Mitigation

Impacts resulting from implementation of the proposed project would be less than significant prior to mitigation; no mitigation is required related to hazardous materials and wastes.

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1 Orange County Airport Land Use Commission. 2016. *Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos*. Website: http://www.ocair.com/commissions/aluc/docs/JFTB-AELUP2016 ProposedFINAL.pdf (accessed December 29, 2019).

2 City of Cypress General Plan, Safety Element, Emergency Evacuation Routes map (Exhibit SAF-5), October 2, 2001.

3 California Department of Forestry and Fire Protection (CAL FIRE). 2007. Draft Fire Hazard Severity Zones in LRA. Website: https://osfm.fire.ca.gov/media/6737/fhszs_map30.pdf (accessed December 29, 2019).

4.8.7 Regulatory Compliance Measures and Mitigation Measures

4.8.7.1 Regulatory Compliance Measures

Regulatory Compliance Measure HAZ-1 **Federal Aviation Regulation Title 14 Part 77.** The Applicant/Developer shall notify the Federal Aviation Administration (FAA) of any proposed structure(s) that would penetrate the 100 to 1 imaginary surface that surrounds the runway at Joint Forces Training Base Los Alamitos at least 45 days prior to beginning construction.

4.8.7.2 Mitigation Measures

No mitigation measures are required.

4.8.8 Cumulative Impacts

The project vicinity is largely urbanized with residential, commercial, and industrial uses. As the area continues to develop, the addition of more development could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; therefore, cumulative development could result in potentially significant impacts regarding hazardous materials.

Projects considered part of the cumulative condition include Related Project Nos. 1, 2, 3, and 4. Related Project No. 1 is the approved retail/commercial project on a 33-acre site located west of the project site and includes 244 units of senior housing, 35,600 square feet (sf) of major retail use, and 11,376 sf of restaurant uses. Related Project No. 2 is also located west of the project site, and includes a 129-unit assisted living facility and 13,700 sf of retail use. Related Project No. 3, to the north of the project site, includes 67 apartments. Related Project No. 4, to the west of the project site, is a 9-acre, 6-field soccer facility.

For the proposed project, impacts due to hazardous materials would be less than significant. Although some of the cumulative projects listed also have potential impacts associated with hazardous materials, the environmental concerns associated with hazardous materials are site specific. Each project is required to address any issues related to hazardous material or wastes. Federal, state, and local regulations require mitigation to protect against site contamination by hazardous materials. Therefore, there would be no cumulative hazardous materials impacts.

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4.9 HYDROLOGY AND WATER QUALITY

This section evaluates the potential impacts to hydrology and water quality conditions from implementation of the Cypress City Center Project (proposed project). The analysis in this section is based in part on the *Water Quality Management Plan* (Kimley-Horn 2019) (Appendix G), the *Preliminary Hydrology and Hydraulics Study* (Kimley-Horn 2020) (Appendix G), and the *Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California* (Geotechnical Assessment) (NMG Geotechnical, Inc., June 13, 2019) (Appendix E) that were prepared for the proposed project and are included in this Environmental Impact Report (EIR).

4.9.1 Existing Environmental Setting

4.9.1.1 Watersheds

The project site is located within the Coyote Creek Subwatershed of the larger San Gabriel River Watershed. The San Gabriel River Watershed covers 689 square miles (sq mi), primarily in eastern Los Angeles County with a smaller portion in northwestern Orange County (Los Angeles RWQCB 2019). Coyote Creek drains a watershed of 165 sq mi, 85.5 sq mi of which lie in north Orange County, with the remainder in Los Angeles County. The main tributary of the Coyote Creek Watershed is Coyote Creek, which flows from Riverside County and empties into the San Gabriel River just above its tidal prism (Orange County Public Works [OCPW] 2019a). The San Gabriel River flows into the Pacific Ocean west of Seal Beach.

The project site is located within the jurisdictional boundary of the Santa Ana Regional Water Quality Control Board (RWQCB). For planning purposes, the Santa Ana RWQCB uses a watershed classification system that divides surface waters into hydrologic units (HUs), hydrologic areas (HA), and hydrologic subareas (HSA). As designated by the RWQCB, the project site is located within the Los Angeles-San Gabriel River HU, the Anaheim HA Split, and the Anaheim HSA Split (Santa Ana RWQCB 1995, updated 2019).

4.9.1.2 Drainage

In the existing condition, stormwater runoff on the on-site parking lot flows in an east/west orientation to two separate concrete ribbon gutters that transverse the project site and convey flow from north to south. In addition to on-site stormwater runoff, off-site stormwater runoff from 11.8 acres north of the project site is also tributary to the ribbon gutters. Each gutter conveys stormwater runoff to a separate existing catch basin that connects to an existing 33-inch stormdrain, that runs on the north edge of Katella Avenue from east to west. The 33-inch stormdrain increases to a 39-inch then to a 48-inch stormdrain just downstream of the project site. Stormwater runoff that exceeds the capacity of catch basin inlets ponds onsite to a depth of 12 to 18 inches before overflowing and discharging overland to the existing on-site driveway and into the Katella Avenue curb and gutter. The Katella Avenue stormdrain conveys stormwater runoff to the west, where it connects to the Los Alamitos Channel. Los Alamitos Channel flows southwest where it discharges into the San Gabriel River just north of its mouth, and then into the Pacific Ocean.

An existing 24-inch storm drain that runs north to south is located in Winners Circle between Katella Avenue and the end of the cul-de-sac. This stormdrain conveys stormwater runoff from Winners

Circle to the Katella Avenue stormdrain. The approved City stormdrain plan for the Winners Circle stormdrain included an extension to the north, past the end of the cul-de-sac, and then west across the existing parking lot just north of the project site. The stormdrain extension was proposed to accommodate restricted flows of 0.3 cubic feet per second (cfs) per acre (cfs/acre) from the property north of the project site. However, only the portion of the stormdrain in Winners Circle has been constructed.

4.9.1.3 Surface Water Quality

As discussed in greater detail in Section 4.9.3, Reach 1 of the San Gabriel River (from the estuary to Firestone Boulevard) is impaired for pH (percentage of hydrogen) and temperature. The San Gabriel River Estuary is impaired for nickel, dissolved oxygen, copper, dioxin, and indicator bacteria.

4.9.1.4 Groundwater

According to the California Department of Water Resources (DWR), the project site is located within the Coastal Plain of the Orange County Groundwater Basin, which underlies a coastal alluvial plain in the northwestern portion of Orange County (County). The Coastal Plain of Orange County groundwater basin underlies a coastal alluvial plain in northwestern Orange County. The basin is bound on the northwest and the north by the Los Angeles-Orange County line, on the northeast by the Whittier Fault Zone and consolidated rocks of the Puente Hills and Chino Hills, on the east by consolidated rocks of the Santa Ana Mountains, on the south by consolidated rocks of the Laguna Hills and San Joaquin Hills, and on the southwest by the Pacific Ocean. Groundwater recharge to the basin is derived from percolation of Santa Ana River flow, infiltration of precipitation, and injection into wells (DWR 2016).

For management purposes, groundwater basins are designated in the Santa Ana RWQCB's Water Quality Control Plan (Basin Plan) as Groundwater Management Zones. The project site is within the Orange County Groundwater Management Zone in the Lower Santa Ana River Basin. The Orange County Groundwater Management Zone is bounded to the north by the Chino Hills and Santa Ana Mountains, to the east by State Route 55 (SR-55) and the Irvine Groundwater Management Zone, to the south by the Pacific Ocean, and to the west by a low topographic divide approximated by the Orange County/Los Angeles County line (Santa Ana RWQCB 1995; updated 2019).

According to the Geotechnical Assessment (included in Appendix E to this Draft EIR), groundwater at the project site is very shallow, ranging from approximately 4.5 to 6 feet (ft) below ground surface (bgs) as measured on April 16, 2019, in two groundwater monitoring wells located on the project site. In addition, groundwater was measured at approximately 6 ft bgs in an open trench at a construction site on the southwest corner of Katella Avenue and Winners Circle on April 16, 2019. This is consistent with groundwater levels reported at several other sites in the vicinity of the project site, which has been measured in the range of 1 to 7 ft bgs.

4.9.1.5 Groundwater Quality

Groundwater in the Coastal Plain of the Orange County Groundwater Basin is primarily sodium-calcium bicarbonate based. In general, total dissolved solids (TDS) content in groundwater ranges from 232 milligrams per liter (mg/L) to 661 mg/L, with an average of 475 mg/L. Groundwater

impairments include salinity (from seawater intrusion), colored water (from natural organic materials), high nitrates, and methyl tertiary butyl ether (MTBE) (DWR 2004).

4.9.1.6 Flooding

According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) No. 06059C0116J (December 3, 2009), the project site is located within Zone X, which comprises areas of 0.2 percent annual chance flood (500-year flood). This means that there is a very low likelihood of flooding within the project site.

According to the Safety Element of the City of Cypress (City) General Plan, the project site is located within the inundation zone of the Prado Dam and the Carbon Canyon Dam. There are no open bodies of water in the vicinity of the project site and the project is therefore not located within an inundation zone of a seiche. The project site is located more than 5 miles to the northeast of the Pacific Ocean and is not located within the tsunami inundation zone. The levee inundation zone of Coyote Creek/Carbon Creek is located to the northwest of the project site; however, the project site is not located within this inundation area.

4.9.1 Regulatory Setting

4.9.1.1 Federal Regulations

Clean Water Act. In 1972, the Federal Water Pollution Control Act (now referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended to require that the United States Environmental Protection Agency (USEPA) establish regulations for the permitting of stormwater discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the USEPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the USEPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding

applicable water quality standards (often with a "factor of safety" included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

Direct discharges of pollutants into waters of the United States are not allowed except in accordance with the NPDES program established in Section 402 of the CWA.

Clean Water Act, Section 303, List of Impaired Water Bodies. The State Water Resources Control Board (SWRCB), in compliance with Section 303(d) of the CWA, prepared a 2014/2016 list of impaired water bodies in California. The SWRCB approved the 2014/2016 California Integrated Report (CWA Section 303(d) List/305(b) Report) on October 3, 2017. On April 6, 2018, the USEPA approved the 2014/2016 California 303(d) List of Water Quality Limited Segments (303[d] list) The 303(d) list includes a priority schedule for the development of TMDL implementation for each contaminant impacting the water body. Reach 1 of the San Gabriel River (from the estuary to Firestone Boulevard) is impaired for pH and temperature. The San Gabriel River Estuary is impaired for nickel, dissolved oxygen, copper, dioxin, and indicator bacteria. There are no impairments listed for Los Alamitos Channel on the 303(d) list.

The Santa Ana RWQCB has not established any TMDLs that are applicable to the proposed project. It should be noted that the San Gabriel River downstream of the project site is within the jurisdiction of the Los Angeles RWQCB. TMDLs for metals and selenium and indictor bacteria have been established for the San Gabriel River and tributaries by the Los Angeles RWQCB. However, because the San Gabriel River is within the jurisdiction of the Los Angeles RWQCB, these TMDLs are not applicable to the proposed project.

National Flood Insurance Act. Congress acted to reduce the costs of disaster relief by passing the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief efforts by restricting development in floodplains. FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in a floodplain. FEMA issues FIRMs of communities participating in the NFIP. These maps delineate flood hazard zones in the community. The City of Cypress manages local stormdrain facilities, and the Orange County Flood Control District (OCFCD) is responsible for regional flood control planning within Orange County.

4.9.1.2 State Regulations

Porter-Cologne Water Quality Control Act of 1970. The federal CWA places the primary responsibility for the control of water pollution and planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and the nine RWQCBs broad powers to protect water quality and is the primary vehicle for the implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants

the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface water and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The City, including the project site, is within the jurisdictional boundaries of the Santa Ana RWQCB (Region 8).

California Toxics Rule. As stated previously, because California had not established a complete list of acceptable water quality criteria for toxic pollutants, USEPA Region IX established numeric water quality criteria for toxic constituents in the form of the CTR. The CTR provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated for human health or aquatic life uses. The CTR is often used by the RWQCBs when establishing water quality objectives and TMDLs. Although the CTR criteria do not apply directly to discharges of stormwater runoff, they are utilized as benchmarks for toxics in urban runoff. The CTR is used as a benchmark to evaluate the potential ecological impacts of stormwater runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain water bodies. Acute criteria provide benchmarks for the highest permissible concentration below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., 4 days or more) without deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than 4 days) and provide a more appropriate benchmark for comparison for stormwater flows.

CTR criteria apply to the receiving water body and are calculated based on the probable hardness values of the receiving waters. At higher hardness values for receiving waters, certain constituents (including copper, lead, and zinc) are more likely to be complexed (bound with) components in the water column. This in turn reduces the bioavailability and resulting potential toxicity of these metals.

General Construction Activity Storm Water Permit. The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities,* Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ (Construction General Permit), adopted by the SWRCB, regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least 1 acre of total land area. The Construction General Permit authorizes the discharge of stormwater to surface waters from construction activities.

The Construction General Permit requires that all developers of land where construction activities will occur over more than 1 acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the General Permit;

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States;

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) that will reduce pollution in stormwater discharges to the Best Available Technology/Economically Achievable/Best Conventional Pollutant Control Technology standards;

- Perform inspections and maintenance of all BMPs; and

- Conduct stormwater sampling, if required based on risk level.

To obtain coverage under the Construction General Permit, a project applicant must electronically file all permit registration documents with the SWRCB prior to the start of construction. Permit registration documents must include a:

- Notice of Intent (NOI),
- Risk Assessment,
- Site map,
- SWPPP,
- Annual fee, and
- Signed certification statement.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials. The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

Sustainable Groundwater Management Act. The Sustainable Groundwater Management Act (SGMA) of 2014 is a comprehensive three-bill package that Governor Jerry Brown signed into California state law in September 2014. The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for State intervention if necessary to protect the resource. The plan is intended to ensure a reliable groundwater supply for California for years to come.

The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdrafts of groundwater basins. The SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs) that are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins.

4.9.1.3 Regional Regulations

Water Quality Control Plans (Basin Plans). The Santa Ana RWQCB has adopted a Basin Plan for their region of responsibility that delineates water resource area boundaries based on hydrological

features. For the purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the surface waters and groundwater management zones described in the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established, and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. There are no beneficial uses listed in the Basin Plan for the downstream surface receiving waters for the project site. Beneficial uses of the Orange Groundwater Management Zone include municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC).

Basin Plans also establish implementation programs to achieve water quality objectives to protect beneficial uses and require monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Basin Plans have established narrative and numeric water quality objectives for inland surface streams and groundwater. If water quality objectives are exceeded, the RWQCBs can use their regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. Relevant surface water quality objectives for all inland surface waters and groundwater under the jurisdiction of the Santa Ana RWQCB that are applicable to the receiving waters for the project site are shown in Tables 4.9.A and 4.9.B, respectively.

In addition, the site-specific water quality objectives for the Irvine Groundwater Management Zone are:

- **Total Dissolved Solids:** 580 mg/L
- **Nitrate as Nitrogen:** 3.4 mg/L

There are no site-specific water quality objectives listed in the Basin Plan for the surface receiving waters for the project site.

Orange County National Pollutant Discharge Elimination System Permit. The City is a Permittee of the *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 Areawide Urban Storm Water Runoff Orange County* (North Orange County MS4 Permit), Order R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062. The North Orange County MS4 Permit regulates discharges into the MS4 system in the cities and county areas within Orange County that are in the Santa Ana Region. As discussed further below, the North Orange County MS4 Permit requires preparation of a Water Quality Management Plan (WQMP) and implementation of post-construction BMPs for new development and significant redevelopment projects that qualify as Priority Development Projects.

Table 4.9.A: Surface Water Quality Objectives for Inland Surface Waters

Constituent	Concentration
Algae	Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.
Boron	Shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.
Chlorine (residual)	Chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish, or other surface water resources used for human consumption shall not be impaired.
Floatables	Waste discharges shall not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Metals	Varies based on hardness.
Oil and Grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that result in a visible film or in coating objects in the water or which cause a nuisance or adversely affect beneficial uses.
Oxygen (dissolved)	Waste discharges shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95th percentile concentration or fall below 75% of saturation within a 30-day period.
pH	Shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.
Solids (suspended and settleable)	Shall not cause nuisance or adversely affect beneficial uses as a result of water quality factors.
Sulfides	Shall not increase as a result of controllable water quality factors.
Surfactants	Waste discharges shall not contain concentrations of surfactants that result in foam in the course of flow or use of the receiving water or that adversely affect aquatic life.
Taste and Odor	Shall not contain taste- or odor-producing substances at concentrations that cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish, or other regional inland surface water resources used for human consumption shall not be impaired.
Toxic Substances	Shall not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect beneficial uses.
Turbidity	Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%. Where natural turbidity is between 50 NTU and 100 NTU, increases shall not exceed 10 NTU. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10%.

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995, updated June 2019).
mg/L = milligrams per liter
NTU = nephelometric turbidity units
RWQCB = Regional Water Quality Control Board

Table 4.9.B: Groundwater Quality Objectives for Groundwater Basins

Constituent	Concentration
Arsenic	Waters with MUN Beneficial Use Designation: Shall not exceed 0.05 mg/L as a result of controllable water quality factors.
Bacteria, Coliform	Waters with MUN Beneficial Use Designation: Total coliform numbers shall not exceed 2.2 organisms/100 mL median over any 7-day period as a result of controllable water quality factors.
Barium	Waters with MUN Beneficial Use Designation: Shall not exceed 1.0 mg/L as a result of controllable water quality factors.
Boron	Shall not exceed 0.75 mg/L as a result of controllable water quality factors.
Chloride	Waters with MUN Beneficial Use Designation: Shall not exceed 500 mg/L as a result of controllable factors.
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses.
Cyanide	Waters with MUN Beneficial Use Designation: Shall not exceed 0.2 mg/L as a result of controllable water quality factors.
Fluoride	Waters with MUN Beneficial Use Designation: Shall not exceed 1.0 mg/L as a result of controllable water quality factors.
Hardness	Waters with MUN Beneficial Use Designation: Shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.
Metals	Waters with MUN Beneficial Use Designation: Shall not exceed the following: Cadmium 0.01 mg/L; Chromium 0.05 mg/L; Cobalt 0.2 mg/L; Copper 1.0 mg/L; Iron 0.3 mg/L; Lead 0.05 mg/L; Manganese 0.05 mg/L; Mercury 0.002 mg/L; Selenium 0.01 mg/L; and Silver 0.05 mg/L, as a result of controllable water quality factors.
Methylene Blue-Activated Substances	Waters with MUN Beneficial Use Designation: Shall not exceed 0.05 mg/L as a result of controllable water quality factors.
Oil and Grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that cause a nuisance or adversely affect beneficial uses.
pH	Shall not be raised above 9 or depressed below 6 as a result of controllable water quality factors.
Radioactivity	Waters with MUN Beneficial Use Designation: Shall not exceed the California Code of Regulations, Title 22, standards of 5 pCi/L for combined radium-226 and radium-228, 15 pCi/L for gross alpha particle activity, 20,000 pCi/L for tritium, 8 pCi/L for strontium-90, 50 pCi/L for gross beta particle activity, and 20 pCi/L for uranium.
Sodium	Waters with AGR Beneficial Use Designation: Shall not exceed a sodium absorption rate of 9.
	Waters with MUN Beneficial Use Designation: Shall not exceed 180 mg/L as a result of controllable water quality factors.
Sulfate	Waters with MUN Beneficial Use Designation: Shall not exceed 500 mg/L as a result of controllable water quality factors.
Taste and Odor	Shall not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses.
Toxic Substances	All waters shall be maintained free of substances in concentrations that are toxic or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Source: *Water Quality Control Plan, Santa Ana River Basin* (Santa Ana RWQCB 1995, updated June 2019).
AGR = agricultural supply
mg/L = milligrams per liter
mL = milliliter
MUN = municipal supply
pCi/L = picocuries per liter
pH = percentage of hydrogen

The proposed project is considered a Priority Development Project because it is a redevelopment project that includes the addition or replacement of 5,000 square feet (sf) or more of impervious surface area.

Drainage Area Management Program. The Drainage Area Management Plan (DAMP) (2003) was created by the County of Orange, the OCFCD, and incorporated cities (permittees), and includes specific water pollutant requirements of the North Orange County Stormwater Program. The DAMP is the principal guidance and compliance document for the countywide implementation of the Stormwater Program. It is the foundation for the permittees to implement model programs designed to prevent pollutants from entering receiving waters to the maximum extent practicable. Section 7 of the DAMP discusses issues relating to new developments and significant redevelopments.

Local Implementation Plan. The City Local Implementation Plan (LIP) is the principal guidance and compliance document specific to the City's jurisdiction for compliance with the requirements of the North Orange County MS4 Permit. The LIP provides the description and details of the City's water quality program implementation activities. The LIP is designed to work in conjunction with the Orange County DAMP. It should be noted that the Cypress LIP takes precedence over DAMP requirements.

Model Water Quality Management Plan. The *Model Water Quality Management Plan* (County of Orange 2011) was developed to aid Orange County, the OCFCD, the cities in Orange County (permittees), and developers in Orange County to address post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects that qualify as Priority Development Projects. The proposed project is categorized as a redevelopment project that would add or replace more than 5,000 sf of imperious surface area and, thus, is considered a Priority Development Project.

Priority Development Projects are required to develop a Project WQMP to minimize adverse impacts of development to on-site hydrology, volume, and rate of runoff, and pollutants of concern. Project WQMPs include project-specific BMPs to minimize these effects (e.g., Low Impact Development [LID], site design measures, source control BMPs). The requirements identified in the project WQMPs are subject to Section 7 of the DAMP.

Technical Guidance Document. The County of Orange developed the *Technical Guidance Document (TGD) for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs)* (Technical Guidance Document) (County of Orange 2013) in cooperation with the incorporated cities of Orange County to aid agency staff and project proponents with addressing post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects in Orange County. The Technical Guidance Document serves as the technical guidance to complete the project WQMP.

Orange County Construction Runoff Guidance Manual. The *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* (County of Orange 2012) presents the requirements related to construction from the DAMP. The goal of this Guidance Manual is to control pollutant

discharges from construction sites. As such, it helps applicants with building and grading permits to understand the water quality requirements during the construction phase of development projects.

Groundwater Dewatering Permit. The Santa Ana RWQCB requires a permit for discharging wastes to surface waters from activities involving groundwater extraction. The *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality (*Order No. R8-2009-0003, NPDES No. CAG998001) covers general waste discharge requirements for discharges to surface waters that pose an insignificant (*de minimis*) threat to water quality within the Santa Ana Region. Under this order, permittees are required to monitor their discharges of groundwater extraction waste from construction to ensure that effluent limitations for constituents are not exceeded.

4.9.1.4 Local Regulations

Cypress Municipal Code. Chapter 13, Article IV, Cypress Water Quality, of the City Municipal Code regulates stormwater and surface runoff water quality. The Municipal Code requires compliance with the Drainage Area Management Plan (DAMP) and Local Implementation Plan (LIP), including preparation of WQMPs for priority development project. Prior to issuance of a grading permit, building permit, and/or safety permit for any new development or significant redevelopment, the property owner is required to submit to and obtain the approval of the WQMP by the City.

4.9.2 Methodology

Project impacts to hydrology and water quality are evaluated based on the proposed project's adherence to local, regional, State, and federal standards; the proposed land uses and project design; changes in pre- and post-project stormwater flows; and proposed BMPs for control of surface runoff and reduction of pollutants in stormwater runoff.

4.9.3 Thresholds of Significance

The thresholds for hydrology and water quality impacts used in this analysis are consistent with the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to hydrology and water quality if it would:

Threshold 4.9.1: **Violate any water quality standards or waste discharge requirements?**

Threshold 4.9.2: **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

Threshold 4.9.3: **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

Threshold 4.9.4: **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

Threshold 4.9.5: **Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

Threshold 4.9.6: **Otherwise substantially degrade water quality?**

Threshold 4.9.7: **Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

Threshold 4.9.8: **Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

Threshold 4.9.9: **Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

Threshold 4.9.10: **Inundation by seiche, tsunami, or mudflow?**

Threshold 4.9.11: **Result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash).**

Threshold 4.9.12: **Result in significant alteration of receiving water quality during or following construction?**

Threshold 4.9.13: **Could the proposed project result in increased erosion downstream?**

Threshold 4.9.14: **Result in increased impervious surfaces and associated increased runoff?**

Threshold 4.9.15: **Create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?**

Threshold 4.9.16: **Be tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?**

Threshold 4.9.17: **Be tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?**

Threshold 4.9.18: Have a potentially significant environmental impact on surface water quality to either marine, fresh, or wetland waters?

Threshold 4.9.19: Have a potentially significant adverse impact on groundwater quality?

Threshold 4.9.20: Cause or contribute to an exceeded applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

Threshold 4.9.21: Impact aquatic, wetland, or riparian habitat?

Threshold 4.9.22: Would the project include new or retrofitted stormwater treatment control Best Management Practices (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g., increased vectors or odors)?

4.9.4 Project Impacts

Threshold 4.9.1: Would the project violate any water quality standards or waste discharge requirements?

Or

Threshold 4.9.6: Would the project otherwise substantially degrade water quality?

Or

Threshold 4.9.11: Would the project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash).

Or

Threshold 4.9.12: Would the project result in significant alteration of receiving water quality during or following construction?

Or

Threshold 4.9.18: Would the project have a potentially significant environmental impact on surface water quality to either marine, fresh, or wetland waters?

Less Than Significant Impact.

Construction. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality.

During construction, 13.33 acres of soil would be disturbed. During soil-disturbing construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Sediment from increased soil erosion and chemicals from spills and leaks have the potential to be discharged to downstream receiving waters during storm events, which can affect water quality and impair beneficial uses.

Because construction of the proposed project would disturb greater than 1 acre of soil, the proposed project is subject to the requirements of the Construction General Permit, as specified in Regulatory Compliance Measure HYD-1. As also specified in Regulatory Compliance Measure HYD-1, a SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction, in compliance with the requirements of the Construction General Permit. The SWPPP would detail the BMPs to be implemented during construction. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site, and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Compliance with the requirements of the Construction General Permit, including incorporation of construction BMPs to target and reduce pollutants of concern in stormwater runoff, would ensure that construction impacts related to waste discharge requirements, water quality standards, degradation of water quality, increased pollutant discharge, and alteration of receiving water quality would be less than significant.

According to the Geotechnical Assessment prepared for the project, groundwater at the project site is very shallow, ranging from approximately 4.5 to 6 ft bgs. Because of the presence of very shallow groundwater, it is likely that groundwater dewatering would be required during excavation activities. Groundwater may contain high levels of total dissolved solids, nitrate, salinity, or other constituents, or high or low pH levels that could be introduced to surface waters when dewatered groundwater is discharged to receiving waters. Groundwater dewatering activities during excavation would be conducted in accordance with the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality (*Order No. R8-2009-0003, NPDES No. CAG998001) as specified in Regulatory Compliance Measure HYD-2. This permit requires testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to release to the stormdrain system. As a result, groundwater dewatering would not introduce pollutants to receiving waters at levels that would violate water quality standards or waste discharge requirements, degrade water quality, increase pollutant discharge, or alter the quality of the receiving water. Impacts to surface water quality from groundwater dewatering would be less than significant.

Operation. Expected pollutants of concern from long-term operation of the proposed project include suspended solids/sediment, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, and trash and debris. According to the *Water Quality Management Plan* prepared for the project, potential sources of these pollutants include the following:

- **Suspended Solids/Sediment:** Landscaping
- **Nutrients:** Landscaping
- **Heavy Metals and Toxic Organic Compounds:** Parking lots
- **Pathogens (Bacteria/Virus):** Parking lots, food uses, pet waste
- **Pesticides:** Landscaping
- **Oil and Grease:** Parking lots
- **Toxic Organic Compounds:** Parking lots and commercial uses
- **Trash and Debris:** Landscaping activities, human activities, food wastes

The project would be required to comply with the requirements of the North Orange County MS4 Permit and associated guidance documents. The North Orange County MS4 Permit requires that a WQMP be prepared for priority new development and redevelopment projects. WQMPs specify the Source Control, Low Impact Development (LID), and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in stormwater runoff. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in stormwater runoff prior to releasing it to receiving waters.

The *Water Quality Management Plan* prepared for the project specifies the Source Control and LID BMPs proposed for the project (no Treatment Control BMPs are proposed). The proposed BMPs would improve water quality compared to the existing parking lot, which is currently untreated. The BMPs specified in the *Water Quality Management Plan* would be implemented and maintained, as specified in Regulatory Compliance Measure HYD-3. The proposed project BMPs are detailed below.

Proposed Non-Structural Source Control BMPs include education for property owners, tenants and occupants; activity restrictions; common area landscape management; BMP maintenance; spill contingency plan, uniform fire code implementation, common area litter control; employee training; common area catch basin inspections; and street sweeping public streets and parking lots. Proposed Structural Source Control BMPs include stormdrain system stenciling and signage; trash and waste storage areas; use of efficient irrigation systems and landscape design, water conservation, smart controllers, and source control; energy dissipation and protection of slopes and channels; and hillside landscaping (along the Katella Avenue roadway embankment). Please refer to the *Water Quality Management Plan* included in Appendix G for additional details of the proposed Non-Structural Source Control BMPs and Structural Source Control BMPs.

Proposed LID BMPs include underground detention and biotreatment BMPs. These BMPs would be supplemented with a hydrodynamic separator for trash and debris removal. The hydrodynamic separator is proposed for BMP maintenance benefits and provides stormwater pre-treatment. Stormwater would be conveyed via on-site stormdrain facilities to the hydrodynamic separator and then to the underground detention system. A stormdrain pump would drain the detention system and control stormwater flow into the biotreatment BMP (a proprietary Modular Wetland biofiltration system) before release into the stormdrain system in Katella Avenue.

The proposed BMPs would target and reduce pollutants of concern from runoff from the project site in compliance with the North Orange County MS4 Permit requirements. Compliance with the requirements of the North Orange County MS4 Permit, including incorporation of operational BMPs to target pollutants of concern (as specified in Regulatory Compliance Measure HYD-3), would ensure that water quality impacts, degradation of water quality, increased pollutant discharge, and alteration of receiving water quality during project operation would be less than significant.

Threshold 4.9.2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. According to the Geotechnical Assessment prepared for the project, groundwater at the project site is very shallow, ranging from approximately 4.5 to 6 ft bgs. Because of the presence of very shallow groundwater, it is likely that groundwater dewatering would be required during excavation activities. However, groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial. In addition, any volume of water removed during groundwater dewatering would be minimal compared to the size of the Coastal Plain of the Orange County Groundwater Basin, which has a surface area of 350 sq mi and a storage capacity of 38,000,000 acre-feet (DWR 2004). Construction and operation of the proposed project would not involve direct groundwater extraction. Additionally, the project would not substantially change infiltration because the site is currently primarily (90 percent) impervious surface areas and on-sites soils have a low infiltration potential (on-site soils are Hydrologic Soil Ground D which have a minimal infiltration rate when thoroughly wetted). Increased water use would not substantially affect groundwater supplies, because the groundwater basin has been sustainably managed by Orange County Water District (OCWD) over the last 10 years and will continue to be sustainably managed (OCWD 2017). Therefore, construction and operational impacts related to a decrease in groundwater supplies or interference with groundwater recharge would be less than significant, and no mitigation is required.

Threshold 4.9.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Or

Threshold 4.9.13: Could the proposed project result in increased erosion downstream?

Less Than Significant Impact.

Construction. During project construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate.

Project construction would not alter the course of a stream or river. As discussed above, the Construction General Permit requires preparation of a SWPPP (Regulatory Compliance Measure HYD-1). The SWPPP would detail Erosion Control and Sediment Control BMPs to be implemented during project construction to minimize erosion and retain sediment on site. With compliance with the requirements of the Construction General Permit and with implementation of the construction BMPs, construction impacts related to on-site, off-site, or downstream erosion or siltation would be less than significant, and no mitigation is required.

Operation. According to the *Water Quality Management Plan* prepared for the project, the project would not change the impervious surface area on site (the site would be 12 acres of impervious surface area in the existing and proposed condition). In the proposed condition, 12 acres of the project site would be impervious surface area and not prone to on-site erosion or siltation because no soil would be included in these areas. The remaining acreage of the approximately 13-acre project site would consist of pervious surface area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. Therefore, on-site erosion and siltation impacts would be minimal.

Increases in stormwater runoff can lead to downstream erosion in receiving waters. However, the proposed project would not increase impervious area on the project site and would therefore not result in a net increase in stormwater runoff. An on-site detention system and pump also restricts runoff from the proposed site to 0.3 cfs/acre, a substantial reduction from the existing condition. Additionally, according to the *Water Quality Management Plan* (2019) and the *Preliminary Hydrology and Hydraulics Study* (2020) prepared for the project, downstream receiving waters are not susceptible to hydromodification.[1] Therefore, the proposed project would not increase downstream erosion or siltation impacts. For these reasons, operational impacts related to substantial on-site, off-site, or downstream erosion or siltation would be less than significant, and no mitigation is required.

Threshold 4.9.4: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Or

Threshold 4.9.15: Would the project create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?

Less than Significant Impact.

Construction. As discussed above, project construction would comply with the requirements of the Construction General Permit and would include the preparation and implementation of a SWPPP.

[1] Hydromodification is the alteration of the hydrologic characteristics of water bodies. Increased stream flows and changes in sediment transport caused by increased impervious areas from urbanization or other land use changes can result in increased stream flows, erosion, and changes in sediment transport.

The SWPPP would include construction BMPs to control and direct on-site surface runoff and would include detention facilities, if required to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. With implementation of BMPs, construction impacts related to a substantial increase in the rate or amount of surface runoff, flow, and volume that would result in flooding would be less than significant, and no mitigation is required.

Operation. In the existing condition, stormwater runoff on the parking lot flows in an east/west orientation to two separate concrete ribbon gutters. The ribbon gutters convey stormwater runoff south to catch basins that connects to the existing stormdrain system that varies in size from 33 inches to 39 inches in Katella Avenue. The proposed project would alter the on-site drainage patterns; however, stormwater runoff on the project site would still ultimately be conveyed to the Katella Avenue stormdrain system. In the proposed condition, stormwater would flow away from the proposed buildings, into one of the several low points on the project site where it would be conveyed to the underground detention system via a proposed on-site stormdrain system. Stormwater runoff would then be discharged to the Katella Avenue stormdrain system via a new stormdrain connection. The proposed on-site stormdrain system would be adequately sized to accommodate stormwater runoff so that on-site flooding would not occur.

According to the *Preliminary Hydrology and Hydraulics Study* (2020) prepared for the project, the downstream stormdrain system is at-capacity. As a result, the City restricts peak discharges from the project site to 0.3 cfs/acre (or 4.0 cfs for the project site). As demonstrated by the hydraulic modeling conducted as part of the *Preliminary Hydrology and Hydraulics Study* (2020), the detention system would be designed to attenuate the 100-year storm event peak flow difference between the stormwater flow generated on the project site (49.8 cfs) and the allowable discharge flow of 4.0 cfs. A stormdrain pump would drain the detention system to meet the 0.3 cfs/acre runoff restriction by limiting the pump discharge to 4.0 cfs.

In addition to the high-flow detention system described above, a low-flow detention system would be installed to capture and treat the “first flush” storm event. A bifurcation manhole would be placed upstream of the first flush detention system and divert the first flush volume into a separate detention system. This system would be pumped separately and the runoff would slowly discharge through a manufactured bioretention system over a 48-hour period. The outlet pipe from the biofiltration system would connect separately to the existing 48-inch Katella Avenue storm drain. Because the proposed on-site detention system would convey flow to the existing Katella Avenue stormdrain and would be adequately sized and designed to reduce flow to the 0.3 cfs/acre runoff restriction, impacts related to off-site flooding would be less than significant. No mitigation is required.

In the existing condition, off-site stormwater runoff from 11.8 acres north of the project site is also tributary to the on-site ribbon gutters, across the project site, and into the existing storm drain in Katella Avenue. This off-site flow is approximately 34.96 cfs during a 100-year storm event. In the proposed condition, a portion of this off-site flow would be captured by extending the existing 18-inch storm drain at the end of Winners Circle. As discussed in Section 4.9.2, above, the approved stormdrain plan for the Winners Circle stormdrain included an extension to the north, past the end of the cul-de-sac, and then west across the existing parking lot just north of the project site.

However, this stormdrain extension was never constructed. The proposed project plans to construct this extension, per the approved plans. Specifically, off-site stormwater flow would be captured via two proposed catch basins along the northern property line of the project site and routed east through a proposed 18-inch storm drain, and into the existing 18-inch storm drain at the end of Winners Circle. A proposed curb and gutter and an approximately 2 ft high berm installed north of the project site's property line would block off-site flow from entering the project site. Two scenarios, described below, are proposed to convey off-site runoff that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue.

In Scenario 1, flow that exceeds the 0.3 cfs capacity of the Winner Circle stormdrain system would be conveyed west toward Siboney Street. Siboney Street would be reconstructed to crown the road to provide sufficient slope to allow stormwater to drain to Katella Avenue without ponding. Additionally, a portion of the parking lot to the north of the project site would be repaved. The off-site flows would temporarily pond along the project site's northern property line at variable depths up to approximately 13 inches during a 100-year storm, 11.5 inches during a 10-year storm, and 10 inches during a 2-year storm before discharging to the west, into Siboney Street, then would flow overland to the south into Katella Avenue (see Table 4.9.C). During a 100-year storm event, the Winners Circle stormdrain would accommodate 3.54 cfs of the off-site runoff. The remaining 31.55 cfs during a 100-year storm, 19.78 cfs during 10-year storm, and 9.39 cfs during a 2-year storm would be directed to Siboney Street. The ponding would only occur during storms that produce more runoff than 0.3 cfs/acre and only during the peak intensity of the storm event. For example, during a 100-year storm event, the capacity of the Winners Circle stormdrain system would only be exceeded for approximately 3–4 hours and the maximum ponding would only occur for approximately 30 minutes. This ponding would not flood any structures and would only affect the portions of the parking lot north of the project site that are farthest away from the Los Alamitos Race Course grandstand. It should be noted that racing and other major events at the Los Alamitos Race Course that rely on the use of the race track are typically cancelled on days in which heavy rain falls. Therefore, this minor ponding is not expected to result in the loss of any parking spaces or inconvenience to visitors to the Los Alamitos Race Course. The ponding along the project site's northern property line would be a temporary condition until the area to the north has been developed and a stormwater management and detention system is constructed during future development on the 11.8 acres to the north of the project site.

Table 4.9.C: Ponding Depths for Scenario 1

Storm Event	Maximum Overflow (cfs)	Existing Conditions Flow Depth	Maximum Instantaneous Flow Depth
2-year	9.38	N/A	2.5”–10”
10-year	19.78	N/A	3.5”–11.5”
100-year	31.55	0”–4.5”	4”–13”

Source: *Preliminary Hydrology and Hydraulics Study* (2020).
N/A = not applicable

In Scenario 2, flow exceeding the capacity of the Winners Circle stormdrain system would be conveyed across the project site via an underground storm drain to the Katella Avenue storm drain system near the existing on-site driveway. An on-site stormwater pump would likely be required to convey flow from the project site to Katella Avenue. The connection to the Katella Avenue storm drain would have a capacity of 0.3 cfs/acre (3.53 cfs total). Flows in excess of the pump capacity (31.55 cfs during a 100-year storm) would reverse out of a proposed catch basin into the Katella Avenue curb and gutter. As the stormwater is currently conveyed across the project site to Katella Avenue, this option mimics the existing drainage pattern, but flow would be conveyed via an on-site underground stormdrain system instead of via the existing ribbon gutters. The runoff diverted under the project site would reach Katella Avenue at a similar location as in the existing condition. Under Scenario 2, the proposed project would not result in any additional off-site ponding over existing conditions. This option would also be a temporary condition until the area to the north has been developed and a stormwater management and detention system is constructed during future development on the 11.8 acres to the north of the project site.

In Scenario 1, the stormwater runoff diverted around the proposed 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 on-site driveway, the overflow would instead flow into Katella Avenue at Siboney Street. In Scenario 2, stormwater would reach Katella Avenue at a similar location as in the existing condition. Since the on-site portion of the area tributary to Katella Avenue would connect directly into the Katella Avenue storm drain and would be reduced to 4.0 cfs by the detention systems, the overall amount of flows that would reach the Katella Avenue curb and gutter is greatly reduced compared to the existing condition. With implementation of the proposed stormdrain systems and detention system, operational impacts related to a substantial increase in the rate or amount of surface runoff, flow, and volume that would result in flooding would be less than significant, and no mitigation is required.

Threshold 4.9.5: Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact.

Construction. As discussed above, construction of the proposed project has the potential to introduce pollutants to the stormdrain system from erosion, siltation, and accidental spills. However, as specified in Regulatory Compliance Measure HYD-1, the Construction General Permit requires preparation of a SWPPP, which would identify the construction BMPs to be implemented during construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, and spills. In addition, any groundwater extracted during groundwater dewatering activities that is discharged to surface waters would be tested and treated (if necessary) to ensure that any discharges meet the water quality limits specified in the applicable NPDES permit (as specified in Regulatory Compliance Measure HYD-2). Regulatory Compliance Measures HYD-1 and HYD-2 are existing NPDES requirements with which the project is required to comply. These measures would prevent substantial additional sources of polluted runoff being discharged to the stormdrain system through implementation of construction BMPs that target pollutants of concern

in runoff from the project site as well as testing and treatment (if required) of groundwater prior to its discharge to surface waters.

Additionally, the SWPPP would include construction BMPs to control and direct surface runoff on site and would include detention measures if required to ensure that stormwater runoff from the construction site does not exceed the capacity of the stormwater drainage systems. For these reasons, construction impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Operation. As discussed above, operation of the project has the potential to introduce pollutants to the stormdrain system from the proposed on-site uses. However, as specified in Regulatory Compliance Measure HYD-3, permanent operational BMPs that target and reduce pollutants of concern in stormwater runoff would be implemented and maintained throughout the life of the project. Regulatory Compliance Measure HYD-3 is an existing NPDES requirement with which the project is required to comply. This measure would prevent substantial additional sources of polluted runoff being discharged to the stormdrain system through implementation of operational BMPs to target pollutants of concern in runoff from the project site. Additionally, the proposed detention system would reduce stormwater runoff from the project site to below existing conditions and at the allowable system capacity of 0.3 cfs/acre. For these reasons, operational impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Threshold 4.9.7: Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Or

Threshold 4.9.8: Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The project site is not located within a 100-year floodplain. According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) No. 06059C0116J (December 3, 2009), the project site is located within Zone X, which comprises areas of 0.2 percent annual chance flood (500-year flood). As the project is not located within a 100-year floodplain, the project would not place housing or structures within a 100-year flood hazard area. No impact would occur, and no mitigation is required.

Threshold 4.9.9: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less Than Significant Impact. The project site is not located within the inundation zone of a levee. However, the project site is located within the inundation zone of Prado Dam and the Carbon Canyon Dam.

The Carbon Canyon Dam, which was constructed in 1961 by the USACE and is operated by the USACE Los Angeles District, works in conjunction with the Brea and Fullerton Dams for flood protection of portions of the coastal plains in Orange County (USACE 2016). According to the City's General Plan Safety Element (2001), the dam is designed to hold 12,000 acre-feet of water. During a flood event that would cause the dam to exceed its capacity, the portion of Cypress below Orange Avenue could be completely inundated.

Prado Dam was designed in the 1930s, but increased its functioning capability due to Seven Oaks Dam, which was completed in November 1999, and is approximately 40 miles upstream on the Santa Ana River. During a flood, Seven Oaks Dam stores water destined for Prado Dam for as long as the reservoir pool at Prado Dam is rising. When the flood threat at Prado Dam has passed, Seven Oaks Dam begins to release its stored flood water at a rate that does not exceed the downstream channel capacity. Working in tandem, the Prado and Seven Oaks Dams provide increased flood protection to Orange County.

Prado Dam is maintained and inspected to ensure its integrity and to ensure that risks are minimized. In addition, construction of the Santa Ana River Mainstem Project was initiated in 1989, and is scheduled for completion in 2021. The Santa Ana River Mainstem Project will increase levels of flood protection to more than 3.35 million people in Orange, San Bernardino, and Riverside Counties. Improvements to 23 miles of the Lower Santa Ana River channel, from Prado Dam to the Pacific Ocean, are 95 percent complete, with the remaining bank protection improvements in Yorba Linda currently under construction. Improvements to the Santa Ana River channel include construction of new levees and dikes. In addition, the Santa Ana River Mainstem Project includes improvements to Prado Dam that are currently underway and are estimated to be completed in 2021. The Prado Dam embankment has been raised and the outlet works have been reconstructed to convey additional discharges. Remaining improvements to Prado Dam include acquisition of additional land for the expansion of the Prado Reservoir, construction of protective dikes, and raising of the spillway (OCPW Orange County Flood Division 2019b).

Although the project would construct new structures in an inundation zone, the proposed project would not increase the chance of inundation from failure of Carbon Canyon Dam or Prado Dam. Additionally, the entire City of Cypress is within a dam inundation zone. The potential for dam failure is remote and the City's emergency evacuation plans would be implemented if these dams were susceptible to rupture during heavy rains or other events. Therefore, project impacts related to the exposure of people and structures to significant risk associated with flooding as a result of dam failure would be less than significant. No mitigation is required.

Threshold 4.9.10: Would the project be subject to inundation by seiche, tsunami, or mudflow?

No Impact. The project site is relatively flat and not at risk of mudflow. The project site is not located within an inundation zone of a seiche or tsunami. Therefore, no impact from inundation by seiche, tsunami, or mudflow would occur, and no mitigation is required.

Threshold 4.9.14: Would the project result in increased impervious surfaces and associated increased runoff?

No Impact. The proposed project would not change the impervious surface area on site (the site would be 12 acres of impervious surface area in the existing and proposed condition); therefore, the proposed project would not increase stormwater runoff from the project site. The proposed project would include a detention system to reduce peak discharges from the project site to 0.3 cfs/acre (or 4.0 cfs for the project site) per City requirements. Because the proposed project would not increase impervious surface area or runoff, no impacts would occur, and no mitigation is required.

Threshold 4.9.16: Would the project be tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?

Less Than Significant Impact. After entering the stormdrain system in Katella Avenue, runoff from the project site is eventually discharged to the San Gabriel River. Reach 1 of the San Gabriel River (from the estuary to Firestone Boulevard) is impaired for pH and temperature. The San Gabriel River Estuary is impaired for nickel, dissolved oxygen, copper, dioxin, and indicator bacteria.

As discussed above, construction of the proposed project has the potential to introduce pollutants to the stormdrain system from erosion, siltation, and accidental spills. During construction activities, excavated soil would be exposed and there would be an increased potential for soil erosion and sediment to reach downstream receiving waters, which could result in decreases in dissolved oxygen levels. During construction activities, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked. Therefore, construction has the potential to contribute to the temperature and pH impairments. Grading and earthmoving equipment are sources of chemicals, liquid products, and petroleum products if the equipment leaks and could contribute to the metals (nickel and copper) and pH impairments in downstream receiving waters. If concrete-related wastes are spilled or leaked, they could affect the pH of downstream receiving waters. Temporary or portable sanitary facilities provided for construction workers could be a source of sanitary waste and contribute to downstream indicator bacteria impairments. However, sanitary waste generated from temporary or portable sanitary facilities would be disposed of in compliance with all applicable regulations. Project construction would not involve use of dioxin, which was banned in the U.S. in 1979. Therefore, project construction would not contribute to the dioxin impairment.

As specified in Regulatory Compliance Measure-HYD-1, compliance with the Construction General Permit requires preparation of a SWPPP to identify construction BMPs to be implemented during project construction to reduce impacts to water quality. Construction BMPs would include, but not be limited to, Erosion and Sediment Control BMPs designed to minimize erosion and retain sediment on-site, as well as Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. In addition, during groundwater dewatering, Regulatory Compliance Measure HYD-2 would ensure that pollutants are not introduced to receiving waters and that water quality standards and waste discharge requirements are met.

During operation, expected pollutants of concern include suspended solids/sediment, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, and trash and debris. Pets utilizing the landscaped areas would be a potential source of bacteria (e.g., fecal matter) which could contribute to the indicator bacteria and dissolved oxygen impairment. Vehicles operating within the project site could be a source of heavy metals (nickel and copper). Therefore, there is the potential for operational pollutants to contribute to the indicator bacteria, nickel, copper, pH, and temperature impairments in receiving waters. Project operation would not involve the use of dioxin. Therefore, the project would not contribute to the dioxin impairment.

As specified in Regulatory Compliance Measure HYD-3, post-construction BMPs would be implemented and maintained during operation to target and reduce pollutants in stormwater runoff from the project site during operation. The Source Control and LID BMPs specified in the WQMP would target and reduce pollutants in stormwater runoff from the project site, including those contributing to downstream water quality impairments. Therefore, with implementation of Regulatory Compliance Measure HYD-3, impacts related to an increase in pollutants for which the receiving waterbody is already impaired as listed on the CWA Section 303(d) list would be less than significant, and no mitigation is required.

Threshold 4.9.17: Would the project be tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?

No Impact. According to the North Orange County MS4 Permit, Environmentally Sensitive Areas are areas such as those designated in the Ocean Plan as Areas of Special Biological Significance (ASBS) or waterbodies listed on the CWA Section 303(d) list of impaired waters. The project site is not tributary to an ASBS (SWRCB 2019). In addition, the proposed project does not meet the priority development project definition of "a development of 2,500 sf of impervious surface or more, adjacent to (within 200 ft) or discharging directly into Environmentally Sensitive Areas." The nearest CWA Section 303(d) impaired waterbody is the San Gabriel River, which is located approximately 6 miles downstream of the project site. In addition, the project would not discharge directly into this CWA Section 303(d) impaired water. Therefore, implementation of the proposed project would not result in any impacts to environmentally sensitive areas. No mitigation is required.

Threshold 4.9.19: Would the project have a potentially significant adverse impact on groundwater quality?

Or

Threshold 4.9.20: Would the project cause or contribute to an exceeded applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

Less Than Significant Impact. Although groundwater dewatering would be required, dewatered groundwater would be discharged to the stormdrain system rather than back into groundwater and therefore would not introduce pollutants to groundwater. Infiltration of stormwater has the potential to affect groundwater quality in areas of shallow groundwater. However, according to the *Water Quality Management Plan* prepared for the project, the on-site soils are not favorable for

infiltration. Specifically, on-site soils are classified as Hydrologic Soil Ground D, which has a minimal infiltration rate when thoroughly wetted. Therefore, minimal infiltration would occur on site during construction and operation. Project construction and operation would not involve groundwater injection. Additionally, infiltration BMPs are not proposed. Because minimal infiltration would occur and no groundwater injection would occur, project construction activities would not substantially degrade groundwater quality or result in the exceedance of water quality objectives or degradation of beneficial uses. Impacts would be less than significant, and no mitigation would be required.

Threshold 4.9.21: Would the project impact aquatic, wetland, or riparian habitat?

No Impact. There is no aquatic, wetland, or riparian habitat present on the project site. Los Alamitos Channel, the downstream receiving water, is concrete-lined and does not provide aquatic, wetland, or riparian habitat. Therefore, development of the proposed project would not impact any aquatic, wetland, or riparian habitat. No mitigation is required.

Threshold 4.9.22: Would the project include new or retrofitted stormwater treatment control Best Management Practices (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g., increased vectors or odors)?

Less Than Significant Impact. As discussed above, the project would include implementation of post-construction BMPs (underground detention basins) to reduce impacts related to hydrology and water quality. These post-construction BMPs would not result in additional impacts not already evaluated throughout this EIR. The post-construction BMPs would be underground and would be designed and routinely inspected and maintained to reduce impacts related to vectors and odors. Therefore, impacts related to BMPs would be less than significant, and no mitigation is required.

4.9.2 Level of Significance Prior to Mitigation

Construction and operational impacts related to hydrology and water quality would be less than significant with implementation of Regulatory Compliance Measures HYD-1 through HYD-3.

4.9.3 Regulatory Compliance Measures and Mitigation Measures

4.9.3.1 Regulatory Compliance Measures

The following Regulatory Compliance Measures are existing regulations that are applicable to the proposed project and are considered in the analysis of potential impacts related to hydrology and water quality. The City of Cypress considers these requirements to be mandatory; therefore, they are not mitigation measures.

Regulatory Compliance Measure HYD-1 **Construction General Permit.** Prior to commencement of construction activities, the Applicant/Developer shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit),*

NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Cypress Community Development Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to, preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction activities and stabilization of the project site, a Notice of Termination shall be submitted via SMARTS.

Regulatory Compliance Measure HYD-2 **Groundwater Dewatering Permit.** If groundwater dewatering is required during excavation activities, the Applicant/Developer shall obtain coverage under the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis)*

*Threat to Water Quality (*Order No. R8-2009-0003, NPDES No. CAG998001) (*De Minimis* Permit). This shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to the start of dewatering. Groundwater dewatering activities shall comply with all applicable provisions in the permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.

Regulatory Compliance Measure HYD-3 **Best Management Practices.** The Applicant/Developer shall implement the BMPs identified in Section IV of the Water Quality Management Plan and the drainage improvements identified in the Hydrology and Hydraulics Study. In addition, the Property Management Association shall be the responsible party for inspection and maintenance of the BMPS as identified in Section V of the Preliminary Water Quality Management Plan.

4.9.3.2 Mitigation Measures

No mitigation measures are required.

4.9.4 Level of Significance after Mitigation

The proposed project would not result in significant impacts related to hydrology and water quality, and no mitigation is required.

4.9.5 Cumulative Impacts

Cumulative development in the San Gabriel River Watershed is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the area. The area's watercourses have been channelized, and drainage systems have been put into place to respond to the past urbanization that has occurred in this area. For the cumulative analysis related to hydrology and water quality, the cumulative projects being considered include the related projects within the same watershed as the proposed project (i.e., the San Gabriel River Watershed) and/or discharging to the same stormdrain systems as the proposed project (i.e., the Katella Avenue stormdrain and the Los Alamitos Channel). Please refer to Table 4.A and Figure 4-1, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, for the descriptions and locations of these related projects.

Related Projects 7–15, 18, and 19 would discharge to the Katella Avenue stormdrain and then the Los Alamitos Channel. Related Projects 1–5 would discharge to the stormdrain system in Cerritos Avenue, which connects to the Los Alamitos Channel. Each of these related projects could

potentially increase the volume of stormwater runoff and contribute to pollutant loading in stormwater runoff reaching both the City's stormdrain system and the San Gabriel River Watershed, thereby resulting in cumulative impacts to hydrology and surface water quality. Projects 6, 16, and 17 are located within the Anaheim Bay-Huntington Harbour Watershed and do not discharge to the same stormdrain systems or receiving waters as the project site. These related projects are not considered in this cumulative analysis because they do not have the potential to contribute to the hydrology- and water quality-related impacts of the proposed project to result in cumulative impacts.

New development and redevelopment can result in increased stormwater runoff and increased urban pollutants in stormwater runoff from each of the related project sites. Each related project must include BMPs to reduce impacts to water quality and hydrology in compliance with local ordinances and plans adopted to comply with requirements of the various NPDES permits. Specifically, the related projects that disturb 1 acre or more of soil must comply with the requirements of the Construction General Permit and the North Orange County MS4 Permit. The preparation and approval of a SWPPP (for construction) and a WQMP (for operation) would be required for each related project to determine appropriate BMPs to minimize water quality impacts. In addition, the preparation and approval of a hydrology study would be required to determine the hydrologic control required to minimize increases in runoff from each site so they do not exceed existing conditions or result in hydromodification impacts. In addition, cities review all development projects on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available.

Each related project must consider impaired receiving waters and TMDLs for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of water bodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, a project's contribution to overall water quality improvement in the San Gabriel River Watershed in the context of the regulatory program is designed to account for cumulative impacts.

Regional programs and BMPs such as TMDL programs and the MS4 Permit Program have been designed under an assumption that the San Gabriel River Watershed would continue its pattern of urbanization. The regional control measures contemplate the cumulative effects of proposed development. The proposed project would be required to comply with the requirements of the Construction General Permit and the North Orange County MS4 Permit and implement construction and operational BMPs to reduce pollutants in stormwater runoff. Compliance with these regional programs and permits constitutes compliance with programs intended to address cumulative water quality impacts. As stated above, each related project would be required to develop a SWPPP, a WQMP, and a hydrology study, and would be evaluated individually to determine appropriate BMPs and treatment measures to reduce impacts to surface water quality and hydrology.

Many City stormdrain systems, including the Katella Avenue stormdrain system, are currently at capacity. Other related projects that would discharge stormwater to the same stormdrain system as the proposed project would have the potential to result in a cumulative impact related to stormdrain capacity and flooding. However, each individual project would be required to prepare a

hydrology study, which would be reviewed and approved by the applicable city. The hydrology study would be required to demonstrate that the project would reduce stormwater discharge to at or below that allowed by the city for the individual project site. The City of Cypress has established discharge requirements for each property within its jurisdiction. As those properties are developed or redeveloped, the projects are required to reduce stormwater runoff from the property to meet the runoff restriction established by the City. The runoff restriction ensures that as development and redevelopment within the City continues, stormwater discharged to the existing stormdrain system will continue to be reduced, lessening the existing stormdrain capacity deficit. Because the proposed project includes an on-site detention system that would be adequately sized and designed to reduce flow to the 0.3 cfs/acre runoff restriction, the project would not contribute to the existing stormdrain capacity deficit.

In summary, because the proposed project and other related projects would comply with applicable NPDES requirements and would include BMPs and drainage facilities to reduce the volume of stormwater runoff and pollutants of concern in stormwater runoff, the cumulative hydrology and water quality impacts of the proposed project and the related projects would be less than significant. Therefore, the proposed project's incremental hydrology and water quality impacts would not be cumulatively considerable.

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4.10 LAND USE AND PLANNING

This section describes the existing land uses on the Cypress City Center project (proposed project) site and in its vicinity, and evaluates the compatibility of the proposed project with surrounding land uses and relevant policy and planning documents. The consistency analysis presented in this section was prepared in compliance with *State CEQA Guidelines* Section 15125(d). Information presented in this section is based on information provided in the City of Cypress (City) General Plan, the Cypress Business and Professional Center Specific Plan (Specific Plan; last amended in 2012), the City's General Plan Land Use Map, the City's Zoning Code (2019), the City's Zoning Map. In addition, pursuant to *State CEQA Guidelines* Section 15125(d), this Environmental Impact Report (EIR) evaluates the proposed project's consistency with other applicable planning documents as they relate to specific topical sections within Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

4.10.1 Methodology

The impact analysis presented in this Land Use and Planning section evaluates potential physical impacts of the proposed project on land use compatibility and considers whether the proposed project would result in potential inconsistencies with relevant plans or policies contained in applicable planning documents adopted by the City and other agencies. Neither CEQA nor the *State CEQA Guidelines* set forth standards for determining whether or not a project is consistent with an applicable plan; rather, the final determination that a project is consistent or inconsistent with an applicable plan is made by the Lead Agency when it acts on the project. The analysis in this Draft EIR discusses the findings of policy review and is meant to provide a guide for decision-makers during policy interpretation.

A project's inconsistency with a plan or policy is only considered significant if such inconsistency would result in a significant physical environmental impact (per *State CEQA Guidelines* Section 15382). This EIR section determines whether or not the proposed project would conflict with any adopted land use policies or programs and whether mitigation is feasible. Under this approach, a policy or program conflict is not in and of itself considered a significant environmental impact. An inconsistency between the proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of an environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse.

4.10.2 Existing Environmental Setting

The project site is in the southern portion of the City of Cypress, California, which in the northwest portion of the County. As illustrated in Figure 3.2, Project Vicinity Land Uses, in Chapter 3.0, Project Description, of this EIR, the project site is on the northwest corner of Katella Avenue and Winners Circle in Cypress. The project site is rectangular in shape and consists of five parcels (Assessor's Parcel Numbers [APNs] 241-091-22, -23, -24, -25, and -26) totaling approximately 13 acres. In its existing setting, the project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxes and lines. The edge condition along Katella Avenue and a portion of Siboney Street has been improved with a public sidewalk, fencing, and ornamental landscaping. The edge condition along Winners Circle has been improved with a public sidewalk and driveway access points, with no landscaping.

Temporary existing uses on the project site include vehicle parking during events at the nearby Los Alamitos Race Course. Other short-term uses include a Christmas tree lot and a truck staging area. Local businesses have leased the project site on a temporary basis from time to time for auxiliary truck and trailer storage.

Figure 3.2 also shows that the project site is surrounded by a variety of racetrack, office, business park, commercial and retail services, and residential land uses as well as several religious facilities. Specifically, land uses surrounding the project site include the Los Alamitos Race Course to the north of the project site. Northeast of the site is a Goodwill Donation Center and Cypress Corporate Park. East of the site, beyond Winners Circle, are commercial and retail services, including a Costco warehouse outlet and restaurant uses. Katella Avenue, a six-lane arterial roadway, borders the project site to the south. Uses to the south of Katella Avenue include commercial and office and business park uses in the City of Los Alamitos. A commercial center consisting of restaurant and commercial services uses, a 24 Hour Fitness and a Marriott Hotel are to the west. The Barton Place Residential Project (now known as Ovation at Flora Park), and the Seventh-Day Adventist Church are immediately west of the commercial center.

4.10.3 Regulatory Setting

4.10.3.1 Federal Regulations

There are no federal regulations applicable to land use and planning.

4.10.3.2 State Regulations

California State Planning and Zoning Law. This law, which is codified in California Government Code sections 65000-66037, delegates most of the State's local land use and development decisions to cities and counties. The California Government Code establishes specific requirements pertaining to the regulation of land uses by local governments, including general plan requirements, specific plans, subdivisions, and zoning. California Government Code Section 65302 requires that all California cities and counties include the following seven elements in their general plan:

- Land Use
- Circulation
- Housing
- Conservation
- Open Space
- Noise
- Safety

Cities and counties in the San Joaquin Air Pollution Control District must also address air quality in their general plans. Cities and counties that have identified disadvantaged communities must also address environmental justice in their general plans, including air quality.[1]

[1] Senate Bill 1000 (SB 1000), adopted in 2016 requires both cities and counties that have disadvantaged communities to incorporate environmental justice (EJ) policies into their general plans, either in a separate EJ element or by integrating related goals, policies, and objectives throughout the other elements. This update, or revision if the local government already has EJ goals, policies, and objectives, must happen "upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018."

Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375). This statute requires California's regional planning agencies to include a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy in their Regional Transportation Plans (RTP). Senate Bill 375 (SB 375) was enacted to reduce greenhouse gas emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. Under the law, California's regional planning agencies are required to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plans (RTP). The SCS provides a plan for meeting the regional emissions reduction targets established by the California Air Resources Board (ARB). If the emissions reduction targets cannot be met through the SCS, an Alternative Planning Strategy (APS) may be developed that shows how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures of policies. SB 375 also offers local governments regulatory and other incentives to encourage more compact new development and transportation alternatives.

The requirements of SB 375 are reflected in the 2016 RTP/SCS adopted by the Southern California Association of Governments (SCAG), which serves as the regional planning agency in the six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. The 2016–2040 RTP/SCS is discussed in further detail below.

4.10.3.3 Regional Regulations

The project site is covered by several planning documents and programs that have varying degrees of regulation over use of the project site. The following paragraphs explain regional regulations, plans, and policies applicable to the project site that are analyzed in this EIR section.

Southern California Association of Governments (SCAG). As discussed above, regional planning in Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties is conducted by SCAG. SCAG is also the federally designated Metropolitan Planning Organization (MPO) for these six counties. As the designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, a growth forecast, hazardous waste, and air quality. The growth forecast serves as the foundation of these plans. Of the various plans adopted by SCAG, the Regional Comprehensive Plan and the 2016–2040 RTP/SCS are relevant to the project.

Regional Transportation Plan/Sustainable Communities Strategy. On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS. The 2016–2040 RTP/SCS is a long-range planning document that provides a common foundation for regional and local planning, policymaking, and infrastructure goals in the SCAG region. The overall vision for the 2016–2040 RTP/SCS is to allow for compact communities that are connected by numerous public transit options, are more walkable, and are safe for bicyclists. By promoting more compact communities and improving the regional transit system, SCAG's 2016–2040 RTP/SCS aims to reduce vehicular miles traveled and associated air quality and greenhouse gas emissions, promote active lifestyles, and fuel economic growth.

The 2016–2040 RTP/SCS establishes a number of initiatives aimed at improving the regional transit system and reducing automobile reliance in the SCAG planning area. Examples of these initiatives include promoting alternative modes of transportation and active transportation (e.g., bicycling and focusing new growth near transit and High Quality Transit Areas (HQTAs) and Livable Corridors).

HQTAs are defined as walkable transit villages or corridors within 0.5 mile of a well-serviced transit stop or transit corridor with a 15-minute or less service frequency during peak commuting hours. Livable corridors are defined as arterials characterized by a mix of higher-density residential uses, employment centers, active transportation, and alternative transportation modes. In addition, the 2016–2040 RTP/SCS aims to provide sustainable transportation options or residents of the region through the creation of Neighborhood Mobility Areas (NMAs). NMAs promote active transportation and encourage biking, walking, skateboarding, neighborhood electric vehicles, and senior mobility devices in place of automobile use. Overall, the 2016–2040 RTP/SCS aims to focus new growth around transit.

The following goals in the 2016–2040 RTP/SCS are applicable to the proposed project:[1]

> **Goal 1:** Align the plan investments and policies with improving regional economic development and competitiveness.
>
> **Goal 2:** Maximize mobility and accessibility for all people and goods in the region.
>
> **Goal 3:** Ensure travel safety and reliability for all people and goods in the region.
>
> **Goal 4:** Preserve and ensure a sustainable regional transportation system.
>
> **Goal 5:** Maximize the productivity of our transportation system.
>
> **Goal 6:** Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).
>
> **Goal 7:** Actively encourage and create incentives for energy efficiency, where possible.
>
> **Goal 8:** Encourage land use and growth patterns that facilitate transit and active transportation.

4.10.3.4 Local Regulations

The City has preeminent decision-making authority regarding allowable land uses on the project site. As discussed in greater detail below, the City's General Plan and Zoning Code both apply to the project site; however, the Specific Plan largely governs the permitted uses on, and development standards for, the project site.

City of Cypress General Plan. The City of Cypress General Plan contains goals, policies, and plans that are intended to guide land use and development decisions. The General Plan consists of a Land Use Map and the following eight elements, or chapters, which together fulfill the State requirements for a General Plan:

[1] Goal 9 of the 2016–2040 RTP/SCS relates to planning/policy actions to be taken by regional and local agencies; therefore, it does not apply to the project.

- Land Use Element
- Housing Element
- Circulation Element
- Conservation/Open Space/Recreation Element (satisfies the State's Conservation and Open Space Element requirements)
- Safety Element
- Noise Element
- Air Quality Element (optional element not required by State law)
- Growth Management Element (optional element not required by State law)

The City of Cypress General Plan was last comprehensively updated by the City Council in September 2001. The Housing Element was last updated in January 2013.

At the heart of the General Plan is the Land Use Element (2001). This element presents the City's goals and policies directing the long-term growth, development, and revitalization of the City. The Land Use Element serves as a guide to the allocation of land use in the City and has major impacts on key issues and subject areas examined in the other elements of the General Plan. The Land Use Map, which illustrates land uses within the City, is a primary feature of the Land Use Element. Land use designations indicate the type and nature of development that is allowed in a given location.

As shown on Figure 3.5, City of Cypress General Plan Land Uses, the Cypress General Plan Land Use Policy Map designates the project site as "Specific Plan Area" in recognition that the project site is subject to the Cypress Business and Professional Center Specific Plan (Specific Plan). The Specific Plan is discussed in further detail below.

The following goals and policies included in the General Plan are relevant to the proposed project:

- **Land Use Element**
  - **Goal LU-1:** Create a well balanced land use pattern that accommodates existing and future needs for housing, commercial, industrial and open space/recreation uses, while providing adequate community services to City residents.
    - **Policy LU-1.2:** Allow for multi-family infill in designated areas to satisfy regional housing needs.
  - **Goal LU-2:** Ensure that new development is compatible with surrounding land uses, the circulation network, availability of public facilities, and existing development constraints.
    - **Policy LU-2.2:** Where residential/commercial mixed use is permitted, ensure compatible integration of adjacent uses to minimize conflicts.

- **Policy LU-2.4:** Mitigate traffic congestion and unacceptable levels of noise, odors, dust, and light and glare which affect residential areas and sensitive receptors, where feasible.

- **Policy LU-2.7:** Encourage the provision of pedestrian linkages between adjacent commercial uses and commercial and residential uses to encourage pedestrian activity and reduce vehicle trips.

- **Goal LU-5:** Ensure that public facilities and services are available to accommodate development allowed under the General Plan and Zoning Ordinance.

  - **Policy LU-5.5:** Continue to make incremental improvements to the City's flood control and drainage system.

- **Goal LU-17:** Facilitate the expansion of the local serving retail sector.

  - **Policy LU-17.1:** Increase the fiscal benefits to the City by attracting new retail, restaurant and entertainment businesses that can better serve the local population and employment.

  - **Policy LU-17.2:** Target locations for new retail establishments in heavily traveled areas, such as along Lincoln Avenue and Valley View Street, as well as locations for a potential restaurant row.

- **Circulation Element**

  - **Goal CIR-1:** Maintain a safe, efficient, economical, and aesthetically pleasing transportation system providing for the movement of people, goods, and services to serve the existing and future needs of the City of Cypress.

    - **Policy CIR-1.3:** Encourage development which contributes to a balanced land use, which in turn serves to reduce overall trip lengths (i.e., jobs/housing balance, locate retail in closer proximity to resident/patrons).

    - **Policy CIR-2.8:** Enhance the sidewalk environment to encourage pedestrian activities through streetscape and transit enhancement programs.

- **Conservation/Open Space/Recreation Element**

  - **Goal COSR-3:** Conserve energy resources through the use of available technology and conservation practices.

  - **Goal COSR-5:** Preserve Cypress' archaeologic and paleontologic resources.

    - **Policy COSR-5.2:** Prior to development in previously undeveloped areas, require strict adherence to the CEQA guidelines for environmental documentation and mitigation measures where development will affect archaeological or paleontological resources.



    - **Policy COSR-6.1:** Continue to require new developments to provide recreational opportunities for their residents in accordance with the City's park standard, three acres of parkland per 1,000 residents.

- **Housing Element**
    - **Goal HOU-3:** Encourage the provision of a wide range of housing by location, type of unit, and price to meet the existing and future needs of Cypress residents. Establish a balanced approach to meeting housing needs of both renter and owner households.
    - **Goal HOU-4:** Provide adequate housing sites through appropriate land use, zoning, and specific plan designations to accommodate the City's share of regional housing needs.
- **Safety Element**
    - **Goal SAF-1:** Protect residents, workers, and visitors from flood hazards, including dam inundation.
    - **Goal SAF-2:** Protect life and property in Cypress from seismic events and resulting hazards.
    - **Goal SAF-5:** Protect life and property in Cypress from urban fires. Maintain the Orange County Fire Authority's high level of service to community businesses and residents.
    - **Goal SAF-6:** Maintain the police department's high quality of service to the City.
    - **Goal SAF-8:** Protect Cypress residents from air operation accidents.
- **Noise Element**
    - **Goal N-2:** Incorporate noise considerations into land use planning decisions.
    - **Goal N-3:** Minimize noise spillover from commercial uses into nearby residential neighborhoods.
- **Air Quality Element**
    - **Goal AQ-1:** Reduce air pollution through proper land use and transportation planning.
    - **Goal AQ-2:** Improve air quality by reducing the amount of vehicular emissions in Cypress.
- **Growth Management Element**
    - **Goal GM-1:** Reduce traffic congestion.
        - **Policy GM-4.1:** To the extent feasible, utilize information on the jobs/housing balance in the City and region as a factor in land use decision-making.

Cypress Business and Professional Center Specific Plan. As set forth in the Land Use Element of the City's General Plan, Specific Plans implement General Plan goals and policies by designating land uses, densities, development, and design standards in more specific detail. On April 17, 1990, the Cypress City Council adopted the Cypress Business and Professional Center Specific Plan (Specific Plan), which established comprehensive guidance and regulations for the development of approximately 298 acres of land within the City, including the approximately 13-acre project site. In 2012, the Cypress Business and Professional Center Specific Plan was amended. On June 5, 2018, Cypress voters approved the Cypress Town Center and Commons Specific Plan 2.0, which establishes a master plan and regulatory framework for the use and development of 154.4 acres of land that were formerly included in the Specific Plan area.

The Specific Plan is a regulatory plan that constitutes the zoning for the project site. As shown in Figure 3.6, Zoning Designations, according to the City's Zoning Map, the project site currently has a zoning designation of PBP-25A, Planned Business Park (PBP), which is intended to provide for the development of educational, professional office, commercial, industrial, open space, or any public or semi-public uses. However, as discussed above, the Specific Plan largely governs the permitted uses on, and development standards for, the project site. As shown on Figure 3.4, the Specific Plan includes a Land Use Plan, which divides land within the Specific Plan area into nine different planning areas. Figure 3.4 also indicates that portions of the Specific Plan (all of Planning Area 1, most of Planning Area 8, and a small part of Planning Area 6) are now subject to Cypress Town Center and Commons Specific Plan 2.0.

As stated previously, the project site is part of Planning Area 5, which is designated for Professional Office uses. The Professional Office designation is intended to accommodate the development of professional and administrative offices that complement the adjacent hotel center within the Specific Plan area. Permitted uses within this land use designation include a variety of office, studio, financial institutions, governmental, corporate, employment, and health service uses. Uses permitted subject to a conditional use permit include commercial, trade or vocational schools, restaurant, service stations, post offices, and other similar uses that the Community Development Director finds to be compatible with these uses, subject to review or approval by the City Council.

The following policies included in the Specific Plan are relevant to the proposed project:

- **Development Plan**
  - **Overall Concept**
    - **Policy 1:** Encourage primarily employment generating business park and other commercial uses in the Specific Plan area and senior housing and related "continuum of care" facilities in Planning Area 9.
    - **Policy 2:** Encourage revenue generating uses (i.e., retail sales).
    - **Policy 3:** Utilize site plan review as a means of authorizing the maximum and best use of each parcel of land allowed by this Specific Plan.

- **Parcel Size**
  - **Policy 1:** Proposed tentative tract or parcel maps and/or conditional use permit applications for subdivisions must be accompanied by a site plan in order to be processed.
- **Race Track**
  - **Policy 2:** Encourage the design of projects along the common boundary with the race track to include integrated access.
- **Visual Quality and Design**
  - **Policy 2:** Require site plan review for each development project with the Specific Plan area.

- **Circulation Plan**
  - **Overall Concept**
    - **Policy 2:** Access driveway connections to arterial highways shall be aligned with major access points of adjacent developments.

4.10.4 Thresholds of Significance

The thresholds for land use and planning impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist.* The proposed project may be deemed to have a significant impact with respect to land use and planning if it would:

Threshold 4.10.1: Physically divide an established community?

Threshold 4.10.2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

4.10.5 Project Impacts

Threshold 4.10.1: Would the project physically divide an established community?

No Impact. The area surrounding the project site is developed with a variety of racetrack, office, business park, commercial and retail services, and residential land uses as well as several religious facilities. The proposed project would replace approximately 13 acres of surface parking with a mix of residential, hotel, entertainment, and retail uses. The project is designed to activate a currently underutilized parcel along Katella Avenue, one of the City's major travel corridors, with a mix of land uses that would complement existing and planned development in the Specific Plan and the adjacent Cypress Town Center and Commons Specific Plan 2.0. In addition, the proposed project is designed to provide safe and attractive pedestrian connections to surrounding land uses rather than

dividing or separating existing land uses or neighborhoods. As a result, the project would not result in physical divisions in any established community. No mitigation is required.

Threshold 4.10.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

Less Than Significant Impact. As discussed above, the main documents regulating land use on the project site and the immediate vicinity are the City's General Plan and the Specific Plan. The proposed project's relationship to these planning documents is described below; however, the proposed project's consistency with the 2016–2040 RTP/SCS is also provided below.

SCAG Regional Transportation Plan/Sustainable Communities Strategy. Table 4.10.A provides a consistency analysis of the goals from the 2016–2040 RTP/SCS that are relevant to the proposed project. In order to eliminate repetitive policies and focus on key issues, goals that are not relevant to the proposed project are not included in Table 4.10.A. As stated in Table 4.10.A, the proposed project would be consistent with applicable goals in the 2016–2040 RTP/SCS, and no mitigation is required.

City of Cypress General Plan. Table 4.10.B provides a consistency analysis of the goals and policies from the City's General Plan that are relevant to the proposed project. As stated in Table 4.10.B, the proposed project would be consistent with all of the applicable General Plan goals and policies.

Cypress Business and Professional Center Specific Plan. As described in Chapter 3.0, Project Description, the proposed project includes a Specific Plan Amendment request to modify the land use designation of the project site from Professional Office to a newly created mixed-use land use district that would allow residential and hotel uses, while still permitting commercial/retail uses. The proposed Specific Plan Amendment would separate the existing Planning Area 5 into two subareas (5A and 5B). Planning Area 5B would include the project site and be designated "Mixed Use Commercial/Residential." Planning Area 5A, which is located east of the project site, would remain Professional Office. The new designation would allow for both residential and hotel uses as well as commercial uses. The Specific Plan Amendment would also update land use tables to incorporate the new Planning Area 5B and include site development standards and building floor area ratio (FAR) and site coverage standards specific to Planning Area 5B. In addition, the Specific Plan Amendment would include minor changes in the Design Guidelines to allow super graphics (large graphics) and projecting signage for the proposed movie theater. In addition to modifying the parking requirements that would apply to Planning Area 5B, the proposed Specific Plan Amendment would amend several of the goals and objectives of the Specific Plan. Therefore, upon its approval by the City Council, the proposed project would be consistent with the land use designations, development standards, design guidelines, parking requirements, and goals and objectives contained in the Specific Plan.

Table 4.10.C provides a consistency analysis of the policies from the Specific Plan that are relevant to the proposed project. As stated in Table 4.10.B, the proposed project would be consistent with all of the applicable Specific Plan policies.

Table 4.10.A: RTP/SCS Consistency Analysis

Relevant RTP/SCS Goals	Consistency Analysis
RTP/SCS Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.	**Consistent.** The proposed project would amend the Specific Plan to create a new mixed-use land use district that would allow residential and hotel uses on the project site while still permitting commercial/retail uses. The development of up to 251 new housing units in an area of Cypress that is surrounded by business parks would improve the region's economic competitiveness by ensuring that area workers would have access to new housing in close proximity to their jobs. Therefore, the proposed project would be consistent with Goal 1 in the 2016–2040 RTP/SCS.
RTP/SCS Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent.** The proposed project would result in the replacement of a currently underutilized parking lot to a mix of land uses located directly adjacent to Katella Avenue, which is one of the City's major travel corridors. Four OCTA bus stops for Westbound and Eastbound Route 50 are located directly adjacent and across the street from the project site, providing connections for the site with the local and regional transportation systems. Access to the project site would be provided via three driveways, one each off Siboney Street, Katella Avenue, and Winners Circle. Additionally, the proposed project is designed to provide safe and attractive pedestrian connections to surrounding land uses. Therefore, the proposed project would be consistent with Goal 2 of the 2016–2040 RTP/SCS.
RTP/SCS Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Consistent.** All proposed pedestrian improvements included as part of the proposed project would comply with City and OCFA standards to ensure their safety and reliability. Therefore, the proposed project would be consistent with Goal 3 in the 2016–2040 RTP/SCS.
RTP/SCS Goal 4: Preserve and ensure a sustainable regional transportation system.	**Consistent.** As described above in the analysis for Goal 2, the proposed project would provide safe and attractive pedestrian connections to surrounding land uses. The project site would be accessible from the existing bus stops on Katella Avenue, which would provide connections for the site to the local and regional transportation systems. Additionally, the project site is in the vicinity of a Class I regional bike path on Valley View and Class II bike lanes on Cerritos Avenue. Therefore, the proposed project would be consistent with Goal 4 in the 2016–2040 RTP/SCS.
RTP/SCS Goal 5: Maximize the productivity of our transportation system.	**Consistent.** The proposed project would provide access to the site from Siboney Street, Katella Avenue, and Winners Circle and would provide connections to public sidewalks adjacent to the project site, which would serve to connect the site with the local and regional transportation systems. As such, development of the proposed project would maximize the productivity of the existing roadway network in the vicinity of the site. In addition, the project would have access to OCTA's transportation services and would be in the vicinity of existing bike facilities, which would encourage greater use of the region's existing transportation system. Therefore, the proposed project would be consistent with Goal 5 in the 2016–2040 RTP/SCS.

Table 4.10.A: RTP/SCS Consistency Analysis

Relevant RTP/SCS Goals	Consistency Analysis
RTP/SCS Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).	**Consistent.** As described above in the analysis for Goal 2, the proposed project is designed to provide safe and attractive pedestrian connections to surrounding land uses. The project site would be accessible from the existing bus stops on Katella Avenue, which would provide connections for the site to the local and regional transportation systems. Additionally, the project site is in the vicinity of a Class I regional bike path on Valley View and Class II bike lanes on Cerritos Ave. As described in Section 4.2, Air Quality, of this EIR, construction and operation of the proposed project would result in less than significant air quality impacts with the implementation of Regulatory Compliance Measures. Because the proposed project would encourage active transportation and not degrade air quality, the proposed project would be consistent with Goal 6 in the 2016–2040 RTP/SCS.
RTP/SCS Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	**Consistent.** The proposed project would provide energy efficiency through compliance with the California Green Building Standards Code (CALGreen Code). The proposed project would also incorporate a number of energy and water conservation measures, green building features, and Low Impact Development (LID) design features. Sustainability features proposed as part of the proposed project include, but are not limited to: the implementation of renewable energy (i.e., solar panels and LED lights) and USEPA energy star rating appliances. As such, the proposed project would be consistent with Goal 7 in the 2016–2040 RTP/SCS.
RTP/SCS Goal 8: Encourage land use and growth patterns that facilitate transit and active transportation.	**Consistent.** As described above in the analysis for Goal 2, the proposed project is designed to provide safe and attractive pedestrian connections to surrounding land uses. The project site would be accessible from the existing bus stops on Katella Avenue, which would provide connections for the site to the local and regional transportation systems. Additionally, the project site is in the vicinity of a Class I regional bike path on Valley View and Class II bike lanes on Cerritos Avenue. The proposed project would facilitate transit use and active transportation by providing a new dense, mixed-use development on an underutilized property along a major arterial street (Katella Avenue), which is already served by existing transit service on Katella Avenue. New residents would be able to take transit to or walk to surrounding land uses, including nearby jobs in the business parks clustered around the intersection of Valley View Street and Katella Avenue. Therefore, the proposed project would be consistent with Goal 8 in the 2016–2040 RTP/SCS.

Source: Southern California Association of Governments. 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy.
LED = light-emitting diode
OCFA = Orange County Fire Authority
OCTA = Orange County Transportation Authority
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
USEPA = United States Environmental Protection Agency

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
Land Use Element	
Goal LU-1: Create a well balanced land use pattern that accommodates existing and future needs for housing, commercial, industrial and open space/ recreation uses, while providing adequate community services to City residents.	**Consistent.** The proposed project would develop a mixed-use project in an area of the City that is currently characterized by a mix of residential and commercial uses. As discussed further in Section 4.13, Public Services, and Section 4.17, Utilities and Service Systems, the affected public agencies were contacted during preparation of this EIR to determine potential project-related impacts to affected public agencies. As described in Sections 4.13 and 4.17, the project's impacts to utilities and other public services would be less than significant. Therefore, project implementation would contribute to a well-balanced land use pattern that accommodates the City's existing and future needs for housing and commercial uses, while providing adequate community services to City residents. Therefore, the proposed project would be consistent with General Plan Land Use Element Goal LU-1.
Policy LU-1.2: Allow for multi-family infill in designated areas to satisfy regional housing needs.	**Consistent.** The proposed project would develop multi-family housing on an underutilized infill parcel along a major arterial street. Although the proposed project would require the approval of a Specific Plan amendment to create a new mixed-use land use district that would allow residential uses on the project site, as described in further detail in Section 4.12, Population and Housing, the development of new housing on the project site would help the City meet its regional housing needs requirements. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-1.2.
Goal LU-2: Ensure that new development is compatible with surrounding land uses, the circulation network, availability of public facilities, and existing development constraints.	**Consistent.** As demonstrated in this Section 4.10, Land Use and Planning; Section 4.2, Air Quality; and Section 4.11, Noise, the project is designed to be compatible with surrounding land uses. As discussed further in Section 4.15, Transportation, the proposed project would have less than significant impacts on the local circulation network. According to Section 4.13, Public Services, and Section 4.17, Utilities and Service Systems, the proposed project would not have a significant impact on public facilities in light of existing development constraints. Therefore, the proposed project would be consistent with General Plan Land Use Element Goal LU-2.
Policy LU-2.2: Where residential/commercial mixed use is permitted, ensure compatible integration of adjacent uses to minimize conflicts.	**Consistent.** As demonstrated in this Section 4.10, Land Use and Planning; Section 4.2, Air Quality; Section 4.11, Noise; and Section 4.15, Transportation, the project is designed to be compatible with surrounding land uses. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy 2.2.
Policy LU-2.4: Mitigate traffic congestion and unacceptable levels of noise, odors, dust, and light and glare which affect residential areas and sensitive receptors, where feasible.	**Consistent.** As discussed in Section 4.15, Transportation, the proposed project would not generate significant adverse impacts related to traffic and transportation. As discussed in Sections 4.1, Aesthetics, 4.2, Air Quality, and 4.11, Noise, sensitive receptors at nearby churches and residential neighborhoods would not experience unacceptable levels of noise, odors, dust, light, or glare as a result of project implementation. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-2.4.

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
Policy LU-2.7: Encourage the provision of pedestrian linkages between adjacent commercial uses and commercial and residential uses to encourage pedestrian activity and reduce vehicle trips.	**Consistent.** As shown in Figure 3.9, Conceptual Landscape Plan, in Chapter 3.0, Project Description, the proposed project would provide internal walkways connecting the on-site residential, commercial and hotel uses. In addition to installing a new sidewalk along Siboney Street to the west of the project site, the proposed project would provide pedestrian connections to the existing sidewalks along Katella Avenue and Winners Circle, which would facilitate pedestrian access to neighboring commercial development to the east and west. The proposed project would also provide pedestrian connections to areas north of the project site that are planned for future development under the Cypress Town Center and Commons Specific Plan 2.0. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-2.7.
Goal LU-5: Ensure that public facilities and services are available to accommodate development allowed under the General Plan and Zoning Ordinance.	**Consistent.** The proposed project would amend the Specific Plan to create a new mixed-use land use district that would allow residential and hotel uses on the project site while still permitting commercial/retail uses. As discussed further in Section 4.13, Public Services, public facilities and services in the City of Cypress would not be significantly impacted by the proposed project. With implementation of mitigation measures or adherence to regulatory standards, project implementation would not disrupt or impair current fire, police, library, or education service levels. As discussed in Section 4.14, Recreation, the proposed project's new residents would generate an incremental increase in demand for park facilities; however, this increased demand would be offset by the payment of park fees required by Regulatory Compliance Measure REC-1. Therefore, the proposed project would be consistent with General Plan Land Use Element Goal LU-5.
Policy LU-5.5: Continue to make incremental improvements to the City's flood control and drainage system.	**Consistent.** As discussed in Section 4.9, Hydrology and Water Quality, the proposed project would result in less than significant impacts related to causing a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding during construction or operation. The proposed project's stormwater detention system would be designed to attenuate the 100- year storm event and meet the City's peak discharge requirement of 4.0 cfs from the project site. This would help alleviate pressure on the existing Katella Avenue stormdrain, which is currently at capacity, and make incremental improvements in the City's flood control and drainage system. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-5.5.
Goal LU-17: Facilitate the expansion of the local serving retail sector.	**Consistent.** The proposed project would include 20,800 sf of commercial retail space, which would allow for the addition of new local-serving retail establishments. Therefore, the proposed project would be consistent with General Plan Land Use Element Goal LU-17.
Policy LU-17.1: Increase the fiscal benefits to the City by attracting new retail, restaurant and entertainment businesses that can better serve the local population and employment.	**Consistent.** The proposed project would include 20,800 sf of commercial retail space and a 10-screen movie theater. Because the City does not currently have any movie theaters, the proposed project would add new entertainment uses to serve local residents and employees. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-17.1.

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
Policy LU-17.2: Target locations for new retail establishments in heavily traveled areas, such as along Lincoln Avenue and Valley View Street, as well as locations for a potential restaurant row.	**Consistent.** The proposed project would include 20,800 sf of new commercial retail space along Katella Avenue, one of the City's most heavily traveled streets. Therefore, the proposed project would be consistent with General Plan Land Use Element Policy LU-17.2.
Circulation Element	
Goal CIR-1: Maintain a safe, efficient, economical, and aesthetically pleasing transportation system providing for the movement of people, goods, and services to serve the existing and future needs of the City of Cypress.	**Consistent.** As discussed in Section 4.15, Transportation, the proposed project would result in less than significant impacts related to traffic at all study area intersections. Therefore, the proposed project would be consistent with General Plan Circulation Element Goal CIR-1.
Policy CIR-1.3: Encourage development which contributes to a balanced land use, which in turn serves to reduce overall trip lengths (i.e., jobs/housing balance, locate retail in closer proximity to resident/patrons).	**Consistent.** The proposed project would include 20,800 sf of new commercial retail space along Katella Avenue, one of the City's most heavily traveled streets. Therefore, the proposed project would be consistent with General Plan Circulation Element Policy CIR-1.3.
Policy CIR-2.8: Enhance the sidewalk environment to encourage pedestrian activities through streetscape and transit enhancement programs.	**Consistent.** As shown in Figure 3.9, Conceptual Landscape Plan, in Chapter 3.0, Project Description, the proposed project would install a new sidewalk along Siboney Street to the west of the project site and connections to the existing sidewalks along Katella Avenue and Winners Circle, which would facilitate pedestrian access to neighboring commercial development to the east and west. The proposed project would also provide pedestrian connections to areas north of the project site that are planned for future development under the Cypress Town Center and Commons Specific Plan 2.0. Therefore, the proposed project would be consistent with General Plan Circulation Element Policy CIR-2.8.
Conservation/Open Space/Recreation Element	
Goal COSR-3: Conserve energy resources through the use of available technology and conservation practices.	**Consistent.** As described in Section 4.5, Energy, the proposed project would comply with the energy efficiency standards included in Title 24 (Regulatory Compliance Measure E-1), which would significantly reduce energy usage. Therefore, the proposed project would be consistent with General Plan Conservation/Open Space/Recreation Element Goal COSR-3.
Goal COSR-5: Preserve Cypress' archaeologic and paleontologic resources.	**Consistent.** As described in Section 4.6, Geology and Soils, the proposed project would implement Mitigation Measure GEO-2, which would require that a qualified paleontologist be contacted in the event that any paleontological resources are discovered during ground-disturbing activities so the discovery can be assessed for scientific importance. The qualified paleontologist shall then make recommendations regarding treatment and disposition of the discovery, the need for paleontological monitoring, and preparation of the appropriate report. Implementation of Mitigation Measure GEO-2 would ensure that impacts to paleontological resources are reduced to a level that is less than significant. As described in Section 4.4, Cultural Resources, the proposed project would implement Mitigation Measure CUL-1, which would require that a qualified professional archaeologist provide cultural resources awareness training prior to the commencement of ground-disturbing activities. If construction personnel encounter any archaeological deposits during construction activities, a qualified professional archaeologist will be contacted to assess the nature of the find, with

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
	the archaeological resources assessed and/or protected as they are discovered. Implementation of Mitigation Measure CUL-1 would ensure that impacts to archaeological resources are reduced to a level that is less than significant. Therefore, the proposed project would be consistent with General Plan Conservation/Open Space/Recreation Element Goal COSR-5.
Policy COSR-5.2: Prior to development in previously undeveloped areas, require strict adherence to the CEQA guidelines for environmental documentation and mitigation measures where development will affect archaeological or paleontological resources.	**Consistent.** Refer to Mitigation Measure CUL-1 in Section 4.4, Cultural Resources, and Mitigation Measure GEO-2 in Section 4.6, Geology and Soils. The proposed project has the potential to affect unknown archaeological and paleontological resources. The proposed project would adhere to the *State CEQA Guidelines* for environmental documentation and mitigation measures where development could affect these resources. Mitigation Measures CUL-1 and GEO-2 would ensure project compliance with CEQA, the California Code of Regulations, the State Health and Safety Code, and the California Public Resources Code as they relate to archaeological and paleontological resources, respectively. Therefore, the proposed project would be consistent with General Plan Conservation/Open Space/Recreation Element Policy COSR-5.2.
Policy COSR-6.1: Continue to require new developments to provide recreational opportunities for their residents in accordance with the City's park standard, three acres of parkland per 1,000 residents.	**Consistent.** As discussed in Section 4.14, Recreation, the proposed project's new residents would generate an incremental increase in demand for park facilities; however, this increased demand would be offset by the payment of park fees required by Regulatory Compliance Measure REC-1. In addition, the proposed project would include public and private open space/recreational amenities. Therefore, the proposed project would be consistent with General Plan Conservation/Open Space/Recreation Element Policy COSR-6.1.
Housing Element	
Goal HOU-3: Encourage the provision of a wide range of housing by location, type of unit, and price to meet the existing and future needs of Cypress residents. Establish a balanced approach to meeting housing needs of both renter and owner households.	**Consistent.** The proposed project would develop multi-family rental housing on an underutilized infill parcel. As described in further detail in Section 4.12, Population and Housing, the development of new housing on the project site would help the City meet its regional housing needs requirements. Therefore, the proposed project would be consistent with General Plan Housing Element Goal HOU-3.
Goal HOU-4: Provide adequate housing sites through appropriate land use, zoning, and specific plan designations to accommodate the City's share of regional housing needs.	**Consistent.** The proposed project includes a Specific Plan amendment to create a new mixed-use land use district that would allow residential uses on the project site. As described in further detail in Section 4.12, Population and Housing, the development of new housing on the project site would help the City meet its regional housing needs requirements. Therefore, the proposed project would be consistent with General Plan Housing Goal HOU-4.
Safety Element	
Goal SAF-1: Protect residents, workers, and visitors from flood hazards, including dam inundation.	**Consistent.** As described in further detail in Section 4.9 Hydrology and Water Quality, the proposed project would not result in significant impacts related to flooding. Additionally, the project site has a very low likelihood of flooding and the proposed on-site stormdrain system would be adequately sized to accommodate stormwater runoff so that on-site flooding would not occur. Therefore, the proposed project would be consistent with General Plan Safety Element Goal SAF-1.

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
Goal SAF-2: Protect life and property in Cypress from seismic events and resulting hazards.	**Consistent.** As discussed in further detail in Section 4.6, Geology and Soils, with the implementation of Mitigation Measure GEO-1, which requires compliance with the recommendations in the project Geotechnical Assessment, all impacts related to geological hazards would be less than significant. As such, the proposed project would be consistent with General Plan Safety Element Goal SAF-2.
Goal SAF-5: Protect life and property in Cypress from urban fires. Maintain the Orange County Fire Authority's high level of service to community businesses and residents.	**Consistent.** As discussed in further detail in Section 4.13, Public Services, the proposed project requires the implementation of Mitigation Measure PS-1, which requires the Applicant/Developer to enter into a Secured Fire Protection Agreement with the Orange County Fire Authority. The Secured Fire Protection Agreement with the County Fire Authority would ensure adequate service to the project site. As such, the proposed project would be consistent with General Plan Safety Element Goal SAF-5.
Goal SAF-6: Maintain the police department's high quality of service to the City.	**Consistent.** As discussed in further detail in Section 4.13, Public Services, the proposed project is expected to be adequately served by existing police facilities. Additionally, the proposed hotel, apartment building, movie theater, and retail buildings are anticipated to hire private security, enhancing on-site surveillance and potentially reducing the demand for police services to the project site. Additionally, the Cypress Police Department would review the site plan during the project approval phase and would impose standard conditions of approval. As such, the proposed project would be consistent with General Plan Safety Element Goal SAF-6.
Goal SAF-8: Protect Cypress residents from air operation accidents.	**Consistent.** As discussed in further detail in Section 4.8, Hazards and Hazardous Materials, the proposed project would not result in a safety hazard for people in the project area because the proposed project would comply with all appropriate Federal Aviation Administration (FAA) standards and requirements, including compliance with Federal Aviation Regulations [FAR] Part 77 requirements as required by Regulatory Compliance Measure HAZ-1. As such, the proposed project would be consistent with General Plan Safety Element Goal SAF-8.
Noise Element	
Goal N-2: Incorporate noise considerations into land use planning decisions.	**Consistent.** As discussed in further detail in Section 4.11, Noise, the proposed uses on the project site would be compatible with surrounding uses based on noise standards established by the City. Therefore, the proposed project would result in the development of land uses consistent with the City's noise standards and the proposed project would be consistent with General Plan Noise Element Goal N-2.
Goal N-3: Minimize noise spillover from commercial uses into nearby residential neighborhoods.	**Consistent.** As discussed in further detail in Section 4.11, Noise, with the implementation of mitigation measures, which include measures to reduce noise impacts to surrounding residential areas, noise impacts would be less than significant. As such, the proposed project would be consistent with General Plan Noise Element Goal N-3.

Table 4.10.B: General Plan Consistency Analysis

Relevant General Plan Goals/Policies	Consistency Analysis
Air Quality Element	
Goal AQ-1: Reduce air pollution through proper land use and transportation planning.	**Consistent**. As discussed in further detail in Section 4.2, Air Quality, the proposed project allows easy access to the commercial/retail uses through its mixed use design and proximity of the residential and retail segments. The proposed project would facilitate transit use by providing a new dense, mixed-use development on an underutilized property along a major arterial street (Katella Avenue), which is already served by existing transit service. As such, the proposed project would be consistent with General Plan Air Quality Element Goal AQ-1.
Goal AQ-2: Improve air quality by reducing the amount of vehicular emissions in Cypress.	**Consistent**. As discussed in further detail in Section 4.2, Air Quality, the proposed project reduces vehicle emissions by increasing internal capture between residential and retail segments. The proposed project would also facilitate transit use by providing a new dense, mixed-use development on an underutilized property along a major arterial street (Katella Avenue), which is already served by existing transit service. As such, the proposed project would be consistent with General Plan Air Quality Element Goal AQ-2.
Growth Management Element	
Goal GM-1: Reduce traffic congestion.	**Consistent.** As discussed in Section 4.15, Transportation, the proposed project would result in less than significant impacts related to traffic at all study area intersections. Therefore, the proposed project would be consistent with General Plan Growth Management Element Goal GM-1.
Policy GM-4.1: To the extent feasible, utilize information on the jobs/housing balance in the City and region as a factor in land use decision-making.	**Consistent.** According to the Growth Forecast prepared for the 2020-2045 RTP/SCS, the City of Cypress had a jobs-to-household ratio of 1.74, which is slightly higher than that of Orange County overall (1.67). This means that the City experiences a minor influx of workers from surrounding communities. The proposed project's addition of 251 new housing units and approximately 115 new jobs on the project site would slightly lower the City's jobs-to-household ratio from 1.74 to 1.72. Generally speaking, however, the Orange County region suffers from a surplus of jobs and a deficit of housing to serve the workers employed in those jobs. Consistent with the referenced policy, this information will be provided to City decision-makers prior to considering approval of the proposed project. Therefore, the proposed project would be consistent with General Plan Growth Management Element Policy GM-4.1.

Source: City of Cypress General Plan (2001).

Table 4.10.C: Specific Plan Consistency Analysis

Relevant Specific Plan Policies	Consistency Analysis
Development Plan	
Overall Concept Policy 1: Encourage primarily employment generating business park and other commercial uses in the Specific Plan area and senior housing and related "continuum of care" facilities in Planning Area 9.	**Consistent.** The Specific Plan amendment proposed as part of the project would amend this policy as follows: "Encourage employment-generating business park and other commercial uses in the Specific Plan area, while expanding the diversity of housing by providing multifamily housing in Planning Area 5B, and senior housing and related "continuum of care" facilities, in Planning Area 9." The proposed project would include the development of multifamily housing and employment-generating commercial and retail uses in Planning Area 5B. Therefore, the proposed project would be consistent with Overall Concept Policy 1.
Overall Concept Policy 2: Encourage revenue generating uses (i.e., retail sales).	**Consistent.** The proposed project would develop a mixed-use project including retail, hotel, and commercial uses on a currently underutilized parcel. Therefore, the proposed project would encourage sales tax revenue generating uses and would be consistent with Overall Concept Policy 2.
Overall Concept Policy 3: Utilize site plan review as a means of authorizing the maximum and best use of each parcel of land allowed by this Specific Plan.	**Consistent.** As described in Chapter 3.0, Project Description, a Site Plan/Design Review would be conducted pursuant to Section 4.19.060 of the City's Municipal Code by the Cypress Design Review Committee. As such, the proposed project would be consistent with Overall Concept Policy 3.
Parcel Size Policy 1: Proposed tentative tract or parcel maps and/or conditional use permit applications for subdivisions must be accompanied by a site plan in order to be processed.	**Consistent.** As described in Chapter 3.0, Project Description, a Site Plan/Design Review would be conducted in conjunction to the approvals required for the proposed project, including a Tentative Parcel Map and Conditional Use Permit. As such, the proposed project would be consistent with Parcel Size Policy 1.
Race Track Policy 2: Encourage the design of projects along the common boundary with the race track to include integrated access.	**Consistent.** The proposed project is designed to provide safe and attractive pedestrian connections to surrounding land uses, including the race track. As such, the proposed project would be consistent with Race Track Policy 2.
Visual Quality and Design Policy 2: Require site plan review for each development project with the Specific Plan area.	**Consistent.** As described in Chapter 3.0, Project Description, a Site Plan/Design Review would be conducted as part of the proposed project pursuant to Section 4.19.060 of the City's Municipal Code by the Cypress Design Review Committee. As part of this review, the City would consider whether the proposed project is in compliance with all zoning requirements and consider the aesthetics and design of the proposed project relative to the aesthetic qualities within the City. As such, the proposed project would be consistent with Visual Quality and Design Policy 2.
Circulation Plan	
Overall Concept Policy 2: Access driveway connections to arterial highways shall be aligned with major access points of adjacent developments.	Access to the project site would be provided on Siboney Street and Winners Circle, which provide access to Katella Avenue for adjacent developments. As such, the proposed project would be consistent with Overall Concept Policy 2.

Source: Amended and Restated Cypress Business and Professional Center Specific Plan (2012).

Summary. As discussed above, the proposed project would be consistent with the 2016–2040 RTP/SCS, the City's General Plan, and the amended Specific Plan. Therefore, the proposed project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.

4.10.6 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts related to land use and planning.

4.10.7 Regulatory Compliance Measures and Mitigation Measures

The proposed project would not result in potentially significant impacts related to land use and planning, so no mitigation is required. No regulatory compliance measures are required.

4.10.8 Level of Significance after Mitigation

No mitigation is required. The proposed project would not result in potentially significant impacts related to land use and planning.

4.10.9 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use and planning. The cumulative impact area for land use for the proposed project is the City of Cypress. Several development projects are approved and/or pending within the City. Table 4.A (refer to Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures) lists adopted and planned projects within the City, and Figure 4.1, Location of Related Projects, maps the locations of these projects. Each of these projects, as well as all proposed development in the City, would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies.

The City of Cypress is an urbanized area with a wide variety of established land uses. The land around the project site has been developed with a variety of residential, business park, racetrack, and commercial, land uses. As previously stated, the project site is designated for Professional Office uses in the Specific Plan. However, the proposed project would amend the Specific Plan to modify the land use designation of the project site from Professional Office to Mixed Use Commercial/Residential (Planning Area 5B) to accommodate the project's proposed uses. The proposed project would also amend the Specific Plan to update the land use tables to incorporate the new Planning Area 5B and include site development standards and building floor area ratio (FAR) and site coverage standards specific to Planning Area 5B. In addition, the Specific Plan Amendment would include minor changes in the Design Guidelines to allow super graphics (large graphics) and projecting signage for the proposed movie theater. In addition to modifying the parking requirements that would apply to Planning Area 5B, the proposed Specific Plan Amendment would amend several of the goals and objectives of the Specific Plan. Should the City Council approve the proposed project, the proposed project would be consistent with the Specific Plan and cumulative land use impacts would be considered less than significant.

The proposed project would include land uses that would be compatible with the existing and planned neighborhoods and commercial areas surrounding the project site and would replace the existing underutilized parking lot on the project site. Therefore, the proposed project would not contribute to a pattern of development that adversely impacts adjacent land uses or conflicts with existing on site or surrounding land uses.

There are no incompatibilities between the proposed project and planned future projects in the City, which primarily include mixed-use and residential developments. As discussed previously, the proposed project would not divide an established community; conflict with the SCAG 2016-2040 RTP/SCS or any City-adopted plans or policies. All identified City-related projects would be reviewed for consistency with adopted land use plans and policies by the City. For this reason, the related projects are anticipated to be consistent with applicable General Plan and zoning requirements, or would be subject to allowable exceptions; further, they would be subject to CEQA, mitigation requirements, and design review. Therefore, the proposed project would not contribute to a significant cumulative land use compatibility impact in the study area, and no mitigation is required.

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4.11 NOISE

This section evaluates the potential short-term and long-term noise impacts associated with the construction and operation of the Cypress City Center project (proposed project). This section is based in part on information provided in the Noise Element of the City's General Plan, the Amended and Restated Cypress Business and Professional Center Specific Plan (Specific Plan), and noise measurements conducted on the project site on July 10 and July 11, 2019. The assumptions used in the noise analysis and the noise modeling results are provided in Appendix H.

4.11.1 Methodology

Evaluation of noise and vibration impacts associated with the proposed project includes the following:

- Determination of the short-term construction noise and vibration impacts
- Determination of the long-term off-site and on-site traffic noise impacts
- Determination of the long-term stationary noise and vibration impacts from project operations.
- Determination of the required mitigation measures to reduce short-term construction–related noise and vibration impacts and long-term stationary and mobile source noise and vibration impacts.

The evaluation of noise and vibration impacts was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the City of Cypress Noise Element and Municipal Code, City of Los Alamitos Municipal Code, and Federal Transit Administration (FTA) criteria.

4.11.1.1 Characteristics of Sound

Noise is usually defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health.

To the human ear, sound has two important characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. In analyzing the potential noise impacts of a proposed project, the existing noise environment in the vicinity of the project site is identified and the potential noise effects of the project are evaluated in terms of sound intensity and the effect on adjacent sensitive land uses.

4.11.1.2 Measurement of Sound

Sound intensity is measured through the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), is a scale based on powers of 10.

Each interval of 10 dB indicates a sound energy 10 times greater than before. For example, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty (30 dB) dB represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is applicable to noise generated by stationary equipment. If noise is produced by a line source (which approximates the effect of several point sources), such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also account for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels. CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the relaxation. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable.

Other noise rating scales used when assessing the annoyance factor of noise include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. Short-term noise impacts are specified in terms of maximum levels denoted by L_{max}. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise. For enforcement purposes, it is often used with another noise scale (or noise standards in terms of percentile noise levels) in noise ordinances. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less

than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period.

4.11.1.3 Vibration

According to the United States Department of Transportation (USDOT) FTA's 2018 *Transit Noise and Vibration Impact Assessment Manual*, vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or anthropogenic causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency. Vibration is often described in units of velocity (inches per second) and discussed in decibel units in order to compress the range of numbers required to describe vibration. Vibration impacts are generally associated with activities such as train operations, construction, and heavy truck movements.

The background vibration velocity level in residential areas is generally 50 vibration velocity decibels (VdB). Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The relevant range of vibration for the purposes of this analysis is from approximately 50 VdB, the typical background vibration velocity level, to 100 VdB, the general threshold where minor damage can occur in buildings.

4.11.2 Existing Environmental Setting

4.11.2.1 Overview of the Existing Noise Environment

The primary existing noise sources in the vicinity of the project site are transportation facilities. Traffic on Katella Avenue is a steady source of ambient noise. Other sources of noise in the vicinity of the project site include aircraft noise from the Joint Forces Training Base (JFTB) Los Alamitos, commercial activity, and event noise at the Los Alamitos Race Course. Noise generated from commercial activity includes parking lot activities, rooftop heating ventilation air conditioning (HVAC) equipment, trash pick-up, and truck delivery and truck unloading activities. Noise generated from events held at the Los Alamitos Race Course includes parking lot activities, crowd noise, and the Public Announcement system. The Los Alamitos Race Course conducts year-round quarter horse races Fridays through Sundays, starting at 7:00 p.m. on Fridays, 6:00 p.m. on Saturdays, and 5:00 p.m. on Sundays with a closing time of 11:00 p.m. In addition, three thoroughbred events are scheduled each year. Based on long-term noise level measurements obtained from the Noise Impact Analysis prepared for the *Barton Place EIR* (Urban Crossroads, April 2015), events at the race course may be audible or distinguishable at the project site.

4.11.2.2 Existing Sensitive Land Uses in the Project Vicinity

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of

their intended purpose. Noise-sensitive land uses include residences, hospitals, school classrooms, churches, libraries, and parks. Noise-sensitive land uses in the vicinity of the project site include residences to the west and south and a church (Seventh-Day Adventist Church) to the west of the project site. Other land uses immediately adjacent to the project site include the Los Alamitos Race Course to the north, commercial/retail uses to the east and west, and office and commercial uses to the south.

4.11.2.3 Existing Noise Levels

The existing noise levels at the project site are assessed from ambient noise levels measurements conducted on the project site, existing aircraft noise, and existing traffic noise levels along roadways in the project vicinity. The existing noise levels in the area surrounding the project site are further described in detail below.

Short-Term Noise Measurements. Three short-term (20-minute) noise level measurements were conducted on the project site on Wednesday, July 10, 2019, using a Larson David Model 824 Type 1 sound level meter. Table 4.11.A shows the results of the short-term measurements along with a description of the measurement location and noise sources that occurred during the measurement. As shown in Table 4.11.A, measured L_{eq} noise levels at the northwestern portion of the project site ranged from 55.2 to 55.8 dBA L_{eq}. In addition, the Community Noise Equivalent Level (CNEL) level at these locations range from 57.1 to 60.5 dBA CNEL, which was calculated based on the noise level profile of the long-term noise level measurement at LT-2. Figure 4.11.1 shows the short-term monitoring locations.

Long-Term Noise Measurements. Long-term (24-hour) noise level measurements were conducted from July 10 to July 11, 2019, using Larson Davis Spark 706RC noise dosimeters at two locations on the project site. Tables 4.11.B and 4.11.C show the hourly equivalent continuous sound level (L_{eq}) results from the long-term measurements, and Table 4.11.D shows the calculated CNEL from the long-term noise level measurements. As shown in Table 4.11.D, the calculated CNELs are 65.8 dBA CNEL and 61.2 dBA CNEL at LT-1 and LT-2, respectively. The long-term monitoring locations are also shown in Figure 4.11.1.

4.11.2.4 Existing Aircraft Noise Levels

The Joint Forces Training Base (JFTB) Los Alamitos is located approximately 0.5 mile south of the project site in the City of Los Alamitos. According to the Airport Environs Land Use Plan for JFTB Los Alamitos and Exhibit SAF-8 in the Safety Element of the City's General Plan, the project site is within the 60 dBA CNEL noise contour, but outside of the 65 dBA CNEL noise contour for JFTB Los Alamitos. In addition, the Long Beach Municipal Airport is located approximately 5.4 miles northwest of the project site. According to the Los Angeles County Airport Land Use Plan, the project site is located outside of the 65 dBA CNEL noise contour for the Long Beach Municipal Airport. In addition, there are no private airstrips located on or within the vicinity of the project site.

Table 4.11.A: Short-Term Ambient Noise Level Measurements

Monitor No.	Location Description	Date	Start Time	Duration (minutes)	Noise Level				Noise Source
					dBA L_{eq}	dBA L_{max}	dBA L_{min}	dBA CNEL[1]	
ST-1	In the parking lot, approximately 30 ft east of Siboney Street, across from the Los Alamitos Seventh-day Adventist Church entrance.	7/10/19	10:12 a.m.	20	55.2	69.2	45.1	57.1	Light traffic on Siboney Street. Faint and constant traffic noise from Katella Avenue.
ST-2	Middle of the parking lot approximately 350 ft west of Winners Circle.	7/10/19	11:39 a.m.	20	54.3	66.5	47.8	57.3	Traffic on Katella Avenue
ST-3	In the parking lot, approximately 20 ft south of the fifth row of light poles and approximately 250 ft east of Siboney Street.	7/10/19	10:49 a.m.	20	55.8	66.6	47.1	60.5	Faint traffic noise on Katella Avenue

Source: Compiled by LSA (2019).
[1] The CNEL level was calculated based on the noise level profile of LT-2.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum A-weighted sound level
L_{min} = minimum A-weighted sound level

Table 4.11.B: Long-Term (24-Hour) Noise Level Measurement Results at LT-1

	Start Time	Date	Noise Level (dBA L_{eq})
1	10:00 AM	7/10/19	60
2	11:00 AM	7/10/19	61
3	12:00 PM	7/10/19	61
4	1:00 PM	7/10/19	61
5	2:00 PM	7/10/19	62
6	3:00 PM	7/10/19	62
7	4:00 PM	7/10/19	62
8	5:00 PM	7/10/19	62
9	6:00 PM	7/10/19	62
10	7:00 PM	7/10/19	61
11	8:00 PM	7/10/19	62
12	9:00 PM	7/10/19	61
13	10:00 PM	7/10/19	58
14	11:00 PM	7/10/19	56
15	12:00 AM	7/11/19	54
16	1:00 AM	7/11/19	53
17	2:00 AM	7/11/19	53
18	3:00 AM	7/11/19	53
19	4:00 AM	7/11/19	57
20	5:00 AM	7/11/19	61
21	6:00 AM	7/11/19	64
22	7:00 AM	7/11/19	64
23	8:00 AM	7/11/19	64
24	9:00 AM	7/11/19	62

Source: Compiled by LSA (2019).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

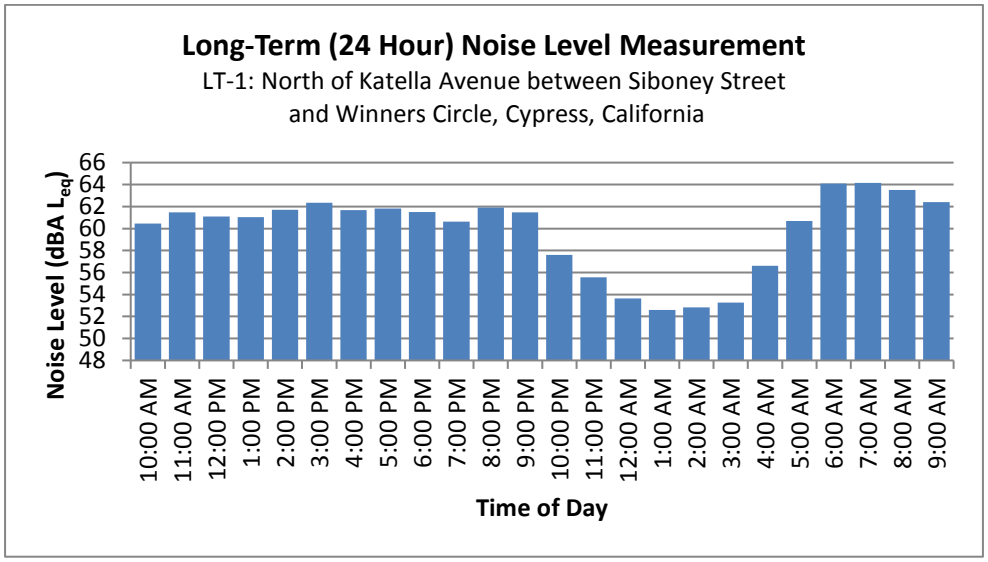


Table 4.11.C: Long-Term (24-Hour) Noise Level Measurement Results at LT-2

	Start Time	Date	Noise Level (dBA L_{eq})
1	10:00 AM	7/10/19	59
2	11:00 AM	7/10/19	58
3	12:00 PM	7/10/19	57
4	1:00 PM	7/10/19	58
5	2:00 PM	7/10/19	58
6	3:00 PM	7/10/19	59
7	4:00 PM	7/10/19	58
8	5:00 PM	7/10/19	59
9	6:00 PM	7/10/19	59
10	7:00 PM	7/10/19	56
11	8:00 PM	7/10/19	59
12	9:00 PM	7/10/19	58
13	10:00 PM	7/10/19	52
14	11:00 PM	7/10/19	50
15	12:00 AM	7/11/19	48
16	1:00 AM	7/11/19	51
17	2:00 AM	7/11/19	51
18	3:00 AM	7/11/19	50
19	4:00 AM	7/11/19	50
20	5:00 AM	7/11/19	54
21	6:00 AM	7/11/19	59
22	7:00 AM	7/11/19	58
23	8:00 AM	7/11/19	57
24	9:00 AM	7/11/19	58

Source: Compiled by LSA (2019).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

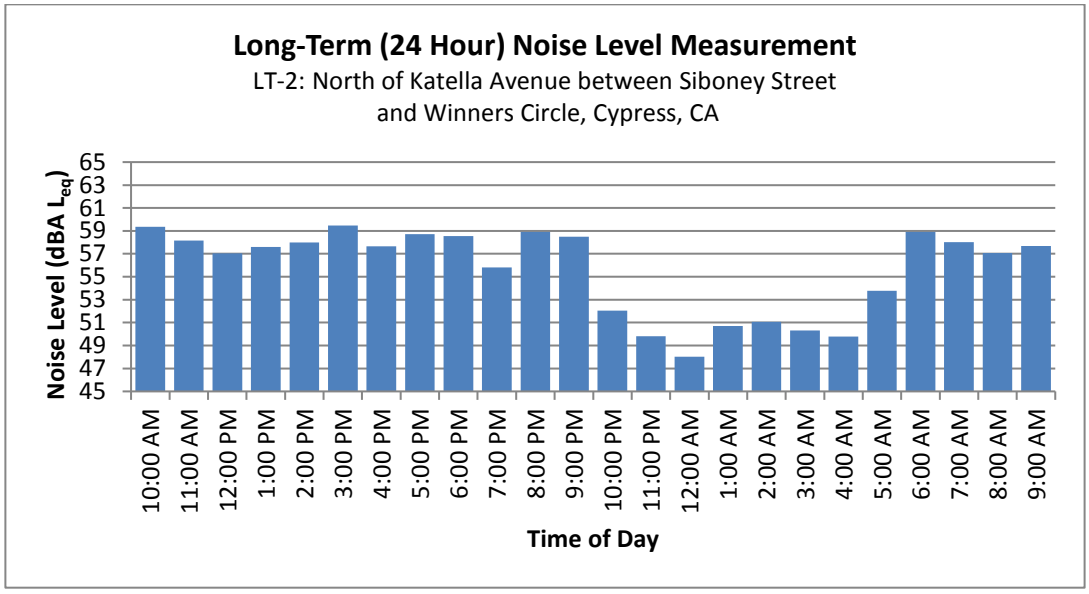


Table 4.11.D: Long-Term Ambient Noise Level Measurements

Monitoring No.	Location	Start Date	Start Time	Duration (hours)	Noise Level (dBA CNEL)	Noise Sources
LT-1	North of Katella Avenue between Siboney Street and Winners Circle	7/10/19	10:00 a.m.	24	65.8	Traffic on Katella Avenue, Siboney Street, and Winners Circle.
LT-2	North of Katella Avenue between Siboney Street and Winners Circle	7/10/19	10:00 a.m.	24	62.1	Traffic on Katella Avenue, Siboney Street, and Winners Circle.

Source: Compiled by LSA (2019).
dBA = A-weighted decibels
CNEL = Community Noise Equivalent Level

4.11.2.5 Existing Traffic Noise Levels

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to evaluate traffic noise in the vicinity of the project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Traffic volumes on roadways within the vicinity of the project site were obtained from the *Cypress City Center Traffic Impact Analysis* (LSA 2019). The standard vehicle mix for Southern California roadways was used for the roadways in the vicinity of the project site. The existing traffic noise levels along roadway segments within the vicinity of the project site are presented in Table 4.11.E. These traffic noise levels are representative of a worst-case scenario that assumes a flat terrain and no shielding between the traffic and the noise contours. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix H.

4.11.3 Regulatory Setting

4.11.3.1 Federal Regulations

Federal Transit Administration. The USDOT FTA identifies guidelines for the maximum acceptable vibration levels for different types of land uses. These guidelines are based on the potential for interference or annoyance from vibration levels in a building and the potential for building damage. According to the FTA, ground vibrations from construction activities generally do not reach levels that can damage structures, but they can achieve the audible and feel-able ranges in buildings very close to the construction site. Exceptions include non-engineered timber and masonry buildings such as residential buildings and old or fragile buildings, where special care must be taken to avoid damage. Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment, such as air compressors, light trucks, and hydraulic loaders, generates little or no ground vibration.

Table 4.11.E: Existing (2019) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Cerritos Avenue west of Los Alamitos Boulevard	22,200	< 50	107	225	67.6
Cerritos Avenue from Los Alamitos Boulevard to Bloomfield Street	25,660	< 50	95	200	66.8
Cerritos Avenue from Bloomfield Street and Denni Street	26,255	59	119	251	68.3
Cerritos Avenue from Denni Street and Moody Street	27,365	72	147	314	69.8
Cerritos Avenue from Moody Street and Walker Street	30,485	76	158	337	70.2
Cerritos Avenue from Walker Street and Valley View Street	27,125	73	147	312	69.3
Cerritos Avenue east of Valley View Street	21,190	62	125	265	68.6
Los Alamitos Boulevard north of Cerritos Avenue	17,390	< 50	80	157	64.4
Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue	25,125	< 50	98	198	66.0
Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue	33,830	63	116	241	67.3
Los Alamitos Boulevard south of Farquhar Avenue	35,980	64	121	251	67.5
Bloomfield Street north of Cerritos Avenue	12,950	< 50	76	158	65.2
Bloomfield Street from Cerritos Avenue to Katella Avenue	11,990	< 50	73	150	64.9
Denni Street north of Cerritos Avenue	7,660	< 50	< 50	90	62.0
Lexington Drive from Cerritos Avenue to Katella Avenue	4,825	< 50	< 50	65	61.0
Moody Street north Cerritos Avenue	10,410	< 50	67	137	64.3
Walker Street north of Cerritos Avenue	15,900	< 50	87	181	66.1
Walker Street from Cerritos Avenue to Katella Avenue	19,850	< 50	99	209	67.1
Valley View Street north of Cerritos Avenue	37,440	90	182	387	70.4
Valley View Street from Cerritos Avenue to Katella Avenue	38,235	91	185	392	70.5
Valley View Street from Katella Avenue to Orangewood Avenue	51,485	109	224	477	71.8
Valley View Street south of Orangewood Avenue	42,570	97	198	421	71.0
Katella Avenue from I-605 Ramps to Wallingsford Road	49,955	90	182	385	70.4
Katella Avenue from Wallingsford Road to Los Alamitos Road	44,415	85	169	357	69.9
Katella Avenue from Los Alamitos Road to Bloomfield Street	38,980	79	155	327	69.3

Table 4.11.E: Existing (2019) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Katella Avenue from Bloomfield Street to Denni Street/Lexington Drive	37,135	77	151	317	69.1
Katella Avenue from Denni Street/ Lexington Drive to Cottonwood Way	37,390	77	151	318	69.1
Katella Avenue from Cottonwood Way to Siboney Street	37,940	78	153	321	69.2
Katella Avenue from Siboney Street to Winners Circle	37,460	77	151	319	69.1
Katella Avenue from Winners Circle to Walker Street	37,610	77	152	320	69.1
Katella Avenue from Walker Street to Valley View Street	43,675	99	201	428	71.1
Katella Avenue east of Valley View Street	30,070	80	159	334	69.4
Siboney Street north of Katella Avenue	3,130	< 50	< 50	< 50	53.8
Winners Circle north of Katella Avenue	1,960	< 50	< 50	< 50	53.6

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
I-605 = Interstate 605

Occasionally, large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. With no enforceable regulations in the Cities of Cypress or Los Alamitos, the FTA guidelines for potential interference or annoyance shown in Table 4.11.F and potential building damage shown in Table 4.11.G are used to assess vibration impacts of the proposed project and determining the significance vibration impacts.

Table 4.11.F: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Max L_v (VdB)[1]	Description of Use
Workshop	90	Distinctly feelable vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Feelable vibration. Appropriate to offices and non-sensitive areas.
Residential Day	78	Feelable vibration. Appropriate for computer equipment and low-power optical microscopes (up to 20X).
Institutional	75	Institutional land uses with primarily daytime use. These uses include schools, churches, and doctors' offices.
Residential Night and Operating Rooms	72	Vibration not feelable, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100X) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hertz.
FTA = Federal Transit Administration
L_V = vibration velocity in decibels
VdB = vibration velocity decibels

Table 4.11.G: Interpretation of Vibration Criteria for Detailed Analysis

Building Category	PPV (inch/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Non-engineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) re 1 µinch/sec.
µinch/sec = microinches per second
FTA = Federal Transit Administration
inch/sec = inches per second
L_V = vibration velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

4.11.3.2 State Regulations

State of California Noise Requirements. The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element, which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research (OPR). The purpose of the Noise Element, as defined by the OPR guidelines, is to limit the exposure of the community to excessive noise levels. In addition, the *State CEQA Guidelines* include thresholds of significance for analyzing environmental noise impacts.

State of California Building Code. The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24; the Building Standards Administrative Code, Part 2; and the California Building Code (which has been adopted by the City of Cypress, with modifications, as the City's Building Code). These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations (Chapter 2-35, Part 2, Title 24) specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are developed near major transportation noise sources and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

4.11.3.3 Regional Regulations

There are no regional regulations related to noise that are applicable to the proposed project.

4.11.3.4 Local Regulations

City of Cypress General Plan. The City's General Plan Noise Element has established interior and exterior noise standards for various land use categories shown in Table 4.11.H. As shown in Table 4.11.H, the City's exterior and interior noise standards are 50–60 dBA CNEL and 45–55 dBA CNEL, respectively, for single- and multifamily residences. It should be noted that the City's exterior noise standard only applies to private yards of single-family residences, private patios, or balconies

Table 4.11.H: City of Cypress Interior and Exterior Noise Standards

Land Use Categories		dBA CNEL	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single Family Duplex, Multiple Family	45[3]–55	50–60
	Mobile Home	45	65[4]
Commercial Industrial	Hotel, Motel, Transient Lodging	45	--
	Commercial Retail, Bank, Restaurant	55	--
	Office Building, Research and Development, Professional Offices, City Office Building	50	--
	Amphitheater, Concert Hall Auditorium, Meeting Hall	45	--
	Gymnasium (Multipurpose)	50	--
	Sports Club	55	--
	Manufacturing, Warehousing, Wholesale, Utilities	65	--
	Movie Theaters	45	--
Institutional	Hospital, Schools' Classrooms	45	65
	Church, Library	45	--
Open Space	Parks	--	65

Source: City of Cypress General Plan Noise Element, Table N-3.

[1] Indoor environmental including: bedrooms, living areas, bathrooms, toilets, closets, corridors.

[2] Outdoor environment limited to: private yards of single-family residences, private patios, or balconies of multifamily residences which are served by a means of exit from inside the dwelling (balconies 6 ft deep or less are exempt), mobile home parks, park picnic areas, and school playgrounds.

[3] Noise level requirement with closed windows. Mechanical ventilation system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of the Uniform Building Code.

[4] Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.

of multifamily residences which are served by a means of exit from inside the dwelling, mobile home parks, park picnic areas, and school playgrounds. Multifamily residences with balconies that are 6 ft deep or less are exempted from the City's exterior noise standard. Although the City's interior noise standard is 45–55 dBA CNEL, the interior noise standard of 45 dBA CNEL was used for a conservative noise analysis. Although the City has not adopted exterior noise standards for hotels, movie theaters, and commercial uses, the City has established an interior noise standard of 45 dBA CNEL for hotels and movie theaters and an interior noise standard of 55 dBA CNEL for commercial retail and restaurant uses.

City of Cypress Municipal Code.

Construction Noise Standards. Section 13-70(e) of the City's Municipal Code states that "noise sources associated with construction, repair, remodeling or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, and before 9:00 a.m. and after 8:00 p.m. on Saturdays, or at any time on Sundays or a federal holiday."

To provide a comprehensive and conservative analysis, the operational noise level limits discussed below were used to evaluate noise generated from project construction. The anytime maximum daytime exterior noise level of 80 dBA L_{max} for residential uses in the City of Cypress was used as the acceptable threshold for determining impacts at noise-sensitive land uses from project construction. This threshold is considered a reasonable threshold of significance for potential construction noise

impacts because the City of Cypress has established maximum exterior noise standards to control operational noise levels.

Operational Noise Standards. Sections 13-68 and 13-69 of the City's Municipal Code has established exterior and interior noise standards for residential uses from stationary noise sources. The exterior and interior stationary source noise standards are shown in Table 4.11.I. Based on the City's Municipal Code, residential land uses adjacent to the project site in the City of Cypress are designated as Noise Zone 2 because they are zoned as Planned Business Park.

Table 4.11.I: City of Cypress Stationary Noise Standards

Noise Zone	Exterior/ Interior	Time Period	L_{50} (30 mins)[1]	L_{25} (15 mins)[2]	L_8 (5 mins)[3]	L_2 (1 min)[4]	L_{max} (Anytime)[5]
1	Exterior	7:00 AM to 10:00 PM	55	60	65	70	75
		10:00 PM to 7:00 AM	50	55	60	65	70
2	Exterior	7:00 AM to 10:00 PM	60	65	70	75	80
		10:00 PM to 7:00 AM	55	60	65	70	75
1 and 2	Interior	7:00 AM to 10:00 PM	--	--	55	60	65
		10:00 PM to 7:00 AM	--	--	45	50	55

Source: City of Cypress Municipal Code (July 2019).

Note: It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person when the foregoing causes the noise level when measured on any other residential property either incorporated or unincorporated to exceed the applicable noise standard. In the event the alleged offensive noise consists of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dBA. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

[1] The noise standard for a cumulative period of more than 30 minutes in any hour

[2] The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour

[3] The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour

[4] The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour

[5] The noise standard plus 20 dBA for any period of time.

L_{max} = maximum instantaneous noise level

min/mins = minute/minutes

City of Los Alamitos Municipal Code. The project site is located within and under the jurisdiction of the City of Cypress. However, due to the close proximity to the City of Los Alamitos, and to present a conservative analysis, the analysis in this section also applies the City of Los Alamitos noise standards to land uses located within that city. The City of Los Alamitos Municipal Code, Chapter 17.24, Noise, provides noise control guidelines for evaluating non transportation or stationary-source noise impacts from operations at private properties.

Construction Noise Standards. Section 17.24.020(D) of the City of Los Alamitos Municipal Code, states that "noise sources associated with construction, repair, remodeling or grading of any real property; provided a permit has been obtained from the city; and provided the activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday."

To provide a comprehensive and conservative analysis, the operational noise level limits discussed below were used to evaluate noise generated from project construction because the City of Los Alamitos has not established noise level limits that apply to construction. The anytime maximum exterior noise level of 75 dBA L_{max} for residential uses in the City of Los Alamitos was used as the acceptable threshold for determining impacts at noise-sensitive land uses from project construction. This threshold is considered a reasonable threshold of significance for potential construction noise impacts because the City of Los Alamitos has established maximum exterior noise standards to control operational noise levels.

Operational Noise Standards. Sections 17.24.050 and 17.24.060 of the City of Los Alamitos Municipal Code has established exterior and interior noise standards for various noise zones from stationary noise sources. The exterior and interior stationary source noise standards are shown in Table 4.11.J. Land uses in Noise Zone 1 are all residential properties. Land uses in Noise Zone 2 are all professional office and public institutional properties. Land uses in Noise Zone 3 are all commercial properties, with the exception of professional office properties. Land uses in Noise Zone 4 are all industrial properties.

Table 4.11.J: City of Los Alamitos Stationary Noise Standards

Noise Zone	Exterior/ Interior	Time Period	L_{50} (30 mins)[1]	L_{25} (15 mins)[2]	L_8 (5 mins)[3]	L_2 (1 min)[4]	L_{max} (Anytime)[5]
1	Exterior	7:00 AM to 10:00 PM	55	60	65	70	75
		10:00 PM to 7:00 AM	50	55	60	65	70
2	Exterior	Anytime	55	60	65	70	75
3	Exterior	Anytime	60	65	70	75	80
4	Exterior	Anytime	70	75	80	85	90
1	Interior	7:00 AM to 10:00 PM	--	--	55	60	65
		10:00 PM to 7:00 AM	--	--	45	50	55
2, 3, and 4	Interior	Anytime	--	--	55	60	65

Source: City of Los Alamitos Municipal Code (July 2019).

Note: It shall be unlawful for a person to create noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by a person that causes the noise level when measured on a residential, public institutional, professional, commercial, or industrial property either within or without the city to exceed the applicable noise standard. Each of the noise limit specified above shall be reduced by 5 dBA for impact or predominant tone noises, or for noises consisting of speech or music. In the event that the noise source and the affected property are within different noise zoning districts, the noise standards of the affected property shall apply. In the event the ambient noise level exceeds either of the first two noise limit categories above, the cumulative period applicable to said category shall be increased to reflect the ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under that category shall be increased to reflect the maximum ambient noise level.

[1] The noise standard for a cumulative period of more than 30 minutes in any hour

[2] The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour

[3] The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour

[4] The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour

[5] The noise standard plus 20 dBA for any period of time.

L_{max} = maximum instantaneous noise level

min/mins = minute/minutes

Amended and Restated Specific Plan (Specific Plan). Because the Specific Plan supersedes any conflicting provisions in the City's Municipal Code regarding the zoning standards applicable to the proposed project, the proposed project would adhere to the construction hours set forth in the Specific Plan. Therefore, the construction hours for the proposed project would be limited to weekdays and Saturdays between the hours of 7:00 a.m. and 8:00 p.m. No construction shall be permitted outside of these hours or on Sundays or federal holidays.

4.11.4 Thresholds of Significance

The thresholds for noise and vibration impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to noise if it would result in:

Threshold 4.11.1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Threshold 4.11.2: Generation of excessive groundborne vibration or groundborne noise levels?

Threshold 4.11.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

In addition to the *State CEQA Guidelines* Appendix G thresholds above, the quantitative noise and vibration standards in Table 4.11.K below, are used in this analysis to evaluate construction and operational impacts related to noise and vibration.

Table 4.11.K: Summary of Noise and Vibration Standards/Significance Criteria

Noise Analysis	Jurisdiction	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic	Cypress and Los Alamitos	Project-related traffic noise increase	≥ 3 dBA CNEL	
On-Site Traffic	Cypress	Interior multifamily residence	45 dBA CNEL	
		Interior hotel and movie theater	45 dBA CNEL	
		Interior commercial retail	55 dBA CNEL	
Operational	Cypress	Exterior residential land use	60 dBA L_{50}	55 dBA L_{50}
		≥ 30 minutes	60 dBA L_{50}	55 dBA L_{50}
		≥ 15 minutes	65 dBA L_{25}	60 dBA L_{25}
		≥ 5 minutes	70 dBA L_8	65 dBA L_8
		≥ 1 minute	75 dBA L_2	70 dBA L_2
		Anytime	80 dBA L_{max}	75 dBA L_{max}
		Interior residential land use	55 dBA L_8	45 dBA L_8
		≥ 5 minutes	55 dBA L_8	45 dBA L_8
		≥ 1 minute	60 dBA L_2	50 dBA L_2
		Anytime	65 dBA L_{max}	55 dBA L_{max}

Table 4.11.K: Summary of Noise and Vibration Standards/Significance Criteria

Noise Analysis	Jurisdiction	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Operational	Los Alamitos	Exterior residential land use	55 dBA L_{50}	50 dBA L_{50}
		≥ 30 minutes	55 dBA L_{50}	50 dBA L_{50}
		≥ 15 minutes	60 dBA L_{25}	55 dBA L_{25}
		≥ 5 minutes	65 dBA L_8	60 dBA L_8
		≥ 1 minute	70 dBA L_2	65 dBA L_2
		Anytime	75 dBA L_{max}	70 dBA L_{max}
		Interior residential land use	55 dBA L_8	45 dBA L_8
		≥ 5 minutes	55 dBA L_8	45 dBA L_8
		≥ 1 minute	60 dBA L_2	50 dBA L_2
		Anytime	65 dBA L_{max}	55 dBA L_{max}
		Exterior office/commercial land use	55 dBA L_{50}/60 dBA L_{50}	
		≥ 30 minutes	55 dBA L_{50}/60 dBA L_{50}	
		≥ 15 minutes	60 dBA L_{50}/65 dBA L_{25}	
		≥ 5 minutes	65 dBA L_{50}/70 dBA L_8	
		≥ 1 minute	70 dBA L_{50}/75 dBA L_2	
		Anytime	75 dBA L_{50}/80 dBA L_{max}	
		Interior office/commercial land use	55 dBA L_8	
		≥ 5 minutes	55 dBA L_8	
		≥ 1 minute	60 dBA L_2	
		Anytime	65 dBA L_{max}	
Construction	Cypress and Los Alamitos	Permitted hours of construction: Weekdays and Saturdays between 7:00 a.m. and 8:00 p.m. No construction shall be permitted outside of these hours or on Sundays and federal holidays.		
	Cypress	Noise level threshold	80 dBA L_{max}	N/A
	Los Alamitos	Noise level threshold	75 dBA L_{max}	N/A
	Cypress and Los Alamitos	Vibration level threshold	See Tables 4.11.F and 4.11.G	

Source: Compiled by LSA (2019).
Note: "Daytime" = 7:00 a.m.–10:00 p.m.; "Nighttime" = 10:00 p.m.–7:00 a.m.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
L_{50} = The noise standard for a cumulative period of more than 30 minutes in any hour
L_{25} = The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour
L_8 = The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour
L_2 = The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour
L_{max} = The noise standard plus 20 dBA for any period of time.
N/A = Not applicable. Construction during nighttime hours is not permitted. Therefore, no nighttime construction noise level threshold is identified.

4.11.5 Project Impacts

Threshold 4.11.1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant with Mitigation Incorporated.

Construction Noise Impacts. Construction noise associated with the proposed project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for on-site construction activities as well as construction vehicle traffic on surrounding roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Other primary sources of acoustical disturbance would be random incidents, such as dropping large pieces of equipment or the hydraulic movement of machinery lifts. During construction, exterior noise levels could negatively affect residences and the church in the vicinity of the construction site. The closest residences are located approximately 890 ft west and 350 ft south of the project site. In addition, the closest church is located approximately 465 ft west of the project site. Construction activities would expose nearby sensitive receptors to peak noise levels from 64.1 dBA to 66.5 dBA L_{max} during the site preparation and grading phase (Phase 1), 65.8 dBA to 68.3 dBA L_{max} during the construction of buildings phase (Phase 2), and 64.9 dBA to 67.4 dBA during the paving phase (Phase 3). These noise levels would not exceed the anytime maximum daytime exterior noise standard of 80 dBA L_{max} in the City of Cypress and noise levels would not exceed the anytime maximum daytime exterior noise standard of 75 dBA L_{max} in the City of Los Alamitos.

In addition, the proposed project would use the Geopier system during the construction of the proposed hotel and apartments. Installation of piles using the Geopier system, or similar methods, generates a maximum noise level of 90 dBA L_{max} at 50 ft. Based on a usage factor of 60 percent, noise levels generated by the installation of Geopiers during construction would be 87.8 dBA L_{eq} at a distance of 50 ft. The closest residences are located approximately 900 ft west and 350 ft south of the project site. In addition, the closest church is located approximately 465 ft west of the project site. Noise levels generated from where the installation of Geopiers would take place would range from 64.9 to 73.1 dBA L_{max} at the closest sensitive receptors. These noise levels would not exceed the anytime maximum daytime exterior noise standard of 80 dBA L_{max} in the City of Cypress and noise levels would not exceed the anytime maximum daytime exterior noise standard of 75 dBA L_{max} in the City of Los Alamitos. The proposed project would comply with the permitted construction hours from 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays specified in the Specific Plan. No construction shall be permitted outside of these hours or on Sundays or federal holidays (Regulatory Compliance Measure NOI-1). The implementation of Mitigation Measure NOI-1 would further minimize construction-related noise to a less than significant impact.

Less Than Significant Impact.

Operational Noise.

Long-Term Off-Site Traffic Noise Impacts. The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to evaluate traffic noise in the vicinity of the project site. Table 4.11.L shows the modeled traffic noise levels under the existing (2019) year without and with the proposed project. Table 4.11.M shows the modeled traffic noise levels under the opening year (2021) conditions without and with the proposed project. These traffic noise levels are representative of a worst-case scenario that assumes a flat terrain and no shielding between the traffic and the noise contours. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix H.

As shown in Tables 4.11.L and 4.11.M, the modeled project-related traffic noise increase would be less than 3 dBA under both scenarios. Noise level increases less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, the proposed project's long-term off-site traffic noise impacts would be less than significant.

Project Land Use Compatibility. The proposed project's land use compatibility is based on the City's exterior and interior noise standards established in the Noise Element of the City's General Plan. The City's has an exterior noise standard for single-family and multifamily residences of 50 to 60 dBA CNEL and an interior noise standard of 45 to 55 dBA CNEL. While the 60 dBA CNEL is the upper limit for exterior noise, an interior noise standard of 45 dBA CNEL with windows closed was used to evaluate potential interior noise impacts. The proposed project's multifamily residences would be exempt from the City's exterior noise standards because the proposed upper floor balconies would be 6 ft in depth or less. Although the City has not adopted exterior noise standards for hotels, movie theaters, and commercial uses, the City has established an interior noise standard of 45 dBA CNEL for hotels and movie theaters and an interior noise standard of 55 dBA CNEL for commercial retail and restaurant uses.

Table 4.11.N shows the modeled exterior and interior traffic noise levels under the Opening Year (2021) with project scenario at each modeled on-site receptor. Although the proposed project may be exposed to intermittent noise levels from parking activities at adjacent land uses and events at the Los Alamitos Race Course, the intermittent noise levels would not be high or frequent enough to contribute to the CNEL level. The interior noise levels were calculated from the exterior noise levels by applying an exterior-to-interior noise level reduction of 24 dBA (USEPA 1978) based on standard construction in Southern California with window and doors closed. Traffic noise levels at Receptors R-5 through R-7 shown in Table 4.11.N are considered conservative because noise attenuation provided by the proposed buildings was not factored in and traffic noise levels would be lower. Figure 4.11.1 shows the noise monitoring locations and the locations of the modeled receptors.

Table 4.11.N shows that the modeled traffic noise levels under the Opening Year (2021) with project scenario at the modeled on-site receptors representing the apartment, hotel, movie theater, and commercial uses would not exceed their respective interior noise standards. As discussed above, the exterior noise standards for the multifamily residences are not applicable because the proposed balconies would be 6 ft in depth or less. Therefore, the proposed uses on the project site would be compatible with surrounding uses based on the noise standards established by the City. Therefore, the proposed project would result in the development of land uses consistent with the City's noise standards and long-term on-site traffic noise impacts would be less than significant.

Long-Term Stationary-Source Noise Impacts. The proposed project would include several on-site stationary noise sources, such as truck delivery and truck unloading activities, HVAC equipment, trash pick-up/compactor operations, and parking lot activities.

Table 4.11.L: Existing (2019) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Condition (dBA)
Cerritos Avenue west of Los Alamitos Boulevard	22,200	< 50	107	225	67.6	22,200	< 50	107	225	67.6	0.0
Cerritos Avenue from Los Alamitos Boulevard to Bloomfield Street	25,660	< 50	95	200	66.8	25,660	< 50	95	200	66.8	0.0
Cerritos Avenue from Bloomfield Street and Denni Street	26,255	59	119	251	68.3	26,255	59	119	251	68.3	0.0
Cerritos Avenue from Denni Street and Moody Street	27,365	72	147	314	69.8	27,365	72	147	314	69.8	0.0
Cerritos Avenue from Moody Street and Walker Street	30,485	76	158	337	70.2	30,565	76	158	337	70.2	0.0
Cerritos Avenue from Walker Street and Valley View Street	27,125	73	147	312	69.3	27,285	74	148	313	69.4	0.1
Cerritos Avenue east of Valley View Street	21,190	62	125	265	68.6	21,350	62	125	266	68.7	0.1
Los Alamitos Boulevard north of Cerritos Avenue	17,390	< 50	80	157	64.4	17,580	< 50	80	158	64.4	0.0
Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue	25,125	< 50	98	198	66.0	25,300	< 50	98	199	66.0	0.0
Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue	33,830	63	116	241	67.3	34,070	63	117	242	67.3	0.0
Los Alamitos Boulevard south of Farquhar Avenue	35,980	64	121	251	67.5	36,220	65	121	252	67.6	0.1
Bloomfield Street north of Cerritos Avenue	12,950	< 50	76	158	65.2	13,030	< 50	77	159	65.3	0.1
Bloomfield Street from Cerritos Avenue to Katella Avenue	11,990	< 50	73	150	64.9	12,070	< 50	73	151	64.9	0.0
Denni Street north of Cerritos Avenue	7,660	< 50	< 50	90	62.0	7,740	< 50	< 50	91	62.0	0.0
Lexington Drive from Cerritos Avenue to Katella Avenue	4,825	< 50	< 50	65	61.0	4,950	< 50	< 50	67	61.1	0.1
Moody Street north Cerritos Avenue	10,410	< 50	67	137	64.3	10,490	< 50	67	138	64.3	0.0
Walker Street north of Cerritos Avenue	15,900	< 50	87	181	66.1	16,060	< 50	87	182	66.2	0.1
Walker Street from Cerritos Avenue to Katella Avenue	19,850	< 50	99	209	67.1	20,295	< 50	101	212	67.2	0.1
Valley View Street north of Cerritos Avenue	37,440	90	182	387	70.4	37,770	91	183	389	70.4	0.0
Valley View Street from Cerritos Avenue to Katella Avenue	38,235	91	185	392	70.5	38,565	92	186	394	70.5	0.0

Table 4.11.L: Existing (2019) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Condition (dBA)
Valley View Street from Katella Avenue to Orangewood Avenue	51,485	109	224	477	71.8	51,965	109	225	480	71.8	0.0
Valley View Street south of Orangewood Avenue	42,570	97	198	421	71.0	43,050	98	199	424	71.0	0.0
Katella Avenue from I-605 Ramps to Wallingsford Road	49,955	90	182	385	70.4	50,750	91	184	389	70.4	0.0
Katella Avenue from Wallingsford Road to Los Alamitos Road	44,415	85	169	357	69.9	45,215	85	171	361	69.9	0.0
Katella Avenue from Los Alamitos Road to Bloomfield Street	38,980	79	155	327	69.3	40,185	80	158	334	69.4	0.1
Katella Avenue from Bloomfield Street to Denni Street/Lexington Drive	37,135	77	151	317	69.1	38,465	78	154	324	69.2	0.1
Katella Avenue from Denni Street/Lexington Drive to Cottonwood Way	37,390	77	151	318	69.1	38,930	79	155	327	69.3	0.2
Katella Avenue from Cottonwood Way to Siboney Street	37,940	78	153	321	69.2	39,525	79	157	330	69.4	0.2
Katella Avenue from Siboney Street to Winners Circle	37,460	77	151	319	69.1	39,105	79	156	328	69.3	0.2
Katella Avenue from Winners Circle to Walker Street	37,610	77	152	320	69.1	39,230	79	156	329	69.3	0.2
Katella Avenue from Walker Street to Valley View Street	43,675	99	201	428	71.1	44,810	100	205	435	71.2	0.1
Katella Avenue east of Valley View Street	30,070	80	159	334	69.4	30,400	81	160	337	69.5	0.1
Siboney Street north of Katella Avenue	3,130	< 50	< 50	< 50	53.8	3,810	< 50	< 50	< 50	54.7	0.9
Winners Circle north of Katella Avenue	1,960	< 50	< 50	< 50	53.6	2,950	< 50	< 50	< 50	55.4	1.8

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
I-605 = Interstate 605

Table 4.11.M: Opening Year (2021) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Condition (dBA)
Cerritos Avenue west of Los Alamitos Boulevard	23,370	< 50	110	233	67.8	23,370	< 50	110	233	67.8	0.0
Cerritos Avenue from Los Alamitos Boulevard to Bloomfield Street	26,480	< 50	97	204	66.9	26,480	< 50	97	204	66.9	0.0
Cerritos Avenue from Bloomfield Street and Denni Street	27,085	60	121	257	68.4	27,085	60	121	257	68.4	0.0
Cerritos Avenue from Denni Street and Moody Street	28,405	73	151	321	69.9	28,405	73	151	321	69.9	0.0
Cerritos Avenue from Moody Street and Walker Street	31,680	78	162	345	70.4	31,760	78	162	346	70.4	0.0
Cerritos Avenue from Walker Street and Valley View Street	28,065	75	151	319	69.5	28,220	75	151	320	69.5	0.0
Cerritos Avenue east of Valley View Street	22,050	63	128	272	68.8	22,210	63	129	273	68.8	0.0
Los Alamitos Boulevard north of Cerritos Avenue	17,940	< 50	81	160	64.5	18,110	< 50	81	161	64.5	0.0
Los Alamitos Boulevard from Cerritos Avenue to Katella Avenue	26,190	< 50	100	204	66.2	26,360	< 50	100	205	66.2	0.0
Los Alamitos Boulevard from Katella Avenue to Farquhar Avenue	34,605	63	118	244	67.4	34,850	63	118	245	67.4	0.0
Los Alamitos Boulevard south of Farquhar Avenue	36,790	65	122	254	67.6	37,030	65	123	255	67.7	0.1
Bloomfield Street north of Cerritos Avenue	13,230	< 50	77	160	65.3	13,310	< 50	78	161	65.4	0.1
Bloomfield Street from Cerritos Avenue to Katella Avenue	12,260	< 50	74	153	65.0	12,345	< 50	74	153	65.0	0.0
Denni Street north of Cerritos Avenue	8,390	< 50	< 50	96	62.4	8,470	< 50	< 50	96	62.4	0.0
Lexington Drive from Cerritos Avenue to Katella Avenue	5,850	< 50	< 50	74	61.9	5,970	< 50	< 50	75	62.0	0.1
Moody Street north Cerritos Avenue	10,860	< 50	69	141	64.5	10,940	< 50	69	142	64.5	0.0
Walker Street north of Cerritos Avenue	16,440	< 50	88	185	66.3	16,600	< 50	89	186	66.3	0.0
Walker Street from Cerritos Avenue to Katella Avenue	20,645	< 50	102	215	67.3	21,085	< 50	103	218	67.3	0.0
Valley View Street north of Cerritos Avenue	38,760	92	186	395	70.5	39,070	93	187	398	70.6	0.1
Valley View Street from Cerritos Avenue to Katella Avenue	39,625	93	189	401	70.6	39,940	94	190	403	70.7	0.1

Table 4.11.M: Opening Year (2021) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Condition (dBA)
Valley View Street from Katella Avenue to Orangewood Avenue	53,000	111	228	487	71.9	53,485	111	229	489	71.9	0.0
Valley View Street south of Orangewood Avenue	43,810	99	202	429	71.1	44,300	100	203	432	71.1	0.0
Katella Avenue from I-605 Ramps to Wallingsford Road	51,410	92	185	393	70.5	52,205	92	187	397	70.6	0.1
Katella Avenue from Wallingsford Road to Los Alamitos Road	45,780	86	172	364	70.0	46,575	87	174	368	70.1	0.1
Katella Avenue from Los Alamitos Road to Bloomfield Street	40,260	80	158	334	69.4	41,470	81	161	341	69.6	0.2
Katella Avenue from Bloomfield Street to Denni Street/Lexington Drive	38,610	78	154	325	69.3	39,940	80	158	333	69.4	0.1
Katella Avenue from Denni Street/Lexington Drive to Cottonwood Way	39,535	79	157	330	69.4	41,290	81	161	340	69.5	0.1
Katella Avenue from Cottonwood Way to Siboney Street	40,305	80	159	335	69.4	41,875	82	162	343	69.6	0.2
Katella Avenue from Siboney Street to Winners Circle	40,185	80	158	334	69.4	41,820	82	162	343	69.6	0.2
Katella Avenue from Winners Circle to Walker Street	40,250	80	158	334	69.4	41,865	82	162	343	69.6	0.2
Katella Avenue from Walker Street to Valley View Street	45,915	102	208	442	71.3	47,040	103	211	450	71.4	0.1
Katella Avenue east of Valley View Street	30,950	81	161	341	69.6	31,270	82	162	343	69.6	0.0
Siboney Street north of Katella Avenue	3,540	< 50	< 50	< 50	54.3	4,210	< 50	< 50	< 50	55.1	0.8
Winners Circle north of Katella Avenue	2,150	< 50	< 50	< 50	54.0	3,130	< 50	< 50	< 50	55.7	1.7

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
I-605 = Interstate 605

Table 4.11.N: Noise Impact Analysis

Receptor No.	Use	Exterior Noise Level	Exterior Noise Standard	Interior Noise Level	Interior Noise Standard	Exceed Noise Standard?
		(dBA CNEL)				
R-1	Hotel	66.8	--[1]	42.8	45	No
R-2	Hotel	66.9	--	42.9	45	No
R-3	Hotel	66.2	--	42.2	45	No
R-4	Multifamily Residence	60.5	N/A[2]	36.5	45	No
R-5	Multifamily Residence	59.7	N/A	35.7	45	No
R-6	Multifamily Residence	57.4	N/A	33.4	45	No
R-7	Multifamily Residence	55.4	N/A	31.4	45	No
R-8	Commercial	69.5	--	45.5	55	No
R-9	Commercial	66.7	--	42.7	55	No
R-10	Commercial	63.4	--	39.4	55	No
R-11	Movie Theater	59.8	--	35.8	45	No

Source: Compiled by LSA (2019).

[1] No exterior noise standard for this use.

[2] N/A = Not Applicable. The multifamily residences are exempt from the City's exterior noise standard because the balconies would be 6 ft in depth or less.

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

Truck Delivery and Truck Unloading Activities. The proposed project would include two truck loading docks, one on the northeast corner of the project site and the other on the southeastern corner of the project site. Noise sources at loading docks may include maneuvering and idling trucks, truck refrigeration units, forklifts, banging and clanging of equipment (i.e., handcarts and roll-up doors), noise from public address systems, and voices of truck drivers and employees. Although a typical truck unloading process takes an average of 15 to 20 minutes, the maximum loading and unloading noise level for each truck delivery occurs in a much shorter time period (at most 5 minutes). In addition, maximum noise levels of slow-moving heavy and small trucks at the loading areas range between 70 and 73 dBA at 50 ft. The maximum noise level associated with loading docks is typically 76.5 dBA at 50 ft.

City of Cypress. The closest off-site residences in the City of Cypress (Noise Zone 2) are located approximately 1,400 ft west of the proposed truck loading docks. At this distance, noise levels generated from truck delivery and unloading activities would be attenuated by 28.5 dBA compared to the noise levels at 50 ft from the source. The residences would also be shielded by intervening buildings that would provide a minimum noise attenuation of 10 dBA. Noise associated with the on-site truck delivery and unloading activities would be 38 dBA L_{max} (i.e., 76.5 dBA - 28.5 dBA - 10.0 dBA= 38.0 dBA). This noise level would not exceed the City of Cypress daytime and nighttime exterior 5-minute noise standard of 70 dBA and 65 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the United States Environmental Protection Agency's (USEPA) Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels at the closest residences to the west of the loading docks would be 14 dBA L_{max} (38 dBA – 24 dBA = 14 dBA). This noise level would not exceed the City of Cypress daytime and nighttime interior 5-minute noise standard of 55 dBA and 45 dBA, respectively.

City of Los Alamitos. The closest residences and office/commercial uses in the City of Alamitos are located approximately 415 ft and 200 ft south from the proposed truck loading docks, respectively. At the distances of 415 ft and 200 ft, noise levels generated from the truck delivery and unloading activities would be attenuated by 18.5 dBA and 12.5 dBA, respectively, compared to the noise levels at 50 ft from the source. The residences would also be shielded by intervening buildings that would provide a minimum noise attenuation of 10 dBA. Noise associated with the on-site truck delivery and unloading activities would be 48 dBA L_{max} (i.e., 76.5 dBA - 18.5 dBA - 10.0 dBA = 48.0 dBA) at the closest residences and 64 dBA (76.5 dBA - 12.5 dBA = 64.0 dBA) at the closest office/commercial use. Noise levels at the closest residences would not exceed the City of Los Alamitos daytime and nighttime exterior 5-minute noise standard of 65 dBA and 60 dBA, respectively. Noise levels at the closest office and commercial use would not exceed the City of Los Alamitos exterior 5-minute noise standard of 65 dBA and 70 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the USEPA's Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels would be 24 dBA L_{max} (48 dBA – 24 dBA = 24 dBA) at the closest residences and 40 dBA (64 dBA – 24 dBA = 40 dBA) at the closest office/commercial use. Noise levels would not exceed the City of Los Alamitos daytime and nighttime interior 5-minute noise standard of 55 dBA and 45 dBA, respectively, for residences. In addition, noise levels would not exceed the City of Los Alamitos interior 5-minute noise standard of 55 dBA for office and commercial uses.

The proposed project would not require a substantial amount of truck deliveries and noise generated by these activities is expected to be less than significant. Therefore, the proposed project's off-site noise impacts from on-site truck delivery and unloading activities would be less than significant.

HVAC Equipment. The proposed project would require the use of rooftop heating, ventilation, and air conditioning (HVAC) units for the proposed buildings. Noise generated from HVAC units could impact sensitive receptors within the vicinity of the project site by exceeding the City's daytime and nighttime exterior noise standard. However, noise levels from HVAC equipment would be minimized with compliance with Section 3.11.100(b) in the City's Municipal Code (Regulatory Compliance Measure NOI-2), which requires that mechanical equipment in residential, commercial, and industrial zoning districts be enclosed within a structure or completely screened from the view of surrounding properties by the use of a fence or wall. Mitigation Measure NOI-2, which would require the project Applicant/Developer to demonstrate, to the satisfaction of the City of Cypress Community Development Department, that on-site stationary noise sources, such as rooftop air conditioners, compliance with City noise standards as stated in the City's Municipal Code Sections 13-68 and 13-69 would further minimize noise generated from HVAC units. Therefore, the noise levels generated by the proposed project's HVAC equipment would be less than significant with adherence to Section 3.11.100(b) and Sections 13-68 and 13-69 in the City's Municipal Code.

Trash Pick-Up/Compactor Operations. The proposed project would have trash pick-up at various locations on the project site. The multifamily residential building would include a trash compactor in a fully enclosed and dedicated room inside the building. Therefore, this noise analysis evaluates noise generated at trash pick-up locations at various locations on the project site only because noise generated from the trash compactor would not result in noise impacts. Trash pick-up activities would last approximately 3 minutes and would generate a maximum noise level of 73.4 dBA L_{max} at 50 ft.

City of Cypress. The closest residences in the City of Cypress (Noise Zone 2) are located approximately 950 ft west of the nearest proposed trash pick-up area on the project site. At this distance, noise levels generated from trash pick-up operations would be attenuated by 25.4 dBA compared to the noise levels at 50 ft from the source. The residences would be shielded by intervening buildings that would provide a minimum noise attenuation of 10 dBA. Noise associated with trash pick-up would be 38 dBA L_{max} (i.e., 73.4 dBA – 25.4 dBA – 10.0 dBA= 38.0 dBA). This noise level would not exceed the City of Cypress daytime and nighttime exterior 5-minute noise standards of 65 dBA and 60 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the USEPA's Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels would be 14 dBA L_{max} (38 dBA – 24 dBA = 14 dBA). This noise level would not exceed the City of Cypress daytime and nighttime interior 5-minute noise standard of 55 dBA and 45 dBA, respectively.

City of Los Alamitos. The closest residences and office/commercial uses in the City of Los Alamitos are located approximately 415 ft and 220 ft from the nearest proposed trash pick-up areas. At the distance of 415 ft and 220 ft, noise levels generated from trash pick-up operations would be attenuated by 18.4 dBA and 12.4 dBA, respectively, compared to the noise levels at 50 ft from the source. The residences would be shielded by intervening buildings that would provide a minimum

noise attenuation of 10 dBA. Noise associated with trash pick-up would be 45 dBA L_{max} (i.e., 73.4 dBA – 18.4 dBA – 10.0 dBA = 45.0 dBA) at the closest residences and 61 dBA L_{max} (i.e., 73.4 dBA – 12.4 dBA = 61.0 dBA) at the closest office/commercial uses. Noise levels at the closest residence would not exceed the City of Los Alamitos daytime and nighttime exterior 5-minute noise standard of 65 dBA and 60 dBA, respectively. Noise levels at the closest office and commercial use would not exceed the City of Los Alamitos exterior 5-minute noise standard of 65 dBA and 70 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the USEPA's Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels would be 21 dBA L_{max} (45 dBA – 24 dBA = 21 dBA) at the closest residence and 37 dBA (61 dBA – 24 dBA = 37 dBA) at the closest office/commercial use. Noise levels would not exceed the City of Los Alamitos daytime and nighttime interior 5-minute noise standard of 55 dBA and 45 dBA, respectively, for residences. In addition, noise levels would not exceed the City of Los Alamitos interior 5-minute noise standard of 55 dBA for office and commercial uses.

The proposed project would be required to comply with Section 3.10.070(C) of the City's Municipal Code, which limits trash collection and deliveries in a commercial zoning district to the hours of 5:00 a.m. to 6:00 p.m. Monday through Saturday. For commercial zoning districts that are within 200 ft of residential zoning districts, trash collection is limited to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday (Regulatory Compliance Measure NOI-3). Therefore, noise generated from the proposed project's trash collection would be less than significant.

Surface Parking Lot Activities. The proposed project would include designated surface parking areas. Instantaneous maximum sound levels generated by parking activities include car door slamming, engine starting up, cars passing, and conversations in parking areas could be an annoyance to adjacent sensitive receptors. Peak noise levels generated by parking lot activities can range from 61.4 dBA to 74 dBA L_{max} at 25 ft.

City of Cypress. The closest residences in the City of Cypress (Noise Zone 2) are located approximately 880 ft west from the nearest proposed hotel parking lots on the project site. At the distance of 880 ft, noise levels generated from parking activities would be attenuated by 30.9 dBA compared to the noise levels at 25 ft from the source. Noise levels generated by parking activities would reach 43.1 dBA L_{max} (i.e., 74 dBA – 30.9 dBA = 43.1 dBA). This noise level would not exceed the City of Cypress daytime and nighttime exterior maximum noise standards of 80 dBA and 75 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the USEPA's Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels would be 19.1 dBA L_{max} (43.1 dBA – 24 dBA = 19.1 dBA). This noise level would not exceed the City of Cypress daytime and nighttime maximum interior noise standards of 65 dBA and 55 dBA, respectively.

City of Los Alamitos. The closest residences and office/commercial uses in the City of Los Alamitos are located approximately 388 ft and 145 ft south of the nearest proposed parking lots on the project site. At the distances of 388 ft and 145 ft, noise levels generated from parking activities would be attenuated by 23.8 dBA and 15.3 dBA, respectively, compared to the noise levels at 25 ft from the source. Noise levels generated by parking activities would reach 50.2 dBA L_{max} (74 dBA – 23.8 dBA = 50.2 dBA) at the closest residences and 58.7 dBA L_{max} (74 dBA – 15.3 dBA = 58.7 dBA) at

the closest office/commercial use. Noise levels at the closest residences would not exceed the City of Los Alamitos daytime and nighttime maximum exterior noise standards of 75 dBA and 70 dBA, respectively. Noise levels at the closest office and commercial uses would not exceed the City of Los Alamitos exterior maximum noise standards of 75 dBA and 80 dBA, respectively. Assuming an exterior-to-interior reduction of 24 dBA with windows and doors closed based on the USEPA's Protective Noise Levels (1978) and standard construction for Southern California (warm climate), interior noise levels would be 26.2 dBA L_{max} (50.2 dBA – 24 dBA = 26.2 dBA) at the closest residences and 34.7 dBA L_{max} (58.7 dBA – 24 dBA = 34.7 dBA) at the closest office/commercial uses. Noise levels would not exceed the City of Los Alamitos daytime and nighttime maximum interior noise standards of 65 dBA and 55 dBA, respectively, for residences. In addition, noise levels would not exceed the City of Los Alamitos maximum interior noise standards of 65 dBA for office and commercial uses. Therefore, noise from parking lot activities under the proposed project would be less than significant.

With adherence to the regulatory standards outlined in Regulatory Compliance Measures NOI-1, NOI-2, and NOI-3, the noise levels of these stationary activities have the potential to exceed applicable noise standards for the Cities of Cypress and Los Alamitos. However, with the incorporation of Mitigation Measure NOI-2, impacts to ambient noise levels in the area would be reduced to less than significant levels. Therefore, with mitigation incorporated, impacts related to operational noise from stationary sources would be less than significant.

Threshold 4.11.2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant with Mitigation Incorporated. Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. Ground-borne vibration from construction activities associated with the proposed project would cause intermittent and temporary vibration events. Construction activities during the site preparation, grading, and paving phase would have the potential to generate ground-borne vibration. Construction equipment that would generate vibration levels during these phases of construction would include pile driving, large bulldozers, loaded trucks, and jack hammers. Pile driving using the Geopiers system would generate a vibration level of 95 vibration velocity decibels (VdB) (0.22 peak particle velocity [PPV] inches per second [inch/sec]) at 15 ft. Ground-borne vibration levels generated from large bulldozers, loaded trucks, and jack hammers during project construction were estimated using reference vibration levels from the FTA's 2018 *Transit Noise and Vibration Impact Assessment Manual*. Large bulldozers, loaded trucks, and jack hammers would generate a vibration level of 87 VdB (0.087 PPV [inch/sec]), 86 VdB (0.076 PPV [inch/sec]), and 79 VdB (0.035 PPV [inch/sec]), respectively.

Table 4.11.O show the vibration levels at the closest residential, church, office, and commercial building from each type of construction equipment. Other buildings in the vicinity of the project site are located further away and would experience lower vibration levels. As shown in Table 4.11.O, vibration levels generated during project construction would not result in a community annoyance because vibration levels would not exceed the FTA community annoyance threshold of 84 VdB for office and commercial uses, 78 VdB for residences during daytime hours, and 75 VdB for

Table 4.11.O: Construction Vibration Levels

Land Use	Direction	Equipment/	Reference Vibration Level (VdB)	Reference Vibration Level (PPV)	Reference Vibration Distance (ft)	Distance (ft)[1]	Maximum Vibration Level (VdB)	Maximum Vibration Level (PPV)
Commercial	West	Pile Driving[1]	95	0.220	15	170	63	0.006
		Large Bulldozers	87	0.089	25	155	63	0.006
		Loaded Trucks	86	0.076	25	155	62	0.005
		Jack Hammer	79	0.035	25	155	55	0.002
Church	West	Pile Driving[1]	95	0.220	15	465	50	0.001
		Large Bulldozers	87	0.089	25	465	49	0.001
		Loaded Trucks	86	0.076	25	465	48	0.001
		Jack Hammer	79	0.035	25	465	41	0.000
Residential	West	Pile Driving[1]	95	0.220	15	900	42	0.000
		Large Bulldozers	87	0.089	25	890	40	0.000
		Loaded Trucks	86	0.076	25	890	39	0.000
		Jack Hammer	79	0.035	25	890	32	0.000
Office/ Commercial	South	Pile Driving[1]	95	0.220	15	220	60	0.004
		Large Bulldozers	87	0.089	25	130	66	0.008
		Loaded Trucks	86	0.076	25	130	65	0.006
		Jack Hammer	79	0.035	25	130	58	0.003
Residential	South	Pile Driving[1]	95	0.220	15	425	51	0.001
		Large Bulldozers	87	0.089	25	350	53	0.002
		Loaded Trucks	86	0.076	25	350	52	0.001
		Jack Hammer	79	0.035	25	350	45	0.001
Commercial	East	Pile Driving[1]	95	0.220	15	480	50	0.001
		Large Bulldozers	87	0.089	25	65	75	0.021
		Loaded Trucks	86	0.076	25	65	74	0.018
		Jack Hammer	79	0.035	25	65	67	0.008

Source: Compiled by LSA Associates, Inc. (2019).
Note: The FTA-recommended building damage threshold is 94 VdB (0.2 PPV [inch/sec]) at the receiving structure or building.
[1] Piles would be installed using the Geopiers system.
ft = foot/feet
FTA = Federal Transit Administration
inch/sec = inch/inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

institutional land uses. In addition, vibration levels would not result in building damage because vibration levels would not exceed the FTA's damage threshold of 94 VdB (0.2 PPV [inch/sec]) and nearby buildings were observed to be constructed of non-engineered timber and masonry. The project construction contractor would be required implement Mitigation Measure NOI-1 to further minimize construction-related vibration. Therefore, ground-borne vibration and ground-borne noise levels generated by project construction activities would be less than significant with the implementation of mitigation measures.

The proposed project would not generate ground-borne vibration or ground-borne noise levels during long-term operations. In addition, vibration levels generated from project-related traffic on the adjacent roadway (Katella Avenue) are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, operation of the proposed project would not result in excessive ground-borne vibration or ground-borne noise levels, and no mitigation is required.

Threshold 4.11.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. The closest airport to the project site is the JFTB Los Alamitos, located approximately 0.5 mile south of the project site. According to the *Airport Environs Land Use Plan for JFTB Los Alamitos* and Exhibit SAF-8 in the Safety Element of the City's General Plan, the project site is within the 60 dBA CNEL noise contour, but outside of the 65 dBA CNEL noise contour for JFTB Los Alamitos. Although the project site is located within Noise Impact Zone 2 (moderate noise impact), it is outside of Noise Impact Zone 1 (high noise impact) defined by the Airport Environs Land Use Plan.

The second closest airport is the Long Beach Municipal Airport, located approximately 5.4 miles northwest of the project site. According to the Los Angeles County Airport Land Use Plan, the project site is located outside of the 65 dBA CNEL noise contour for the Long Beach Municipal Airport. Therefore, aircraft noise generated from the two closest airports would not expose people residing or working on the project site to excessive noise levels due to the proximity of a public airport. This noise impact would be less than significant, and no mitigation is required.

4.11.6 Level of Significance Prior to Mitigation

Prior to the implementation of mitigation measures, the project could potentially result in the generation of a substantial increase in ambient noise levels in the vicinity of the project in excess of established noise standards during construction and operation. The project would result in less than significant impacts related to ground-borne vibration and ground-borne noise levels and to the exposure of people to excessive noise levels within the vicinity of an airport or private airstrip.

4.11.7 Regulatory Compliance Measures and Mitigation Measures

4.11.7.1 Regulatory Compliance Measures

The following regulatory compliance measures are applicable to the proposed project.

Regulatory Compliance Measure NOI-1 The construction contractor shall limit all construction-related activities to between the hours 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. No construction shall be permitted outside of these hours or on Sundays or a federal holiday.

Regulatory Compliance Measure NOI-2 Mechanical equipment, including air conditioning units in residential, commercial, and industrial zoning districts, shall be enclosed within a structure or completely screened from view from surrounding properties by the use of a fence or wall consistent with Section 3.11.100(b) of the City of Cypress Municipal Code.

Regulatory Compliance Measure NOI-3 Trash collection and compacting shall be limited to between the hours of 5:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts and between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts that are within 200 feet of residential zoning districts, consistent with Section 3.10.070(C) of the City of Cypress Municipal Code.

4.11.7.2 Mitigation Measures

The following mitigation measures are applicable to the proposed project.

Mitigation Measure NOI-1 Prior to the issuance of a grading permit, the construction contractor shall demonstrate, to the satisfaction of the City of Cypress Director of Community Development, or designee, the following:

- Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.
- Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from noise-sensitive receptors.
- All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners and residents to contact the job superintendent with concerns. If the developer receives a noise related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request.

Mitigation Measure NOI-2 Prior to the issuance of building permits, the project Applicant/Developer shall demonstrate, to the satisfaction of the City of Cypress Director of Community Development, or designee, that on-site stationary noise sources, such as rooftop air conditioners, shall not exceed City noise standards as stated within the City's Municipal Code Sections 13-68 and 13-69.

4.11.8 Level of Significance after Mitigation

With the implementation of mitigation measures, all impacts would be reduced to a less than significant level.

4.11.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. A cumulative noise or vibration impact would occur if multiple sources of noise and vibration combine to create impacts in close proximity to a sensitive receptor. Therefore, the cumulative area for noise and vibration impacts is the project site and any sensitive receptors in the immediately surrounding area.

Less Than Significant with Mitigation Incorporated.

Construction Noise. Construction activities associated with the proposed project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to each construction site. Construction noise for the proposed project was determined to be less than significant with the implementation of Mitigation Measure NOI-1, which requires compliance with the construction hour restrictions specified in the Specific Plan. Cumulative development in the vicinity of the project site could result in elevated construction noise levels at sensitive receptors in the area surrounding the project site. However, each project would be required to comply with the applicable city's Municipal Code limitations on construction. Therefore, cumulative construction noise impacts would be less than significant with the implementation of Mitigation Measure NOI-1.

Less Than Significant Impact.

Operational Stationary Source Noise. Long-term stationary noise sources associated with the development at the proposed project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the proposed project and related projects together could result in higher noise levels than considered separately. As previously described, on-site noise sources associated with the proposed project would not exceed any applicable noise standards. Additionally, each of the related projects would be required to comply with the city's noise level standards and include mitigation measures if standards are exceeded. Therefore, cumulative noise impacts from stationary noise sources would be less than significant.

Operational Traffic Source Noise Impacts. According to the USEPA's, cumulative noise impacts represent the combined and incremental effects of human activities that accumulate over time. While the incremental impacts may be insignificant by themselves, the combined effect may result in a significant impact. Conversely, although there may be a significant noise increase due to the proposed project in combination with other related projects (combined effects), it must also be demonstrated that the project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed project.

Cumulative noise impacts would occur as a result of increased traffic volumes on local roadways due to future growth in the vicinity of the project site. A project's contribution to a cumulative traffic noise increase could be considered significant when the combined effect exceeds the perception level (i.e., auditory level increase) threshold. A cumulative significant impact would occur when the proposed project and related projects create a barely perceptible noise level increase of 3 dBA.

The *Traffic Impact Analysis* (LSA 2019 [Appendix J of this Draft EIR]) prepared for the proposed project includes a cumulative analysis of traffic impacts under the project opening year (2021) conditions, based on all of the related projects identified in Table 4.A, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, of this Draft EIR. Trip generation estimates for the related projects were obtained from the available approved traffic studies or from calculations based on applicable Institute of Transportation Engineers' (ITE) trip generation rates. Table D of the Traffic Impact Analysis summarizes the list of related projects and their respective trip generation estimates. Trip distribution for the related projects is based on the available approved traffic studies or has been estimated by LSA. Figure 9 in the Traffic Impact Analysis shows the locations of the related projects. Figure 10 in the Traffic Analysis shows the trips associated with the related projects at the study intersections.

The information in that cumulative traffic analysis was used to determine the "No Project" cumulative baseline for analyzing the proposed project's traffic noise impacts in 2021, as shown in Table 4.11.M. Table 4.11.M further shows that project-related traffic would result in small (1.7 dBA or less) noise level increases along roadway segments in the vicinity of the project site under the project opening year (2021) condition. Therefore, none of the roadway segments in the vicinity of the project site would experience a substantial noise level increase greater than the applicable noise thresholds and the proposed project would not have a cumulatively significant traffic noise impact.

4.12 POPULATION AND HOUSING

This section describes the existing population and housing characteristics in both the City of Cypress (City) and the County of Orange and evaluates the potential impacts of the Cypress City Center project (proposed project) on population and housing growth. This section is based on sources of demographic information provided by various agencies, including the Southern California Association of Governments (SCAG), the Cypress General Plan's Housing Element (2013), the California Department of Finance, and the United States Census Bureau.

4.12.1 Methodology

City and County demographic information was used to describe the existing population and housing characteristics in the City and County. SCAG projections for these topics were identified for the existing conditions and project build out. City goals and policies regarding population and housing were used to evaluate potential impacts that could result from implementation of the proposed project.

4.12.2 Existing Environmental Setting

4.12.2.1 Population and Housing Trends in the City and County

The City is characterized by urban areas, including single-family and multi-family residential uses and concentrations of retail, office, and industrial uses.

In its existing condition, the approximately 13-acre project site is characterized by a paved parking lot, with existing light poles and various electrical utility boxed and lines, and therefore, does not contain any population or housing.

SCAG, the regional planning agency for the six-county Southern California region that includes Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial counties, is responsible for preparing a regional growth forecast in conjunction with its efforts to prepare a Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for its regional planning area. The SCAG RTP/SCS Growth Forecast is meant to provide a common foundation for regional and local planning, policymaking, and infrastructure provision within the SCAG region. These projections are used as a reference point for discussing population and housing growth throughout this section.

The growth forecast for the City and County in the SCAG RTP/SCS Growth Forecast is provided below in Table 4.12.A. These projections are used as a reference point for discussing population and housing growth throughout this section.

4.12.2.2 Population

As shown in Table 4.12.A, according to the SCAG RTP/SCS Growth Forecast, the City's population was estimated to grow by approximately 0.6 percent (approximately 0.08 percent per year) between 2012 and 2020. The County was estimated to experience a higher population growth rate of approximately 6.5 percent (approximately 0.8 percent per year) increase between 2012 and 2020.

Table 4.12.A: 2016 SCAG Population and Housing Forecasts (2012–2040)

	2012	2020	2012–2020 Increase	% Change 2012–2020	2040	2020–2040 Increase	% Change 2020–2040	2012–2040 Increase
Total Population								
City of Cypress	48,500	48,800	300	0.6%	49,700	900	1.8%	1,200
Orange County	3,071,600	3,271,100	199,500	6.5%	3,461,500	190,400	5.8%	389,900
Total Households								
City of Cypress	15,700	15,900	200	1.3%	16,300	400	2.5%	600
Orange County	999,500	1,074,700	75,200	7.5%	1,152,300	77,600	7.2%	152,800

Southern California Association of Governments (SCAG). 2016. *2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction*. Website: https://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf (accessed December 9, 2019).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

The City's population is anticipated to increase by approximately 1.8 percent between 2020 and 2040, while the County's population is expected to grow by approximately 5.8 percent between 2020 and 2040. According to the State of California Department of Finance population estimates, the City's population in January 2019 was 49,833.[1] Therefore, the City's population growth between 2012 and 2019 (2.7 percent) appears to have substantially exceeded the growth forecast by SCAG for that period (0.6 percent).

4.12.2.3 Age Characteristics

A city's age distribution often shapes its housing demand because different age groups prefer different types of housing. According to the City of Cypress Housing Element, the City's population is aging. Table 4.12.B, below provides a comparison of the City's and County's population by age group using data from the 2013–2017 American Community Survey (ACS) 5-year estimate. According to the ACS data, the City's median age is 41.7 years, compared with 40.4 years from the 2008–2012 ACS 5-year estimate.[2] This increase in median age is consistent with County, State, and national trends.

[1] California Department of Finance. E-5 Population and Housing Estimates for Cities Counties, and the State 2011–2019 with 2010 Census Benchmark. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/e-5/ (accessed December 27, 2019).

[2] United States Census Bureau. American Community Survey 2008–2012 5-Year Estimate Table S0101. Website: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S0101&prodType=table (accessed December 27, 2019).

Table 4.12.B: City of Cypress and Orange County Age Characteristics (2013-2017)

Age Group	City of Cypress		Orange County	
	Persons	Percentage	Persons	Percentage
Under 18 Years	10,793	22.0%	716,767	22.7%
18 to 24 Years	4,819	9.8%	306,891	9.7%
25 to 44 Years	11,502	23.4%	869,275	27.6%
45 to 64 Years	15,099	30.8%	836,438	26.4%
65 and Over	6,895	14.0%	426,445	13.5%
Total	49,108	100%	3,155,816	100%
Median Age	41.7		37.5	

Source: United States Census Bureau. American Community Survey 2013-2017 5-Year Estimate Table S0101. Website: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S0101&prodType=table (accessed December 27, 2019).

As shown in Table 4.12.B, the City and County have similar proportions of residents under the age of 18 (22.0 percent and 22.7 percent, respectively) and between 18 and 24 years (9.8 percent and 9.7 percent, respectively). The City has a lower percentage of residents between the ages of 25 and 44 (23.4 percent, compared to 27.6 percent for the County). The City has a higher percentage of residents between the ages of 45 and 64 (30.8 percent, compared to 26.4 percent for the County) and a slightly higher percentage of residents older than age 65 (14.0 percent, compared to 13.5 percent for the County) than the County. Approximately 14 percent of Cypress residents are over age 65, an approximately 1 percent increase compared to the 2008–2012 ACS 5-year estimate.

Households.[1] As shown in Table 4.12.A, the City is anticipated to experience an approximately 1.3 percent (approximately 0.2 percent per year) increase in households between 2012 and 2020, while the number of households in the City is anticipated to increase approximately 2.5 percent between 2020 and 2040. The County was forecast to experience an approximately 7.5 percent (approximately 0.9 percent per year) increase in households between 2012 and 2020, followed by a 7.2 percent increase in households between 2020 and 2040. By forecasting a greater percentage of household growth than population growth, the SCAG growth forecast projects a decrease in the average household size in both the City and the County in coming years.

4.12.3 Regulatory Setting

4.12.3.1 Federal Regulations

There are no federal regulations applicable to the proposed project.

4.12.3.2 State Regulations

There are no State regulations applicable to the proposed project.

[1] The Southern California Association of Governments forecasts "households" rather than housing units. As defined by the United States Census Bureau, "households" are equivalent to occupied housing units.

4.12.3.3 Regional Regulations

Southern California Association of Governments. As the designated metropolitan planning organization (MPO)[1] for the six-county subregion that includes Orange County, SCAG prepares several plans to address regional growth, including the RTP/SCS. The regional growth forecasts undertaken by SCAG are developed for three planning horizons: 2020, 2035, and 2040. SCAG is mandated by federal and State law to research and draw up plans for transportation, growth management, hazardous waste management, and a regional growth forecast that is the foundation for these plans and regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG prepares several plans to address regional growth, including the Regional Comprehensive Plan and Guide, Regional Housing Needs Assessment (RHNA), the Regional Transportation Plan (RTP), the Regional Transportation Improvement Program (RTIP), and the annual State of the Region reports to measure progress toward achieving regional planning goals and policies.

Regional Transportation Plan/Sustainable Communities Strategy. The 2016–2040 RTP/SCS was adopted on April 7, 2016. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. On November 7, 2019, SCAG's Regional Council approved the 2020–2045 RTP/SCS (also known as the Draft Connect SoCal plan) for public review and comment. The Draft 2020-2045 RTP/SCS takes into account demographic and economic changes that have occurred since the adoption of the 2016–2040 RTP/SCS, including a declining birth rate, an aging population, and domestic outmigration. The RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The long-term vision will address regional transportation and land use challenges and opportunities.

The RTP/SCS includes:

- Visions, policies, and performance measures;
- Forecasts (e.g., population, households, employment, land use, and housing needs);
- A financial plan;
- A list of projects (to be initiated and/or completed by 2040); and
- An analysis of priority focus areas (e.g., goods movement and active transportation).

Regional Growth Forecast. The regional growth forecasts undertaken by SCAG are developed in 5-year increments through 2040. The 2016–2040 RTP/SCS Final Growth Forecasts were adopted in conjunction with the 2016–2040 RTP/SCS on April 7, 2016. SCAG recently released the 2020–2045 RTP/SCS Draft Growth Forecasts in conjunction with its efforts to prepare and adopt the 2020–2045 RTP/SCS. The projected growth in population, household, and employment is the data relied upon during development of SCAG's RTP, SCS, and the RHNA. Consistency with the growth forecast at the

[1] An MPO is a federally mandated and federally funded transportation policymaking organization that is made up of representatives from local government and governmental transportation authorities. In 1962, the United States Congress passed legislation that required the formation of an MPO for any urbanized area with a population greater than 50,000.

subregional level is one criterion that SCAG uses in exercising its federal mandate to review "regionally significant" development projects for conformity with regional plans.

Regional Housing Needs Assessment. Local jurisdictions are required by State law (Government Code Section 65580 et seq.) to plan for their fair share of projected housing construction needs in their region. Housing unit construction goals are set by the State Department of Housing and Community Development (HCD) and allocated to cities through regional planning agencies such as SCAG. This is called the RHNA. Future housing need refers to the proportion of the region's future housing needs allocated to a community. Each jurisdiction's future housing need is calculated in terms of four factors: (1) the number of units needed to accommodate forecast global household growth; (2) the number of units needed to replace demolition due to attrition in the housing stock (i.e., fire damage, obsolescence, redevelopment, and conversion to non-housing uses); (3) maintenance of an ideal vacancy rate for a well-functioning housing market; and (4) an adjustment to avoid an overconcentration of lower-income households in any one jurisdiction.

The RHNA prepared by SCAG defines the housing unit construction goals for the region. The City's fair share for the planning period between January 1, 2014, and October 1, 2021 (the last adopted RHNA period) was established by SCAG at 308 units. The RHNA target number was based on projected household growth and the resulting need for construction of additional housing units allocated over a 5- to 7-year planning period (2014–2021). This 308-unit share was divided into the following income groups according to median family income (MFI) as shown in Table 4.12.C, below:

Table 4.12.C: City of Cypress Regional Housing Need Allocation (2014–2021)

Income Level	Percent of Area MFI	No. of Units
Very Low	0–50%	71
Low	51–80%	50
Moderate	81–120%	56
Above Moderate	>120%	131

Source: City of Cypress 2014–2021 Housing Element Technical Report (2013), Table 2-25; SCAG Regional Housing Needs Assessment 2014–2021.

4.12.3.4 Local Regulations

City of Cypress Housing Element. The Housing Element is required by California State law to be a component of every city's General Plan because housing needs are recognized as a statewide concern. As such, the Housing Element of a jurisdiction's General Plan is the only element that is subject to approval by the State. Pursuant to State law, the Housing Element must identify the City's housing needs, the sites that can accommodate these needs, and the policies and programs to assure that the housing units necessary to meet these needs can be provided. The primary goal of the Housing Element is to provide a range of housing opportunities for all income groups.

In August 2013, the 2014–2021 Housing Element was adopted as a guide for housing within the City of Cypress. The Housing Element provides an indication of the need for housing in the community in terms of housing affordability, availability, adequacy, and accessibility. The Housing Element also provides a strategy to address housing needs and identifies a series of specific housing programs to

meet community needs. The following goals and policies are found in the City's Housing Element and are applicable to the proposed project:

Goal HOU-3: Encourage the provision of a wide range of housing by location, type of unit, and price to meet the existing and future needs of Cypress residents. Establish a balanced approach to meeting housing needs of both renter and owner households.

Policy HOU-3.6: Encourage use of sustainable and green building design in new and existing housing.

Goal HOU-4: Ensure the provision of adequate and appropriate housing sites through appropriate land use, zoning, and specific plan designations to accommodate the City's share of regional housing needs.

Policy HOU-6.3: Encourage the provision of adequate housing to meet the needs of families of all sizes.

4.12.4 Thresholds of Significance

The thresholds for population and housing impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to population and housing if it would:

Threshold 4.12.1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Threshold 4.12.2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

4.12.5 Project Impacts

Threshold 4.12.1: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

4.12.5.1 Direct Growth

Less Than Significant Impact. The proposed project includes the development of a four-story residential component with 251 market-rate apartment units. According to the 2010 Census, the average household size in the City was 3.02 persons per household. Based on that estimate, the proposed 251 apartment units would generate approximately 758 new residents. However, applying the City's average household size is likely to overestimate the population growth that would be attributable to the proposed project because higher density housing tends to attract smaller households. According to the United States Census Bureau's 2017 American Housing Survey (AHS), the average household size in structures that have 50 or more housing units (the highest housing

density type evaluated in the AHS) in the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area (MSA)—which includes Cypress—was 1.99 persons. By comparison, the 2017 AHS indicates that the average household size for single-family detached housing units in the Los Angeles-Long Beach-Anaheim MSA was 3.12 persons (more than 1.5 times the average household size for higher density housing). According to the 2010 5-Year ACS, 62.4 percent of Cypress's occupied housing units were single-family detached housing. In contrast, only 7 percent of the City's occupied housing units were in structures with 50 or more units during the same period. Therefore, the City's average household size is likely greatly skewed toward lower density housing that would result in larger households. Although the proposed project is likely to generate less than 758 new residents, the City's average household size has been applied to present a conservative analysis.

The project site is included in Planning Area 5 and is designated as Professional Office in the Amended and Restated Cypress Business and Professional Specific Plan; no residential uses were designated within Planning Area 5. Therefore, any population and housing growth anticipated as a result of the proposed project was not previously envisioned in the Specific Plan area. The proposed Specific Plan Amendment would divide Planning Area 5 into two planning areas (5A and 5B), with Planning Area 5B consisting of the project site. Land uses within Planning Area 5B would be designated for mixed-use commercial residential development.

As shown in Table 4.12.A, SCAG projects that the City of Cypress' population will increase by 1,200 from 2012 (48,500 persons) to 2040 (49,700 persons) and that the number of households will increase by 600 from 2012 (15,700 households) to 2040 (16,300 households). Because housing was not envisioned on the project site, the proposed project would increase the Cypress population by approximately 758 net new residents and the amount of housing units by 251 new dwelling units not previously assumed in the in the 2016 SCAG projections. The estimated increase in population from the proposed project accounts for 63.2 percent of the City's projected population growth from 2012 to 2040 and 41.8 percent of the City's projected household growth from 2012 to 2040.

Moreover, the City's estimated population was 49,833 in January 2019 according to Department of Finance population estimates. As such, the City's existing estimated population has already exceeded SCAG projections of 49,700 persons in 2040. The addition of 758 residents represents a population increase of approximately 1.5 percent over existing conditions as of January 2019. In addition, the estimated number of households in Cypress was 16,609 in 2019 according to Department of Finance housing estimates, which has also exceeded SCAG projections of 16,300 households by 2040; the addition of 251 units represents an increase of approximately 1.5 percent over existing conditions as of January 2019. However, the increases in population and housing resulting from the proposed project are considered significant because they would represent a substantial unplanned increase in population as discussed below.

SCAG recently updated its regional forecast in conjunction with its efforts to prepare and adopt the 2020–2045 RTP/SCS. Growth forecasts included in the Draft 2020–2045 RTP/SCS indicate that the City's population is projected to grow by 1,700 persons from 2016 to 2045 and the projected

population in the City is 51,300 persons in 2045.[1] If SCAG's updated growth forecast was used in this analysis instead of the 2016–2040 RTP/SCS Growth Forecast, the population increase of 758 residents as a result of the proposed project would be within these updated population projections.

Additionally, SCAG is in the process of developing the 6th cycle RHNA allocation plan, which will cover the planning period of October 2021 through October 2029, which is planned for adoption by SCAG in October 2020. SCAG's Draft RHNA Allocation Methodology, which is designed to allocate the final regional determination from HCD of 1,341,827 housing units by income categories to 197 local jurisdictions in the region was approved by the SCAG Regional Council at its meeting on November 7, 2019, and is under HCD review. According to SCAG's Draft RHNA Methodology Estimate Tool developed by SCAG pursuant to the Draft RHNA Allocation Methodology, the City of Cypress has a total estimated RHNA of 3,967 units (1,159 Very Low income, 662 Low Income, 629 Moderate Income, and 1,518 Above Moderate Income).[2] Therefore, the total RHNA for the City of Cypress would be much larger than the projected housing growth included in the Draft 2020–2045 RTP/SCS growth forecasts that indicate that the City's housing is projected to grow by 800 units from 2016 to 2045.[3] The market-rate housing units included in the proposed project would help the City meet the need for Above Moderate Income units included in the 6th cycle RHNA allocation. Because there is a need for additional housing over SCAG projections because the City is required by State law (Government Code Section 65580 et seq.) to plan for its fair share of projected housing construction needs in the City, the population growth as a result of the proposed project would not constitute substantial unplanned population growth in the area.

For all these reasons, the proposed project would not directly induce substantial unplanned population growth. Therefore, the proposed project's direct impact on population growth would be less than significant and no mitigation is required.

4.12.5.2 Indirect Growth

Less Than Significant Impact. The proposed project includes approximately 20,800 sf of retail uses, approximately 43,175 sf of movie theater uses, and approximately 75,600 sf of hotel uses. The proposed commercial/retail establishments would increase employment in the City, but the number of employees would not be substantial due to the limited size of the commercial/retail area. The movie theater and hotel uses are not expected to generate a substantial number of new employees considering the limited capacity of the hotel (120 rooms) and the limited number of jobs necessary for movie theater operations. In addition, it is anticipated that most of the new employees of the new establishments already live in the project vicinity and, in any event, virtually all of the employees would commute to work rather than moving to the project area. Therefore, the

1 SCAG. 2019a. Current Context, Demographics, and Growth Forecast Technical Report: Draft for Public Review and Comment. Website: https://connectsocal.org/Documents/Draft/dConnectSoCal_Demographics-And-Growth-Forecast.pdf (accessed December 12, 2019).

2 SCAG. 2019b. Regional Council Approved Draft RNA Methodology Estimate Tool. Website: http://www.scag.ca.gov/programs/Documents/RHNA/SCAG-RHNA-Methodology-Worksheet-Nov19-Adopted.xlsx (accessed December 31, 2019).

3 SCAG. 2019a. Current Context, Demographics, and Growth Forecast Technical Report: Draft for Public Review and Comment. Website: https://connectsocal.org/Documents/Draft/dConnectSoCal_Demographics-And-Growth-Forecast.pdf (accessed December 12, 2019) .

proposed project would not indirectly induce population growth related to the inclusion of commercial/retail uses.

The proposed project would not propose new roadways but would extend infrastructure (e.g., water facilities, sewer facilities, and energy services) to and within the project site. However, this infrastructure would not induce additional population growth because it would only serve the proposed project's residents, patrons, and employees and would not provide additional infrastructure capacity for other projects. Therefore, the development of the proposed project would not indirectly induce substantial population growth, and indirect impacts would be less than significant. No mitigation is required.

Threshold 4.12.2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. In the existing condition, the project site is a paved parking lot and therefore, does not contain any population or housing. The proposed project would not displace any existing housing or populations on the project site. Therefore, there would be no impact related to the displacement of substantial numbers of existing people or housing. No mitigation is required.

4.12.6 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts related to population and housing.

4.12.7 Regulatory Compliance Measures and Mitigation Measures

No regulatory compliance measures or mitigation measures are required.

4.12.8 Level of Significance after Mitigation

The proposed project would result in less than significant impacts related to population and housing.

4.12.9 Cumulative Impacts

The purpose of this section is to evaluate any additional incremental impact that the proposed project is likely to cause over and above the combined impacts of recently approved and proposed projects in the City. The impact area used to assess potential cumulative population and housing impacts is the City of Cypress because the proposed project would affect population, housing, and employment within the City. Implementation of the proposed project in conjunction with the 17 related projects identified in Table 4.A, Summary of Related Projects, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, would contribute to population and housing growth in the project vicinity. The related projects would include 625 residential units that could be constructed in several cities within Orange County, including 440 residential units in the City of Cypress. According to the 2010 Census, the average household size in Orange County was 2.99 persons (which is similar to the City of Cypress' average household size of 3.02). Based on the

County's average household size, and an average household size of 1.8 persons[1] for the senior housing units included in the Barton Place Mixed Use Project (Ovation) and 1 person per bed for the assisted living facility included in the Barton Place Mixed Use Project (Westmont). The combined construction of the related residential units would yield a total of approximately 1,338 new County residents. Construction of the proposed project and the related projects would result in a cumulative population increase of 2,095 new County residents (758 residents [proposed project] + 1,338 residents [related projects]).

The addition of 2,095 new residents would represent a small fraction (0.54 percent) of SCAG's forecasted County increase of 389,900 between 2012 and 2040 as shown in Table 4.12.A. However, if the proposed project and all 440 of the related residential units in the City of Cypress were constructed, the cumulative population increase of 1,552 residents in the City of Cypress (758 residents [proposed project] + 794 residents [related projects]) would be greater than the City's projected population increase of 1,200 between 2012 and 2040 as shown in Table 4.12.A utilizing the 2016–2040 RTP/SCS Growth Forecasts.

As discussed above, SCAG recently updated its regional forecast in conjunction with its efforts to prepare and adopt the 2020–2045 RTP/SCS. Growth forecasts included in the Draft 2020–2045 RTP/SCS indicate that the City's population is projected to grow by 1,700 persons from 2016 to 2045.[2] If SCAG's updated growth forecast was used in this analysis instead of the 2016–2040 RTP/SCS Growth Forecast, the City's cumulative population increase of 1,552 residents, described above, would be within these updated population projections.

Additionally, as discussed above, according to SCAG's Draft RHNA Methodology Estimate Tool, the City of Cypress has a total estimated RHNA of 3,967 units (1,159 Very Low income, 662 Low Income, 629 Moderate Income, and 1,518 Above Moderate Income).[3] Therefore, the total RHNA for the City of Cypress would be much larger than the projected housing growth included in the Draft 2020–2045 RTP/SCS growth forecasts that indicate that the City's housing is projected to grow by 800 units from 2016 to 2045.[4] The housing units included in the proposed project and related projects would help the City meet the need for the 3,967 units included in the 6th cycle RHNA allocation. Because there is a need for additional housing over SCAG projections because the City is required by State law (Government Code Section 65580 et seq.) to plan for its fair share of projected housing construction needs in its region, the population growth as a result of the proposed project would

1 Due to the older demographics associated with a senior residential community, the Barton Place EIR assumed that approximately 80 percent of the 244 units would be occupied by two residents, with the other 20 percent of the residential units anticipated to be occupied by one resident, for an average household size of approximately 1.8 persons per unit.

2 SCAG. 2019a. Current Context, Demographics, and Growth Forecast Technical Report: Draft for Public Review and Comment. Website: https://connectsocal.org/Documents/Draft/dConnectSoCal_Demographics-And-Growth-Forecast.pdf (accessed December 12, 2019).

3 SCAG. 2019b. Regional Council Approved Draft RNA Methodology Estimate Tool. Website: http://www.scag.ca.gov/programs/Documents/RHNA/SCAG-RHNA-Methodology-Worksheet-Nov19-Adopted.xlsx (accessed December 31, 2019).

4 SCAG. 2019a. Current Context, Demographics, and Growth Forecast Technical Report: Draft for Public Review and Comment. Website: https://connectsocal.org/Documents/Draft/dConnectSoCal_Demographics-And-Growth-Forecast.pdf (accessed December 12, 2019).

not constitute substantial unplanned population growth in the area. The related projects include a variety of residential, commercial, industrial, and recreational land uses. Some of the related projects may include the installation or extension of roads or infrastructure. However, it is expected that those infrastructure improvements would only serve the applicable related projects. Therefore, it is not anticipated that the related projects would extend roads or other infrastructure into previously undeveloped areas that would be available for future development, particularly given that the project area is highly urbanized and largely built out.

Based on the foregoing, the proposed project in combination with the related projects would not result in a significant impact on population and housing because the increase in population that would be generated by the proposed project and the related projects would not result in substantial unplanned population growth. Therefore, the cumulative impact of the proposed project and the related projects on population growth would be less than significant.

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4.13 PUBLIC SERVICES

This section describes the public services providers within whose jurisdiction the Cypress City Center project (proposed project) site is located and evaluates the potential impacts of the proposed project on public services. This section is based on multiple data sources, including: written correspondence and coordination with public service providers (Appendix I). This section addresses the following public services (service providers are noted in parentheses):

- Fire Protection (Orange County Fire Authority [OCFA])
- Police Protection (Cypress Police Department [CPD])
- Parks (City of Cypress Recreation and Community Services Department)
- Public Libraries (Orange County Public Libraries [OCPL])
- Schools (Cypress School District (CSD) and Anaheim Union High School District (AUHSD)

4.13.1 Methodology

Public service providers were sent a questionnaire requesting information regarding current service provided to the project site and possible constraints or impacts to this service associated with project buildout, which is anticipated to occur in 2022. The impact analyses are based on responses to the questionnaires, data obtained through websites, and adopted planning documents of the service providers. Correspondence with public service providers is included in Appendix I.

4.13.2 Existing Environmental Setting

4.13.2.1 Fire Protection

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.[1]

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;

[1] Orange County Fire Authority (OCFA). 2019a. Member Cities. Website: https://www.ocfa.org/aboutus/PartnerCities. aspx (accessed December 20, 2019).

- 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;
- Conducting 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.[1]

There is one OCFA fire station in the City (Fire Station No. 17, at 4991 Cerritos Avenue in Cypress). Fire Station No. 17 is located approximately 0.4 mile northwest of the project site and 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

[1] OCFA. 2019b. Operations Directory. Website: https://www.ocfa.org/aboutus/Departments/Operations Directory/ Division7.aspx (accessed December 1, 2019).

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.[1]

"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 miles 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 miles 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.[2] 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.[3] According to the OCFA, there are currently no plans for expanded services or facilities near the project area.[4]

4.13.2.2 Police Protection

The Cypress Police Department (CPD) would serve the project site. Management and supervision of the CPD is provided by 1 chief, 3 commanders, 1 civilian manager, 10 sergeants, and 1 civilian supervisor. Of the CPD's 55 sworn personnel, 41 are dedicated to the delivery of patrol services. In addition to the 55 officers, the department is supported 23 civilian employees and numerous volunteers.[5] The current officer-to-resident ratio in 2019 is 1.0 CPD officer per 1,000 residents.

The services provided by the department include a detective bureau, canine teams, narcotics team, vice and intelligence, motorcycle officers, Personnel & Training, Positive Actions thru Character Education (P.A.C.E.) program, S.W.A.T. and a Lead Patrol Officer program. In addition, the Department has established Community Policing, or Cypress Policing, as the philosophy for providing public safety services.[6]

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1 OCFA. 2019c. Station Statistics. Website: https://www.ocfa.org/Uploads/Transparency/OCFA%20Annual%20Report%202018.pdf (accessed December 1, 2019).

2 OCFA. 2019d. Fiscal Year 2018/2019 Adopted Budget. Website: https://www.ocfa.org/Uploads/Transparency/OCFA%202018-2019%20Adopted%20Budget.pdf (accessed December 1, 2019).

3 Ibid.

4 OCFA. 2019e. Response to Fire Service Questionnaire. Received December 9, 2019.

5 City of Cypress. 2017b. Cypress Police Department Overview. Website: https://www.cypressca.org/government/departments/police/inside-cypress-pd/the-community-we-serve#overview (accessed December 1, 2019).

6 Ibid.

Police dispatch services for the City of Cypress are provided by the West Cities Police Communications Center, also known as West-Comm. West-Comm is a consolidated police dispatch center, formed by a Joint Powers Authority between the cities of Cypress, Los Alamitos, and Seal Beach. Located at the Seal Beach Police Department, West-Comm serves a combined population of approximately 90,000 and handles approximately 100,000 calls for service each year.[1]

4.13.2.3 Parks

Section 4.14, Recreation, provided later in this EIR, contains a detailed discussion related to parks and recreational facilities within the City. There are currently a total of 20 developed public parks within the City. According to the Conservation/Open Space/Recreation Element of the City's General Plan (2001), the City currently has a total supply of approximately 82 acres of park and recreational facilities. However, the City recently added 2.9 acres of park space at the former Mackay School site, which increased its park space to 84.9 acres.[2] The City is also currently in the process of planning a new approximately 10-acre park at the southeastern corner of Lexington Drive and Cerritos Avenue, with an expected opening date of 2021.[3]

4.13.2.4 Public Libraries

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 an outlet in the Orangewood Children's Home.[4] The Cypress Library is located at 5331 Orange Avenue, approximately 1.5 miles northeast of the project site. As of 2015, the Cypress Branch Library consisted of a 15,000 sf facility with approximately 88,000 books, CDs, and videos.[5] The branch is open Saturday through Thursday and is closed on Fridays.

According to the Public Services and Facilities Element of the Orange County General Plan (2012), the County's standard for library service is 0.2 square foot (sf) of library space per capita. According to the County's service standards of 0.2 sf of library space per capita and 1.5 books per capita, the Cypress Branch Library has the capacity to accommodate a population of 75,000 and enough books to serve a population of 58,667. The City currently exceeds the County's standards for size and number of books since the City's most current population estimate is 49,833.[6]

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1 City of Cypress. 2017b. Cypress Police Department Overview. Website: https://www.cypressca.org/government/departments/police/inside-cypress-pd/the-community-we-serve#overview (accessed December 1, 2019).

2 City of Cypress. 2017a. Cypress City Council Breaks Ground at Mackay Park. January 23. Website: http://www.cypressca.org/Home/Components/News/News/54/ (accessed December 31, 2019).

3 City of Cypress. 2019. Cypress Receives Donation of Over 8 Acres for New Park from Los Alamitos Race Course, May 21, 2018. Website: https://www.cypressca.org/Home/Components/News/News/1158/17?arch=1 (accessed December 31, 2019).

4 Orange County Public Libraries (OCPL). 2019a. About OCPL. Website: http://www.ocpl.org/services/about (accessed December 18, 2019)

5 City of Cypress. 2015. *Barton Place Final Environmental Impact Report*. October.

6 California Department of Finance. E-5 Population and Housing Estimates for Cities Counties, and the State 2011–2019 with 2010 Census Benchmark. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/e-5/ (accessed December 1, 2019).

According to correspondence with the OCPL, dated December 26, 2019, the State American Library Association or the County of Orange no longer sets quantitative standards for public library buildings and the library demand standard of 0.2 sf of library space per capita is obsolete with the advent of electronic access to library services.[1] According to the OCPL, these 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. According to the OCPL, the Cypress library is at full capacity.[2]

It should also be noted that, according to the Public Services and Facilities Element of the Orange County General Plan, the 0.2 sf of library space per capita standard has been accepted by the Orange County Board of Supervisors as a planning guide for the purpose of projecting the number and location of new libraries needed.

4.13.2.5 Public Schools

The provision of education and school facilities in the City is the responsibility of the Cypress School District (CSD) which served the City's kindergarten through sixth-grade students and Anaheim Union High School District (AUHSD), which serves the City's junior high and high school districts (grades 7 through 12).

The CSD currently operates six elementary schools; five are located within Cypress and one is in La Palma. The CSD's 2018–2019 enrollment was 3,923.[3] In addition, all of the CSD's schools offer on-site privately owned and operated childcare and preschool services.

The AUHSD encompasses 46 square miles and has schools in Anaheim, Cypress, Buena Park, La Palma, and Stanton. According to correspondence with the AUHSD on December 20, 2019, AUHSD is composed of 8 junior high, 8 high schools, and the Oxford Academy Hope School, and Gilbert High School.[4] AUHSD's enrollment totaled 30,292 students in the 2018–2019 school year.[5]

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). According to the AUHSD, both the Lexington Junior High School and Cypress High School are operating beyond their existing capacities.[6] Planned improvements for Lexington Junior High School and Cypress High School include improvements to existing infrastructure and services but do not include the new construction of classrooms.[7]

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1 OCPL. 2019b. Response to Library Services Questionnaire. Received December 26, 2019.
2 Ibid.
3 California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: https://dq.cde.ca.gov/dataquest/ (accessed December 1, 2019).
4 AUHSD. 2019. Response to School Services Questionnaire. Received December 20, 2019.
5 California Department of Education. DataQuest. Enrollment Data 2018–2019. Website: https://dq.cde.ca.gov/dataquest/ (accessed December 1, 2019).
6 AUHSD. 2019. Response to School Services Questionnaire. Received December 20, 2019.
7 AUHSD. 2014. *Facilities Master Plan*. Website: https://auhsdblueprint.auhsd.us/overview.aspx (accessed December 30, 2019)

4.13.3 Regulatory Setting

4.13.3.1 Federal Regulations

There are no federal policies related to public services applicable to the proposed project.

4.13.3.2 State Regulations

Assembly Bills 2926, 1600, and 2751. To assist in providing facilities to serve students generated from new development projects, the State enacted Assembly Bill (AB) 2926 in 1986, which allows school districts to collect impact fees from developers of new residential, commercial, and industrial developments. Development impact fees are also referenced in the 1987 Leroy Greene Lease-Purchase Act, which requires school districts to contribute a matching share of the costs for the construction, modernization, or reconstruction of school facilities. Subsequent legislation has modified the fee structure and general guidelines. In 1987, the provisions of AB 2926 have been expanded and revised by AB 1600, which limits the ability of a school district to levy School Fees unless (i) there is a need for the School Fee revenues generated, and (ii) there is a nexus or relationship between the need for School Fee revenues and the type of development project on which the School Fee is imposed. (The requirements of AB 1600 were clarified with the passage in 2006 of AB 2751, which codifies the findings of *Shapell Industries vs. Milpitas Unified School District*.)

Senate Bill 50 and California Education Code Section 17620. Senate Bill 50 and California Education Code Section 17620. Senate Bill (SB) 50, the Leroy F. Greene School Facilities Act of 1998, was signed into law on August 27, 1998. It is a program for funding school facilities largely based on matching funds. The approval of Proposition 1A authorized funds for SB 50 in the amount of $9.2 billion, including grants for construction of new schools and modernization of existing schools. The new construction grant provides funding on a 50/50 State and local match basis. The modernization grant provides funding on a 60/40 State and local match basis. Districts that are unable to provide some or all of the local match requirements and are able to meet financial hardship provisions may be eligible for additional State funding.[1] SB 50 (codified as California Education Code Section 17620) allows school districts to levy a fee, charge, dedication, or other requirement against any development project within its boundaries for the purpose of funding the construction or reconstruction of school facilities. The maximum fee amount that school districts can assess is limited by statutes provided in California Government Code Section 65995. According to the AUHSD, the current Development Impact fees for projects within the AUHSD's jurisdictional boundaries are $3.79 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.[2]. The fees are collected by the AUHSD and shared equally with the CSD.

The payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to levels that are less than significant (see California Government Code Section 65996). Stated another way, the provisions of SB 50 provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in the

[1] State of California. 2007. State Allocation Board. *Office of Public School Construction, School Facility Program Handbook*. April.

[2] AUHSD. 2019. Response to School Services Questionnaire. Received December 20, 2019.

California Environmental Quality Act (CEQA) or other State or local laws. The California Department of Education permits local school districts to increase facility fees subject to Department of Education review and with approval of a nexus study from the school District that demonstrates that costs incurred by the school District for the provision of school facilities and services are higher than Level 1 funding provides. In such an instance, a nexus must be demonstrated in the study between the increase proposed by the local school District and the actual cost of provision of school facilities and services.

California Fire Code. The California Fire Code (CFC) includes regulations for emergency planning, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Several fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

Office of Emergency Services. The State of California passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

4.13.3.3 Regional Regulations

There are no regional policies or regulations related to public services applicable to the proposed project.

4.13.3.4 Local Regulations

City of Cypress Municipal Code. The Cypress Municipal Code includes the following requirement that would apply to the proposed project related to the provision of public services:

- **Section 5-3 (California Fire Code, adoption, amendments)**, adopts the 2019 CFC, with some amendments and modifications. Generally, the intent of the CFC is to prescribe regulations for the safeguarding of life and property from the hazard of fire and explosion.

4.13.4 Thresholds of Significance

The thresholds for public services impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to public services if it would:

Threshold 4.13.1(i): **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?**

Threshold 4.13.1(ii): **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?**

Threshold 4.13.1(iii): **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?**

Threshold 4.13.1(iv): **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?**

Threshold 4.13.1(v): **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?**

4.13.5 Project Impacts

Threshold 4.13.1(i): **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *fire protection*?**

4.13.5.1 Construction

Less Than Significant Impact. The proposed project would incrementally increase demand for fire services. The proposed project would not result in construction activities that would substantially change the existing fire protection needs in the area. There would be minimal fire protection needs during the temporary construction activities. Furthermore, short-term construction activities would be limited to the project site and would not significantly impact the ability of emergency response vehicles traveling through streets adjacent to the project site. Therefore, construction of the proposed project would result in less than significant impacts related to the provision of fire services.

In addition, the proposed project would be required to comply with all Occupational Safety and Health Administration (OSHA) requirements regarding site safety during construction. All construction managers and personnel would be trained in emergency response and fire safety, and on-site fire suppression equipment specific to construction activities would be maintained.

As discussed previously, OCFA Fire Station No. 17, which is approximately 0.4 mile from the project site was rebuilt and expanded to accommodate existing and planned future needs in the service area in 2012. Therefore, construction activities associated with the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered facilities, the construction of which could cause significant environmental impacts. Therefore, the proposed project's potential impact on fire protection services with respect to construction activities would be less than significant.

4.13.5.2 Operation

Less Than Significant with Mitigation Incorporated. The proposed project would incrementally increase demand for fire protection and emergency service calls. The proposed project would adhere to the development standards described in the City's Municipal Code related to public safety. The proposed project would also be designed to comply with all OCFA requirements, including providing adequate fire flow/structure protection to the project site and providing adequate access for emergency vehicles. Written correspondence with Tamera Rivers, a Management Analyst at OCFA indicated it is estimated that the structures proposed would require a fire flow of approximately 3,000-4,000 gallons per minute (gpm) for 3 hours.[1] Additionally, the proposed project would comply with current editions of the California Building Code, California Fire Code, and related codes.

As stated in Section 4.12, Population and Housing, the proposed project would not induce substantial population growth in the City and therefore would be able to be served by Fire Station No. 17. The proposed project would be designed to comply with all OCFA requirements, including providing adequate fire flow/structure protection to the project site and providing adequate access for emergency vehicles. Written correspondence with the OCFA indicated that all OCFA uses a fair share approach to mitigate fire service response impacts and facility/equipment needs. To address any potential impacts to fire services, Mitigation Measure PS-1, which requires the applicant/ developer to enter into a Secured Fire Protection Agreement prior to the issuance of any building permits, would be implemented. The Secured Fire Protection Agreement with the OCFA would ensure adequate service to the project site. The OCFA would review and comment on the site plan prior to project approval. As part of the review, the OCFA would impose standard conditions of approval, which would ensure all impacts regarding fire protection would be less than significant. Therefore, the proposed project would not require the construction of new fire protection facilities or the upgrade of existing facilities, which could cause significant environmental impacts, in order to maintain acceptable service ratio, response times, or other performance objectives for fire protection. Impacts would be less than significant with the implementation of Mitigation Measure PS-1.

[1] OCFA. 2019e. Response to Fire Service Questionnaire. Received December 9, 2019.

Threshold 4.13.1(ii): **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *police protection*?**

4.13.5.3 Construction

Less Than Significant Impact. Short-term construction activities associated with the proposed project would not substantially change the existing police protection needs in the area. There would be minimal police protection needs beyond the existing conditions during construction activities. Therefore, construction of the proposed project would result in less than significant impacts related to the provision of police services; no mitigation is required.

4.13.5.4 Operation

Less Than Significant Impact. The population and housing growth anticipated as a result of the proposed project would incrementally increase demand for police protection and emergency service calls. Although there may be an incremental increase in calls for service related to new residents, the related population growth and anticipated commercial/retail activity would not be considered substantial. As stated in Section 4.12, Population and Housing, the proposed project would not induce substantial population growth. Although the proposed project may incrementally contribute to the need for one additional police officer to meet future demand, the addition of one new police officer would not necessitate the expansion of the City's existing police facilities because the new police officer would be accommodated in existing facilities. Therefore, the proposed project is expected to be adequately served by existing police facilities. Additionally, the proposed hotel, apartment building, movie theater, and retail buildings are anticipated to hire private security, enhancing on-site surveillance and potentially reducing the demand for police services to the project site. Additionally, the CPD would review the site plan during the project approval phase and would impose standard conditions of approval. Therefore, the proposed project would not require the construction of new police protection facilities or the upgrade of existing facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objective for police protection. Potential impacts related to the provision services for operation of the proposed project would be less than significant, and no mitigation is required.

Threshold 4.13.1(iii): **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *schools*?**

Less Than Significant Impact. 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 4.13.A, Projected School Enrollment).

Table 4.13.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
Total	--	**176 students**

Source: State of California, Office of Public School Construction. 2019. School Facility Program Handbook. January. Website: https://www.dgs.ca.gov/-/media/Divisions/OPSC/Services/Guides-and-Resources/SFP_Hdbk_ADA.ashx?la=en&hash=14D0F03EABD3AF437F3F4E2FDE1A602AFDFEE6C2 (accessed December 31, 2019).
Note: The projected enrollment is based on 251 residential units.

The increase in students projected as a result of project implementation would incrementally increase the demand for school facilities. Pursuant to California Education Code Section 17620(a)(1), the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district for the purpose of funding the construction or reconstruction of school facilities. The Applicant/Developer would be required to pay such fees to reduce any impacts of new residential development on school services as provided in Section 65995 of the California Government Code (refer to Regulatory Compliance Measure PS-1 below). The fees are collected by the AUHSD and shared equally with the CSD.

Pursuant to the provisions of Government Code Section 65996, a project's impact on school facilities is fully mitigated through payment of the requisite school facility development fees current at the time a building permit is issued. According to the AUHSD, the current Development Impact Fees for projects within the AUHSD's jurisdictional boundaries were $3.79 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.[1] Therefore, with payment of the required fees, as outlined in Regulatory Compliance Measure PS-1, potential impacts to school services and facilities associated with implementation of the proposed project would be less than significant. No mitigation is required.

Threshold 4.13.1(iv): **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *parks*?**

[1] AUHSD. 2019. Response to School Services Questionnaire. Received December 20, 2019.

Less Than Significant Impact. A detailed discussion of the proposed project's impacts to parks and recreational facilities is provided in Section 4.14, Recreation. As discussed in Section 4.14, the incremental increase in demand for park facilities created by the project's proposed 251 residential units would result in limited use of existing recreation facilities in the project vicinity. However, this increased demand would be offset by the payment of park fees required by Regulatory Compliance Measure REC-1. Additionally, on-site amenities included in the proposed project include: fitness area, open air courtyard, club room, and a dog park, which would be available to residents and their guests. The inclusion of these recreational facilities would offset some of the demand for parks and recreational facilities associated with the new residents. Therefore, the proposed project would not result in additional physical impacts associated with the provision of new or physically altered park facilities. Impacts to parks and recreation facilities would be less than significant, and no mitigation is required.

Threshold 4.13.1(v): **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *other public facilities*?**

4.13.5.5 Construction

Less Than Significant Impact. Short-term construction activities would not have any impact on the existing OCPL system because there are no nearby libraries that could be impacted by construction activities and construction activities would not generate demand for library services. It is unlikely that construction workers would increase the demand for library services during construction of the proposed project as most workers would commute directly to and from the project site for the sole purpose of working on the proposed project. Therefore, no new libraries would be required to be developed nor would an existing library need to be expanded to provide adequate public library services during proposed project construction. Therefore, the proposed project's potential impact on public libraries during construction would be less than significant. No mitigation is required.

4.13.5.6 Operation

Less Than Significant Impact. Demand for library services is typically determined based on the size of the resident population. As stated in Section 4.12, Population and Housing, the proposed project would result in 758 new residents, which is not substantial. As of 2015, the Cypress Branch Library consisted of a 15,000 sf facility with approximately 88,000 books, CDs, and videos.[1] According to the County's service standards of 0.2 sf of library space per capita and 1.5 books per capita, the Cypress Branch Library has the capacity to accommodate a population of 75,000 and enough books to serve a population of 58,667. The City currently exceeds the County's standards for size and number of books since the City's most current population estimate is 49,833.[2] Accordingly, the Cypress Branch

1 City of Cypress. 2015. *Barton Place Final Environmental Impact Report*. October.

2 California Department of Finance. E-5 Population and Housing Estimates for Cities Counties, and the State 2011–2019 with 2010 Census Benchmark. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/e-5/ (accessed December 18, 2019).

Library has sufficient capacity to accommodate the additional population growth associated with the proposed project.

As noted above, the OCPL does not use a library demand ratio. According to the OCPL, the Cypress Library is at full capacity and consideration should be given to implement a development fee to mitigate the impact on Cypress Library and its services to the facility. However, implementation of the proposed project would generate additional funding for the City and County through property tax revenue and sales tax revenue the proposed project would generate. These funds could be used for the development of new or expanded library facilities or new library equipment if required. The allocation of additional tax revenues would be at the discretion of City policymakers based on City needs.

For the reasons discussed above, the proposed project would not result in additional physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance measures. The proposed project's impacts would be less than significant; no mitigation is required.

4.13.6 Level of Significance Prior to Mitigation

Impacts related to police services, schools, parks, and libraries would be less than significant prior to mitigation. The proposed project would result in potentially significant impacts to fire protection services, and mitigation is required.

4.13.7 Regulatory Compliance Measures and Mitigation Measures

4.13.7.1 Regulatory Compliance Measures

The proposed project would comply with the following standards, the implementation of which is intended to reduce impacts related to public services.

Regulatory Compliance Measure REC-1 **Dedication of Parkland and/or Payment of Park Fees.** Prior to issuance of any building permits, the Applicant/ Developer shall provide proof of compliance with the applicable provisions of Chapter 25 (Subdivisions), Article 6, Park and Recreational Facilities, of the City of Cypress Municipal Code to the Director of the City of Cypress Community Development Department, or designee.

Regulatory Compliance Measure PS-1 **Payment of School Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof to the Director of the City of Cypress Community Development Department, or designee, that payment of school fees to the Anaheim Union High School District has been made in compliance with Section 65995 of the California Government Code.

4.13.7.2 Mitigation Measures

Mitigation Measure PS-1

Secured Fire Protection Agreement. Prior to the issuance of any building permits, the Applicant/ Developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). This Agreement shall specify the Applicant/ 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.

4.13.8 Level of Significance after Mitigation

With the implementation of Mitigation Measure PS-1, potentially significant impacts would be reduced below a level of significance.

4.13.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services. The project site is a vacant parking lot located in an urban area with existing services provided by public service providers in the vicinity. The cumulative area for public services is listed below for each individual public service provider.

4.13.9.1 Fire Protection

The geographic area for cumulative analysis of fire protection services is defined as the service territory of Fire Station No. 17. As stated above, Fire Station No. 17 was rebuilt and expanded to accommodate existing and planned future needs in its service area. Although the proposed project would increase calls for service the increase in calls for service is not anticipated to result in an excessive increase in calls for service. Therefore, the proposed project would not have a cumulatively significant impact on the provision of fire services.

Of the 17 related projects, 4 would potentially be served by Fire Station No. 17. Operation of the related project is anticipated to increase the overall demand for fire protection services provided by Fire Station No. 17. As discussed in Section 4.12, Population and Housing, population growth generated by the proposed project in conjunction with related projects would not result in substantial unplanned population growth. Thus, the proposed project and the related project's population increase would be accommodated as part of OCFA's long-term growth planning for fire and other public facilities. Additional demands for fire protection services would be funded by existing funding sources (i.e., property tax and government funding), to which the proposed project and related projects would contribute. Additionally, to address the increase in cumulative regional demand for fire and emergency medical services. The OCFA requires all developers to enter into a

secured fire protection agreement with OCFA to ensure the availability of adequate fire protection services. The agreements specify a developer's pro-rata fair-share funding for capital improvements necessary to establish and maintain adequate fire protection facilities, equipment, and personnel. Therefore, the proposed project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation is required.

4.13.9.2 Police Protection

The geographic area for cumulative analysis of police protection services is defined as the service area for the Cypress Police Department. Although the proposed project would result in an incremental increase in calls for service, it would not result in the need for additional or physically altered police facilities.

Of the 17 related projects, 4 are located within the City of Cypress. As discussed previously population growth generated by the proposed project in conjunction with related projects would not result in substantial unplanned population growth. As such, the proposed project and the related project's demand for police services would be accommodated by the City and the OCSD's long-term growth planning for police protection services and facilities. Additionally, additional demands for OCSD services would be funded by existing funding sources (i.e., property taxes and government funding), to which the proposed project and related projects would contribute. Therefore, the proposed project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation is required.

4.13.9.3 Schools

The geographic area for cumulative analysis of school services includes the school districts that serve the proposed project (CSD and AUHSD). As described above, the proposed project would not result in significant impacts to school facilities. However, a cumulative increase in the demand for school services is anticipated to take place with the development of future residential projects, the proposed project itself, and more specifically, the future household growth within the school boundaries currently servicing the project site. Of the 17 related projects listed in Table 4.A, Summary of Related Projects, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, only three contain residential uses and are within the boundaries of the CSD and the AUHSD. Two of the three developments, Barton Place Mixed-Use and SRM Cypress (Westmont) would not result in the generation of students because the residential uses included in these developments consist of senior housing and assisted living facilitates, which would not house any students. The Bonanni Development would generate approximately 34 elementary school students and 14 middle/high school students.

As discussed above, the proposed project would generate an increase of 126 elementary school students and 50 middle/high school students. When added to the students generated by the Bonanni Development, the cumulative student generation would include 160 elementary school students and 64 middle/high school student for a total of 224 students. As described above, all projects are required to pay full payment of requisite development fees pursuant to California Government Code Section 65995, as described in Regulatory Compliance Measure PS-1. Because the proposed project and all future related projects would be required to pay school fees as required by Regulatory Compliance Measure PS-1, cumulative impacts that the proposed project may have on

school services would be less than significant. Therefore, the proposed project's contribution to school impacts would not be cumulatively considerable, and no mitigation is required.

4.13.9.4 Parks

Section 4.14, Recreation, of this EIR, contains a detailed discussion of the proposed project's potential impacts on parks and recreational facilities. As discussed therein, the proposed project and the applicable related projects would not result in a significant cumulative impact to park and recreational facilities and the incremental contribution of the proposed project to a potentially significant impact would not be cumulatively considerable.

4.13.9.5 Public Libraries

The geographic area for the assessment of cumulative impacts pertaining to library services is the City of Cypress. Of the 17 related projects, the three projects involving residential uses would introduce new residents to the library service area, potentially increasing demand for library services. Nonresidential projects are viewed as having relatively limited impacts attributable to occasional and incidental use of library facilities for generalized research purposes. As discussed in Section 4.12, Population and Housing, if the proposed project and all related residential units in the City were constructed, the cumulative population increase would be 1,552 residents. According to the State of California Department of Finance population estimates, the City's population in January 2019 was 49,833.[1] Therefore, the cumulative population increase would result in a population of 51,385 residents in the City. As discussed above, the OCPL adopted service standards of 0.2 sf of library space per capita and 1.5 books per capita were used to evaluate the potential impacts of the proposed project. Based on this service standard, the Cypress Branch Library has the capacity to accommodate a population of 75,000 and enough books to serve a population of 58,667. Therefore, the Cypress Branch Library has sufficient capacity to accommodate anticipated demand from future projects. Therefore, the proposed project's contribution to library impacts would not be cumulatively considerable.

[1] California Department of Finance. E-5 Population and Housing Estimates for Cities Counties, and the State 2011–2019 with 2010 Census Benchmark. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/e-5/ (accessed December 18, 2019).

4.14 RECREATION

This section describes the parks and other recreational facilities near the project site and evaluates the potential impacts of the Cypress City Center project (proposed project) on those facilities. This section also discusses the existing setting of recreational facilities within and near the City of Cypress (City) and sets forth the relevant regulatory requirements that apply to the analysis of the proposed project's impact on recreational facilities. This section is based, in part, on information provided in the Conservation/Open Space/Recreation Element of the City's General Plan and applicable provisions of the City's Municipal Code.

4.14.1 Methodology

Impacts to recreational facilities were assessed based on the potential for the proposed project to generate increased demand on recreational facilities that could result in deterioration of, or contribute toward substantial accelerated deterioration of, those facilities or require the construction of new facilities or expansion of existing facilities that could have an adverse physical effect on the environment. For the purposes of this analysis, "recreational facilities" are defined as parks and designated public areas used for active or passive recreation. The Conservation/Open Space/Recreation Element of the City's General Plan states that recreational resources include parks, schools, community facilities, and privately owned recreational facilities. The City's Municipal Code and the Conservation/Open Space/Recreation Element contain requirements for the dedication of land, or the payment of parks fees, or both, for recreational purposes in connection with residential development projects, based on a standard of 3.0 acres of land per 1,000 residents for park and recreational purposes, and an additional 1.5 acres of land per 1,000 residents for such purposes that are made available at K–12 schools through a cooperative arrangement between the City and local school districts and local park and recreation districts. This results in a total of 4.5 acres of land per 1,000 residents.

4.14.2 Existing Environmental Setting

4.14.2.1 Existing Project Site

The approximately 13-acre site is characterized by a paved parking lot, with existing light poles and various electrical utility boxed and lines. There are no existing public parks or other public recreation uses adjacent to the project site.

4.14.2.2 Existing Recreational Facilities within the City

There are currently a total of 20 developed public parks within the City, which range in size from the approximately 0.17-acre Laurel Park to the 22-acre Oak Knoll Park.[1] According to the Conservation/ Open Space/Recreation Element of the City's General Plan (2001), the City currently has a total supply of approximately 82 acres of park and recreational facilities.[2] Subsequently, the City added 2.9 acres of park space at the former Mackay School site, which increased its park space to

[1] City of Cypress. 2019b. Facility and Park Locations. Website: https://www.cypressca.org/government/departments/recreation-community-services/facility-park-locations (accessed December 31, 2019).

[2] City of Cypress. 2001. General Plan Conservation/Open Space/Recreation Element.

84.9 acres.[1] The City recently approved plans for a new approximately 9-acre sports park at the southeastern corner of Lexington Drive and Cerritos Avenue, with an expected opening date of 2021.[2]

The City classifies parks as community, neighborhood, or mini-facilities based on size. In addition to the City's parks, Cypress residents enjoy access to recreational facilities at 11 K-12 schools, which add approximately 100 additional acres to the City's recreational facilities,[3] and 9 acres of open space and recreational facilities at Cypress Community College. Fees are charged by Cypress Community College for use of its facilities other than its track and tennis courts.

4.14.2.3 Community Parks

Arnold Cypress Park (14.5 acres) and Oak Knoll Park (22 acres) are the two major community parks located in the City.[4] Community parks serve neighborhoods and offer recreational opportunities for large groups. These parks are generally over 10 acres in size and include a variety of facilities, such as active recreational facilities such as athletic fields and group picnic areas. In addition, these large parks often include community centers.

4.14.2.4 Neighborhood Parks

Neighborhood parks are smaller in size than community parks and typically range in size from 3 to 5 acres. Within the City, the 15 neighborhood parks encompass approximately 48 acres. Neighborhood parks are often located adjacent to elementary schools and normally include tot lots, picnic facilities, and a multi-use court.

4.14.2.5 Mini-Parks

Mini-parks are less than 1 acre in size and are usually located near schools or residential developments. The City's three mini-parks serve as playgrounds for children or as a place for people to relax in an urban environment. There are 1.26 acres of mini-parks within the City.[5]

As shown in Table 4.14.A, five existing parks and recreational facilities in Cypress are within 1 mile of the project site.

The nearest community park is Oak Knoll Park, which is 1.1 mile northeast of the project site. The nearest neighborhood park is Cedar Glen Park (0.6 mile northwest); however, Darrell Essex Park is 0.8 mile north of the project site. There are two mini-parks within 1 mile of the project site: Damron Park (0.7 mile northeast) and Laurel Park (0.7 mile northeast).

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1 City of Cypress 2019b. Facility & Park Locations: Mackay Park Webpage. Website: https://www.cypressca.org/Home/Components/FacilityDirectory/FacilityDirectory/66/240 (accessed December 21, 2019)
2 City of Cypress. 2019a. City Council Meeting Minutes. October 28, 2019.
3 City of Cypress. 2015. *Barton Place Final Environmental Impact Report*. October.
4 City of Cypress. 2001. General Plan Conservation/Open Space/Recreation Element.
5 Ibid.

Table 4.14.A: Parks and Recreational Facilities in the Vicinity of the Project Site

Name and Address	Distance from Project Site (miles)	Type	Size (acres)	Amenities
Darrell Essex Park 5131 Ball Road	0.8	Neighborhood	2.5	Children's playground equipment, barbeques, picnic shelters, and drinking fountains
Damron Park 5400 Myra Avenue	0.7	Mini	0.5	Children's playground equipment
Laurel Park 5902 Cathy Avenue	0.7	Mini	0.2	Children's playground equipment
Cedar Glen Park 10201 Moody Street	0.6	Neighborhood	2.5	Children's playground equipment, basketball court, barbeques, picnic shelters, and drinking fountains
Oak Knoll Park 9600 Graham Street	1.1	Community	22	Baseball field, basketball court, barbeques, exercise course, on-site parking, picnic facilities, playground equipment, restroom, softball field, volleyball court

Source: City of Cypress, Facility and Park Locations (2019b). Website: https://www.cypressca.org/play/facility-park-locations (accessed December 31, 2019).

4.14.2.6 Regional Parks

Currently, there are no regional parks within the City; however, seven regional park facilities are located in surrounding communities:

- The City of Long Beach operates El Dorado Regional Park approximately 2.3 miles west of the project site. El Dorado Regional Park incorporates approximately 450 total acres. Recreational amenities within the park include an archery range, barbeque and picnic areas, 5 miles of bike paths, a campground, a 100-acre nature center, two stocked fishing lakes, a physical fitness course, and playgrounds for children.

- The County of Orange (County) operates Ralph B. Clark Regional Park, which is located approximately 7 miles northeast of the project site. Ralph B. Clark Regional Park incorporates approximately 104 total acres. Recreational amenities within the park include picnic areas, hiking and biking trails, playgrounds for children, sports fields, baseball and softball diamonds, volleyball courts, tennis courts, an amphitheater, and a lake.

- Heartwell Park is approximately 4.7 miles northwest of the project site, in the City of Long Beach. The park incorporates approximately 123 total acres. Recreational facilities within the park include a stocked fishing pond, bike paths, a physical fitness course, picnic areas, baseball diamonds, athletic fields, tennis courts, basketball courts, and volleyball courts.

- Cerritos Regional Park is approximately 3 miles northwest of the project site, in the City of Cerritos. The park incorporates approximately 84 total acres. Recreational amenities within the park include a swimming pool, a stocked fishing pond, baseball diamonds, a gymnasium, a multipurpose room, and picnic areas.

- Rynerson Park is approximately 3.6 miles northwest of the project site, in the City of Lakewood. The park incorporates approximately 40 total acres. Recreational facilities within the park include bike paths, baseball diamonds, a wildflower meadow, picnic acres, a physical fitness circuit, a 1.5-mile fitness trail, and an amphitheater.

- El Rancho Verde Park and Bicycle Path is approximately 2.9 miles north of the project site, in the Cities of La Palma and Buena Park. The park incorporates approximately 5.25 total acres. Recreational facilities within the park include a botanical garden, exercise stations, playgrounds for children, and a 12-mile bike path.

- The Bolsa Chica Wetlands are approximately 6.4 miles south of the project site, in the City of Huntington Beach. The wetlands are an approximately 1,400-acre nature reserve. Recreational amenities surrounding the wetlands include walking trails, guided tours, educational programs, and volunteer programs.

4.14.2.7 Schools

City residents also enjoy access to open space and recreational facilities at 11 K-12 schools, contributing approximately 119 acres to the City's open space and recreation resources.[1] School sites are available for public recreational use after school hours and on weekends.

In addition to these K-12 schools, Cypress Community College contains 93 acres of open space (inclusive of parking) and includes large playing fields, a running track, tennis courts, a swimming pool, and handball courts. These facilities are available for public use during specified hours by reservation. Fees are charged for use of the Cypress Community College facilities with the exception of the track and tennis courts.

4.14.2.8 Community Facilities

The City has a number of community facilities that host many of its recreation and cultural programs. These facilities include the Cypress Community Center, the Cypress Civic Center and the Cypress Senior Center. These facilities provide a multitude of uses to help meet the recreational needs of the City's residents.

4.14.2.9 Other Public Facilities

A portion of one public golf course, the Navy Golf Course, is located within the City of Cypress 0.5 miles southeast of the project site. This 220-acre, 27-hole golf complex is owned by the United States Department of the Navy. Additionally, four other public golf courses are located within five miles of the proposed project:

- The El Dorado Park Golf Course is approximately 2.7 miles west of the project site, in the City of Long Beach. This golf course includes an 18-hole golf course, occupying approximately 275 total acres. The El Dorado Park Golf Course is open to the public and includes an event center.

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[1] City of Cypress. 2001. General Plan Conservation/Open Space/Recreation Element.

- The Heartwell Golf Course is approximately 3.5 miles northwest of the project site, in the City of Long Beach. This golf course includes an 18-hole golf course, occupying approximately 37 total acres. The Heartwell Golf Course is open to the public and includes a restaurant.

- The Recreation Park Golf Course is approximately 4.8 miles southwest of the project site, in the City of Long Beach. This golf course includes an 18-hole golf course, occupying approximately 170 total acres. The Recreation Park Golf Course is open to the public and includes a clubhouse, banquet facility, and garden gazebo.

- The Dad Miller Golf Course is approximately 4.5 miles northeast of the project site, in the City of Anaheim. This golf course includes an 18-hole golf course, occupying approximately 60 total acres. The Dad Miller Golf Course is open to the public and includes a clubhouse and a banquet hall.

4.14.2.10 Private Recreation Facilities

Private athletic clubs in the City also offer recreational facilities, including the approximately 37,500-square-foot (sf) 24 Hour Fitness facility adjacent to the western boundaries of the project site. The majority of these facilities, although privately owned, are open to the public subject to a user fee. These private recreational amenities within the City also help meet residents' recreation needs by providing swimming, racquet and court sports, and exercise classes.

Additionally, many of the residential developments and commercial/industrial open space facilities within the City feature recreational amenities, including clubhouses, pools, tennis courts, and other related recreational facilities. Although they are not included in the City's parkland inventory, these facilities complement public recreational amenities.

4.14.3 Regulatory Setting

4.14.3.1 Federal Regulations

There are no federal regulations applicable to the proposed project.

4.14.3.2 State Regulations

Quimby Act of 1975. The State Quimby Act (California Government Code § 66477) allows the legislative body of a city or county to require by ordinance the dedication of land, the payment of an in-lieu park fee, or a combination thereof, for the approval for a final tract or parcel map. In cases where such dedication or park fee is not obtained through a map, they may be imposed when building permits are issued. The following conditions must be met to comply with the Quimby Act:

- The city or county ordinance must include definitive standards for determining the proportion of a subdivision to be dedicated and the amount of any fee to be paid in lieu thereof.

- The legislative body must adopt a general plan containing a recreation element, and any proposed park or recreational facility must be consistent with the principles and standards established in the element.

4.14.3.3 Regional Regulations

There are no regional regulations applicable to the proposed project.

4.14.3.4 Local Regulations

City of Cypress Municipal Code. The City of Cypress Municipal Code Chapter 25, Article 6, Section 25-41, Provision of Park and Recreational Facilities, states that "every subdivider who subdivides land shall dedicate a portion of such land, pay a fee, or do both as set forth in this article for the purpose of providing park and recreational facilities, including recreational community gardening facilities, to help serve the future residents of such subdivision."

Accordingly, Section 25-43 of the Municipal Code establishes a standard of 3.0 acres of land per 1,000 residents for park and recreational purposes, and an additional 1.5 acres of land per 1,000 residents for such purposes that are made available at K-12 schools. This code standard is also consistent with Conservation/Open Space/Recreation Element Policy COSR-6.1, as discussed below.

City of Cypress Conservation/Open Space/Recreation Element. The Conservation/Open Space/ Recreation Element of the City's General Plan describes existing park and recreational facilities within the City, compares the existing acreage of facilities to the standard set forth in the City's Municipal Code (described above) and identifies goals and policies for the provision of parks and recreational facilities.

The following policy in the Conservation/Open Space/Recreation Element applies to the proposed project:

COSR-6.1 Continue to require new developments to provide recreational opportunities for their residents in accordance with the City's park standard, three acres of parkland per 1,000 residents.

4.14.4 Thresholds of Significance

The thresholds for recreation impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to recreation if it would:

Threshold 4.14.1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Threshold 4.14.2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

4.14.5 Project Impacts

Threshold 4.14.1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact. As described in Section 4.12, Population and Housing, the proposed project includes the construction of a 251-unit apartment structure that would add 758 new residents. As described previously, there are four parks and recreational facilities in Cypress that are within 1 mile of the project site, as shown in Table 4.14.A, above. Based on proximity, the parks and recreation facilities listed in Table 4.14.A would serve the project site; however, all parks in the City could be affected, because residents can use any park or recreation facility anywhere in Cypress.

As discussed above, Section 25-43 of the City's Municipal Code establishes a standard of 3.0 acres of land per 1,000 residents for park and recreational purposes, and an additional 1.5 acres of land per 1,000 residents for such purposes that are made available at K–12 schools through a cooperative arrangement between the City and local school districts and local park and recreation districts. This results in a total of 4.5 acres of land per 1,000 residents. The proposed project would comply with the applicable provisions in Chapter 25, Article 6, Park and Recreational Facilities, of the City's Municipal Code (refer to Regulatory Compliance Measure REC-1), which require the payment of an in-lieu park fee, the dedication of land for park and recreational purposes, or both, based on a standard of 3.0 acres of land for park and recreational purposes for each 1,000 residents. In addition, at the discretion of the City Council, a percentage of the required in-lieu fees may be credited based on the amount of the private open space provided within the development (Municipal Code Section 25-47, Credit for Private Open Space). If approved, the credit would be no less than 1 percent and no greater than 50 percent of the required in-lieu fee.

As discussed previously the City has a total supply of approximately 84.9 acres of park and recreational facilities. Based on the City's 2019-estimated population of 49,833 residents,[1] and the standard of 3.0 acres for each 1,000 residents in Section 25-43 of the Cypress Municipal Code, the City should optimally have 149.5 acres[2] of park and recreational facilities within its boundaries to serve its existing population. Therefore, the City currently has a deficiency of approximately 64.6 acres (149.5 - 84.9 = 64.6). With the development of the planned approximately 9-acre park, the park deficiency would be reduced to 55.6 acres. The addition of approximately 758 additional residents to Cypress could incrementally increase usage of City parks and recreational facilities. The proposed project's additional residents would require 2.27 acres of parkland based on the standard of 3.0 acres for each 1,000 residents in City's Municipal Code Section 25-43. As shown in Figure 3.8, Proposed Open Space Amenities, in Chapter 3.0, Project Description, the proposed project would include a total of 59,655 sf (1.37 acres) of public open space/recreational amenities, including a plaza, two greenbelts, and a dog park, all of which would be available to the public. The proposed

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1 California Department of Finance. E-5 Population and Housing Estimates for Cities Counties, and the State 2011–2019 with 2010 Census Benchmark. Website: http://dof.ca.gov/Forecasting/Demographics/Estimates/e-5/ (accessed December 18, 2019).

2 49,833 residents * 3.0 acres / 1,000 residents.

project would also include 31,500 sf (0.72 acre) of private open space/recreational amenities, including a fitness area, a recreational courtyard, a club room, and lounge, which would be available only to residents and their guests. At the discretion of the City Council, a percentage of these private recreational amenities may be credited towards required in-lieu fees (Municipal Code Section 25-48).

The City will require the Applicant/Developer to pay fees and/or dedicate parkland as identified in Regulatory Compliance Measure REC-1. Therefore, with the payment of in-lieu park fees and/or the dedication of parkland, impacts to recreation requirements would be less than significant. Therefore, the proposed project would not result in a substantial increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of any such facility would occur or be accelerated, and the proposed project's impact would be less than significant. No mitigation is required.

Threshold 4.14.2: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. The proposed project would include a fitness area, recreational courtyard, a club room, and a lounge, which would be available only to residents and their guests as shown in Figure 3.8, Proposed Open Space Amenities. The proposed project would also include a plaza, two greenbelts, and a dog park, which would be open to the public. The construction of recreational facilities is part of the proposed project; the potential adverse effects associated with the construction and operation of the proposed project's recreational facilities has been considered throughout the analysis in this Environmental Impact Report (EIR) and mitigated as appropriate. Therefore, the proposed project does not include recreational facilities that would have an adverse physical effect on the environment. Additionally, the inclusion of these recreational facilities would offset some of the demand associated with the new residents. Therefore, the proposed project does not require construction or expansion of existing recreational facilities and would not result in adverse off-site physical effects at those facilities.

As discussed earlier in Section 4.12, Population and Housing, the proposed project's 251 residential units could result in the addition of approximately 758 residents to the City's population. Based on the City's parkland requirement of 3.0 acres per 1,000 residents, the proposed project would increase the demand for parkland in the City by 2.27 acres. As previously mentioned, the Applicant/Developer is required by the City to pay in-lieu park fees (refer to Regulatory Compliance Measure REC-1). Therefore, impacts related to the construction or expansion of recreational facilities included as part of the proposed project would be less than significant, and no mitigation is required.

4.14.6 Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would not result in any significant impacts to parks and recreational resources.

4.14.7 Regulatory Compliance Measures and Mitigation Measures

4.14.7.1 Regulatory Compliance Measures

Regulatory Compliance Measure REC-1

Dedication of Parkland and/or Payment of Park Fees. Prior to issuance of any building permits, the Applicant/Developer shall provide proof of compliance with the applicable provisions of Chapter 25 (Subdivisions), Article 6, Park and Recreational Facilities, of the City of Cypress Municipal Code to the Director of the City of Cypress Community Development Department, or designee.

4.14.7.2 Mitigation Measures

With adherence to Regulatory Compliance Measure REC-1, the proposed project would result in less than significant impacts related to recreation, and no mitigation measures are required.

4.14.8 Level of Significance after Mitigation

The proposed project would not result in any significant impacts to parks and recreational resources.

4.14.9 Cumulative Impacts

The project site is located within the City and the proposed project is subject to the City's Municipal Code requirement for payment of park fees, the dedication of land for park and recreational purposes, or both. Therefore, for purposes of this analysis, the geographic area for potential cumulative impacts on recreational facilities is the City. The proposed project, in conjunction with the related projects in the City, would increase the City's population (refer to Table 4.A and Figure 4.1, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, for the descriptions and locations of these related projects). However, the proposed project includes on-site recreational facilities for its residents, which reduces the project demand for off-site recreational facilities. In addition, the Applicant/Developer would pay any required park fees as described in Regulatory Compliance Measure REC-1. Moreover, the applicants for the related projects that involve residential development in the City (Related Projects 1–4) would also be required to either dedicate land and/or pay park fees for the purposes of providing park and recreational facilities consistent with the City's Municipal Code requirements to offset their respective impacts related to parks and recreation.

Therefore, the cumulative impact of the proposed project and the applicable related projects would be less than significant with respect to recreational facilities and, in any event, the proposed project's contribution to a potentially significant cumulative impact on park and recreational facilities would not be cumulatively considerable.

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4.15 TRANSPORTATION

This section analyzes the existing and planned transportation and circulation conditions for the proposed Cypress City Center project (proposed project) and the surrounding area, and identifies circulation impacts that may result subsequent to the development of the proposed project. The analysis contained in this section is based on the *Traffic Impact Analysis for the Cypress City Center Project, Cypress, Orange County, California* (TIA) (LSA, December 2019), which is provided in Appendix J to this Environmental Impact Report (EIR).

4.15.1 Methodology

The TIA prepared for the project is consistent with the objectives and requirements of the City of Cypress, the City of Los Alamitos, and the *Orange County Congestion Management Program* (CMP) (County of Orange 2019), as well as applicable provisions of the California Environmental Quality Act (CEQA), including disclosure of project impacts in both existing and cumulative horizon years.

The scope of work for the TIA, including the project study area, was reviewed and approved by the City's Traffic Engineer prior to the preparation of the TIA. Study area locations were selected in consultation with City staff. The study area analyzed in the project TIA includes the following 19 intersections (5 intersections in Cypress, 6 intersections in both Cypress and Los Alamitos, 7 intersections in Los Alamitos, and 1 interchange along Interstate 605 (I-605) that is under the jurisdiction of the California Department of Transportation [Caltrans]):

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/Katella 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)

4.15.1.1 Intersection Level of Service Methodologies

In accordance with the requirements of 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 resulting ICU is expressed in terms of level of service (LOS), where LOS A represents free-flow operation and LOS F represents over capacity 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	≤0.60
B	>0.60 and ≤0.70
C	>0.70 and ≤0.80
D	>0.80 and ≤0.90
E	>0.90 and ≤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), 6th 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 following table illustrates the relationship of delay to LOS for unsignalized and signalized intersections.

Level of Service	Intersection Delay (seconds) per Vehicle (HCM Methodology)	
	Signalized	Unsignalized
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	>80.0	>50.0

HCM = *Highway Capacity Manual* (Transportation Research Board 2017)

It should be noted that since the HCM 6th 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 (Lexington Drive/Farquhar Avenue).

4.15.1.2 Thresholds 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. In addition, Valley View Street and Katella Avenue are designated in the Orange County CMP as CMP facilities, and intersections along these roadways must not be below LOS E.

Based on the 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 analysis, 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.

The *Caltrans Guide for the Preparation of Traffic Impact Studies* (2002) 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. LOS C is considered the target LOS standard and was used in the TIA 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.

4.15.2 Existing Environmental Setting

4.15.2.1 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. 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.

Key roadways in the vicinity of the project site are as follows:

- **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 in 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.

Pedestrian Circulation. Sidewalks currently exist on both sides of Katella Avenue in the vicinity of the project site. There are pedestrian crosswalks at all signalized intersections in the vicinity of the project site. 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 a Class I bicycle lane on the south side of Cerritos Avenue between Walker Street and Denni Street. On-street bicycle lanes (Class II) and sidewalks are provided on both sides of Moody Street. There are no bicycle lanes on Katella Avenue.

Transit Facilities. 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 the Cities of Orange and Long Beach via Katella Avenue. OCTA Route 50 runs at an approximately 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 an approximately 60-minute headway during weekday peak hours.

4.15.2.2 Existing Traffic Volumes and LOS Analysis

Existing turn movement counts were provided by the City of Cypress for nine of the study area intersections (October 2018) and additional turning movement counts were conducted for the remaining 10 study area intersections in May of 2019. All counts were conducted by National Data & Surveying Services (NDS).

Table 4.15.A summarizes the results of the existing peak-hour LOS analysis for the study area intersections. As discussed above, the ICU methodology for signalized intersections compares the 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 HCM intersection methodology presents LOS in terms of delay (in seconds per vehicle). The resulting delay is expressed in terms of LOS, as in the ICU methodology. As shown in Table 4.15.A, all study area intersections currently operate at satisfactory LOS during both peak hours.

Table 4.15.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
		Signal (Delay)	AM	2.8	A
			PM	4.1	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 (Delay)	AM	8.8	A
			PM	9.7	A
19	Los Alamitos Boulevard/Farquhar Avenue	Signal	AM	0.614	B
			PM	0.618	B

Note: Delay is reported in seconds.
AWSC = all-way stop control
I-605 = Interstate 605
ICU = Intersection Capacity Utilization
LOS = level of service

4.15.3 Regulatory Setting

4.15.3.1 Federal Regulations

No federal policies or regulations pertaining to transportation are applicable to the proposed project.

4.15.3.2 State Regulations

Senate Bill 743. On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that changes the methodology of a transportation impact analysis as part of CEQA requirements. SB 743 directed the California Office of Planning and Research (OPR) to establish new CEQA guidance for jurisdictions that removes the LOS method, which focuses on automobile vehicle delay and other similar measures of vehicular capacity or traffic congestion, from CEQA transportation analysis. Rather, vehicle miles traveled (VMT), or other measures that promote "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses," are now be used as the basis for determining significant transportation impacts in the State.

***State CEQA Guidelines* Section 15064.3, Subdivision (b).** In January 2018, the State of California Office of Planning and Research (OPR) submitted a proposal for comprehensive updates to the *State CEQA Guidelines* to the California Natural Resources Agency. The submittal included proposed updates related to the analysis of greenhouse gas (GHG) emissions, energy, transportation impacts pursuant to SB 743, and wildfires, as well as revisions to Section 15126.2(a) in response to the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369. On December 28, 2018, the updated *State CEQA Guidelines* went into effect.

As part of the update to the *State CEQA Guidelines*, Section 15064.3 was added and codifies that project-related transportation impacts are typically best measured by evaluating the project's VMT. Specifically, subdivision (b) focuses on specific criteria related to transportation analysis and is divided into four subdivisions: (1) land use projects, (2) transportation projects, (3), qualitative analysis, and (4) methodology. Subdivision (b)(1) provides guidance on determining the significance of transportation impacts of land use projects using VMT; projects located within 0.5 mile of high quality transit should be considered to have a less than significant impact. Subdivision (b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT, such as pedestrian, bicycle, and transit projects, should be presumed to have a less than significant impact. Subdivision (b)(3) acknowledges that Lead Agencies may not be able to quantitatively estimate VMT for every project type; in these cases, a qualitative analysis may be used. Subdivision (b)(4) stipulates that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. Although an agency may elect to be governed by the provisions of this section immediately, it is not required until July 1, 2020.

At this time, the City has not adopted a methodology to analyze VMT impacts within its jurisdiction. In addition, the City does not currently have thresholds or standards in place for assessing potential VMT impacts. Therefore, traffic impacts in this Draft EIR are based on the City's LOS thresholds.

4.15.3.3 Regional Regulations

Orange County Congestion Management Program. The Orange County Transportation Authority (OCTA) is a multimodal transportation agency that began in 1991 with the consolidation of seven separate agencies. OCTA serves Orange County residents and travelers by providing the following: countywide bus and paratransit service; Metrolink rail service; the 91 Express Lanes; freeway, street, and road improvement projects; individual and company commuting solutions; motorist aid services; and regulation of taxi operations. State law requires that a Congestion Management Program (CMP) be developed, adopted, and updated biennially for every county that includes an urbanized area, and requires that it include every city and the county government within that county. As the Congestion Management Agency for Orange County, OCTA is responsible for implementing the Orange County CMP.

OCTA adopted the CMP in 1991 to reduce traffic congestion and to provide a mechanism for coordinating land use and development decisions in Orange County. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects.

4.15.3.4 Local Regulations

City of Cypress General Plan. The Cypress General Plan is the primary source of long-range planning and policy direction that will guide growth and preserve the quality of life within the community. The future of Cypress, like that of all cities, will be the result of past and current decision making by those who have a local role in the development process, including residents, property and business owners, elected officials and City staff. The 2000 General Plan Update supersedes the 1993 General Plan Update and is based upon the community's vision for Cypress and expresses the community's long-term goals. Implementation of the Cypress General Plan will ensure that future projects and improvements are consistent with the community's goals, policies, and objectives.

Circulation Element. The Circulation Element is a general guide for the planning, development, and enhancement of the City of Cypress circulation system, based on existing and anticipated land uses. Most transportation-related plans and programs are established with the goal of maintaining acceptable operating LOS on the City's transportation system. The City of Cypress has adopted LOS D or better as the desired citywide operating standard for most City streets. However, given the influence of regional traffic on Valley View Street, Lincoln Avenue, and Katella Avenue, which are beyond the control of the City of Cypress, LOS E or better has been adopted as the minimum operating Level of Service for street segments and intersections on these arterials. The Circulation Element goals and policies define the City's vision for a balanced, efficient circulation system which incorporate many modes of travel and which allows for the safe movement of people and goods in and around Cypress. Based on the Circulation Element, the local and regional street network is built out in Cypress. Similarly, the bikeway system is generally built out in the project vicinity, with the exception of a planned bike lane on Walker Street south of Cerritos Avenue. This proposed bike lane would connect to the existing bike lane on Walker Street north of Cerritos Avenue.

City of Los Alamitos General Plan. The City of Los Alamitos General Plan establishes a comprehensive framework through which the City manages its growth and development to ensure it efficiently and effectively provides public facilities and services. The General Plan guides land use

and development for the entire Los Alamitos planning area, which includes the City, JFTB Los Alamitos, and the unincorporated community of Rossmoor. The General Plan identifies JFTB Los Alamitos as Community & Institutional/JFTB. The Los Alamitos City Council adopted an updated General Plan on March 23, 2015, to better reflect current conditions, refine goals and policies, and position the City for success over the next 20 years through the year 2035. The new General Plan replaces the previous plan adopted in 1990.

Mobility and Circulation Element. The City of Los Alamitos analyzes the operation of the roadway system in Los Alamitos and Rossmoor in terms of LOS. Similar to the City of Cypress, 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.

4.15.4 Thresholds of Significance

The thresholds for transportation impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to transportation if it would:

Threshold 4.15.1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Threshold 4.15.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Threshold 4.15.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Threshold 4.15.4: Result in inadequate emergency access?

4.15.5 Project Impacts

Threshold 4.15.1: Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact. The proposed project would be required to comply with General Plan policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The proposed project would also be required to comply with the City's transportation-related goals, policies, and metrics for determining traffic impacts, as well as the *Orange County Congestion Management Program* (CMP) (2019). The project's consistency with these plans is described in detail below.

A trip generation analysis was conducted to determine the number of trips that would occur following implementation of the project. As shown in Table 4.15.B, the project has the potential to generate approximately 4,978 average daily trips (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.

Table 4.15.B: Project Trip Generation Summary

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
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[2]			(375)	(1)	(1)	(2)	(26)	(26)	(52)
Shopping Center Pass-By Trip Reduction (PM-34%)[3]			0	0	0	0	(11)	(12)	(23)
Net Trip Generation			**4,978**	**68**	**96**	**164**	**176**	**147**	**323**

[1] 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.

[2] 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%).

[3] Pass-by percentages are based on the ITE *Trip Generation Handbook*, 3rd Edition.

ADT = average daily trips
du = dwelling units
TSF = thousand square feet

In order to determine impacts at roadway intersections associated with implementation of the project (i.e., the Existing Plus Project condition), the results of the trip generation analysis for the proposed project were added to existing baseline traffic volumes at the study area intersections. Tables 4.15.C summarizes the results of the Existing Plus Project peak hour LOS analysis. As shown in Table 4.15.C, with the addition of the project, all study area intersections would continue to operate at satisfactory LOS during both peak hours. Project impacts are based on LOS significance criteria of the City of Cypress (for Cypress intersections) and/or the City of Los Alamitos (for Los Alamitos intersections). As previously stated, vehicle access to the project site would be provided via Siboney Street, Winners Circle, and a right-turn-in/out-only driveway directly on Katella Avenue.

Both intersections of Siboney Street/Katella Avenue and Winners Circle/Katella Avenue are analyzed as study intersections in the TIA, and would operate at LOS B or better during both peak hours in the Existing Plus Project and Opening Year Plus Project Conditions.

Table 4.15.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
		Signal (Delay)	AM	2.8	A	2.9	A	0.1	No
			PM	4.1	A	4.1	A	0.0	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

Note: Delay is reported in seconds.
AWSC = all-way stop control
I-605 = Interstate 605
ICU = Intersection Capacity Utilization
LOS = level of service

As such, the proposed project would not conflict with applicable provisions in the City's General Plan Circulation Element regarding the maintenance of a safe, efficient, economical, and aesthetically pleasing transportation system providing for the movement of people, goods, and services to serve the existing and future needs of the City of Cypress. Additionally, the proposed project would be consistent with all relevant goals included in the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy regarding transit and active transportation as shown in Table 4.10.A in Section 4.10, Land Use and Planning.

Therefore, the project could be implemented with no significant peak-hour impacts when compared to existing conditions. No mitigation would be required.

Less Than Significant Impact.

Conformance with the Orange County CMP As previously noted, a TIA is required for CMP purposes for any proposed development generating 2,400 or more daily trips, with the exception of developments that will directly access a CMP Highway System roadway segment, for which the threshold for requiring a TIA is reduced to 1,600 or more trips per day. Because the proposed project is estimated to generate 4,978 daily trips, a TIA was prepared for the proposed project in compliance with CMP standards.

The CMP Highway System includes two roadway arterials in the project area: Valley View Street and Katella Avenue. In addition, 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 CMP requirements, the study area for a project must extend far enough to cover any CMP roadway segment on which the project traffic would represent 3 percent or more of the roadway segment's LOS E capacity. According to the OCTA's *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.

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 traffic study area boundaries based on the distribution of project trips throughout the traffic study area. Therefore, the traffic 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, as discussed elsewhere in this section, the project is not expected to result in a significant traffic impact at any CMP intersection, as shown in Table 4.15.C above and in Table 4.15.D provided later in this section. Therefore, this TIA complies with the CMP requirements.

Threshold 4.15.2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. According to *State CEQA Guidelines* Section 15064.3(a), project-related transportation impacts are generally best measured by evaluating the project's

vehicle miles traveled (VMT). VMT refers to the amount and distance of automobile travel attributable to a project.

State CEQA Guidelines Section 15064.3(b) sets forth criteria for analyzing transportation impacts, breaking down the methodology based on project type and specifying other criteria for conducting VMT analysis.

For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects located within 0.5 mile of an existing high-quality transit corridor should be considered to have a less than significant impact. *State CEQA Guidelines* Section 15064.3(b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT, such as pedestrian, bicycle, and transit projects, should be presumed to have a less than significant impact. Subdivision (b)(3) of the *State CEQA Guidelines*, Section 15064.3, acknowledges that Lead Agencies may not be able to quantitatively estimate VMT for every project type; in these cases, a qualitative analysis may be used. The regulation goes on to state that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. (*State CEQA Guidelines* Section 15064.3(b)(4)). It is important to note that *State CEQA Guidelines* Section 15064.3(c) states that while an agency may elect to be governed by the provisions of this section immediately, it is not required until July 1, 2020.

At this time, the City has not adopted a methodology to analyze VMT impacts within its jurisdiction. In addition, the City does not currently have thresholds or standards in place for assessing potential VMT impacts. Therefore, traffic impacts in this Draft EIR are based on the City's LOS thresholds and the analysis provided under Threshold 4.15.1, above.

Threshold 4.15.3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. As discussed in Chapter 3.0, Project Description, the proposed project does not propose any major traffic infrastructure improvements. In addition, as described in Section 4.10, Land Use and Planning, the project would not include any land uses that would be incompatible with surrounding uses. The proposed project would generate a similar vehicle mix to other surrounding land uses, consisting primarily of single-occupancy vehicles and distribution trucks. Additionally, all new driveways at the project site would be subject to the provisions of the City of Cypress design standards to alleviate design feature and safety hazards, which would reduce any potential impacts to less than significant levels. Therefore, the proposed project's impacts would be less than significant. No mitigation is required.

Threshold 4.15.4: Would the project result in inadequate emergency access?

Less Than Significant Impact. The project site would be accessed 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. As discussed above under Threshold 4.15.4, the project driveways would be designed to conform to the City's standards. Therefore, the project's impacts associated with emergency access would be less than significant. No mitigation is required.

4.15.6 Level of Significance Prior to Mitigation

Information related to *State CEQA Guidelines* Section 15064.3 subdivision (b) was not provided because the City has not yet adopted VMT metrics or thresholds of significance related to VMT, and the use of VMT is not yet required under Section 15064.3. The proposed project would have less than significant impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, hazards due to geometric design features and emergency access. In addition, the project is not expected to result in a significant impact at any CMP intersection. Therefore, no mitigation is required.

4.15.7 Regulatory Compliance Measures and Mitigation Measures

No regulatory compliance measures or mitigation measures are required for the proposed project.

4.15.8 Level of Significance after Mitigation

The proposed project's impacts related to traffic/transportation would be less than significant. No mitigation is required.

4.15.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. The cumulative impact area for traffic/transportation is the traffic study area outlined in the TIA, which includes 17 intersections in the Cities of Cypress and Los Alamitos. A list of approved/ pending projects provided by the Cities of Cypress and Los Alamitos and the surrounding Cities of Garden Grove, Stanton, La Palma, Buena Park, and Hawaiian Gardens were reviewed to determine whether projects in the vicinity of the project site (if any) should be included in the cumulative condition. With concurrence from the City of Cypress, all 17 of the related projects listed in Table 4.A, Summary of Related Projects, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures, were included in the cumulative (Opening Year 2021) condition.

4.15.9.1 Project Plus Cumulative (Opening Year 2021) Condition

Less Than Significant Impact. According to the Applicant/Developer, the project would open in 2021. To develop a Year 2021 condition, an ambient growth rate of 0.5 percent per year (i.e., 1.5 percent total growth for 3 years) was applied to the existing traffic counts. This condition also included the proposed project trips. 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 in the project vicinity.

Table 4.15.D summarizes the results of the Existing Plus Project Plus Cumulative peak hour LOS analysis for the study area intersections. As shown in Table 4.15.D, with the addition of the proposed 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.

Table 4.15.D: Existing Plus Project Plus Cumulative Intersection

	Intersection	Control	Peak Hour	Opening Year ICU/ Delay	Opening Year LOS	Opening Year Plus Project ICU/ Delay	Opening Year Plus Project LOS	Project Impact Δ ICU/ Delay	Project Impact 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
		Signal (Delay)	AM	3.0	A	4.0	A	1.0	No
			PM	4.2	A	4.3	A	0.1	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

Note: Delay is reported in seconds.
AWSC = all-way stop control
I-605 = Interstate 605
ICU = Intersection Capacity Utilization
LOS = level of service

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4.16 TRIBAL CULTURAL RESOURCES

This section provides a discussion of the existing tribal cultural resource environment and an analysis of potential impacts to tribal cultural resources from implementation of the Cypress City Center project (proposed project). According to California Public Resources Code (PRC) Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., Assembly Bill 52), "tribal cultural resources" are defined as the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either: (A) included or determined to be eligible for inclusion in the California Register of Historical Resources; or (B) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1

This section summarizes information obtained from Senate Bill (SB) 18 and Assembly Bill (AB) 52 Native American consultation efforts. The record of these consultation efforts is contained in Appendix J of this Environmental Impact Report (EIR).

4.16.1 Methodology

4.16.1.1 Senate Bill 18

The Native American Heritage Commission (NAHC) was contacted on July 11, 2019, to conduct a Sacred Lands File (SLF) search and provide a Native American Contact List for the project site pursuant to SB 18. The NAHC responded on August 1, 2019, stating that an SLF search was completed for the project site with negative results. The NAHC recommended that 21 Native American individuals representing the Cahuilla, Gabrielino, Juaneño, Luiseño, Cupeño Luiseño, and Cahuilla Luiseño groups be contacted for information regarding cultural resources that could be affected by the project. These 21 individuals were contacted via letter sent on August 26, 2019, and contacted again between September 9, 2019, and September 27, 2019, via email or phone as a follow-up. Responses were received from Agua Caliente Band of Cahuilla Indians, Gabrieleno Band of Mission Indians – Kizh Nation, Pala Band of Mission Indians, Pechanga Band of Luiseño Indians, Rincon Band of Luiseño Indians, and San Luis Rey Band of Mission Indians. Of those responses, only one was a request to consult on the project – received from the Gabrieleno Band of Mission Indians – Kizh Nation. SB 18 consultation with the Gabrieleno Band of Mission Indians – Kizh Nation was conducted concurrently with AB 52 consultation.

4.16.1.2 Assembly Bill 52

The NAHC was contacted on November 18, 2019, to conduct an SLF search and provide a Native American Contact List for the project site pursuant to AB 52. The NAHC responded on December 4, 2019, stating that an SLF search was completed for the project site with negative results. The NAHC also recommended that 29 Native American individuals representing the Cahuilla, Diegueño, Gabrielino, Juaneño, Luiseño, Cupeño Luiseño, Cahuilla Luiseño, and Kumeyaay groups be contacted for information regarding cultural resources that could be affected by the proposed project. These 29 individuals were contacted by the City of Cypress (City) via a letter sent on December 11, 2019.

Letters were also sent to three individuals who had requested to be notified of projects during AB 52 consultation, representing the Gabrielino, Juaneño, and Luiseño groups. Two of the additional letters were sent via mail on December 16, 2019, and the third letter was sent via email on December 13, 2019, as no mailing address was provided. With the exception of the Gabrieleno Band of Mission Indians – Kizh Nation, no responses were received. AB 52 consultation with the Gabrieleno Band of Mission Indians – Kizh Nation was conducted concurrently with SB 18 consultation.

4.16.2 Existing Environmental Setting

The area that is now the City of Cypress was prehistorically occupied by Native Americans. This area is within the traditional boundaries of the Gabrielino.

4.16.3 Regulatory Setting

4.16.3.1 Federal Regulations

There are no federal regulations that are applicable to tribal cultural resources relevant to the proposed project.

4.16.3.2 State Regulations

Senate Bill 18 (SB 18) Tribal Consultation. California Government Code Section 65352.3 (adopted pursuant to the requirements of SB 18) requires local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a General or Specific Plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction and are identified, upon request, by the NAHC. As noted in the Governor's Office of Planning and Research's *Tribal Consultation Guidelines, Supplement to General Plan Guidelines* (2005)[1], "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

Assembly Bill 52 (AB 52) Tribal Consultation. California PRC Section 21080.3.1 and Chapter 532, Statutes 2014 (i.e., AB 52), require that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. The bill requires a lead agency to begin consultation with each California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report is required for a project. The bill specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a Notice of Preparation or a notice of Negative Declaration or Mitigated Negative Declaration filed on or after July 1, 2015. By requiring the lead

[1] Governor's Office of Planning and Research (OPR). 2005. *Tribal Consultation Guidelines, Supplement to General Plan Guidelines*. April 15, 2005. Website: https://www.parks.ca.gov/pages/22491/files/tribal_consultation_guidelines_vol-4.pdf 9 (accessed January 2, 2020).

agency to consider these effects relative to tribal cultural resources and to conduct consultation with California Native American tribes, this bill imposes a State-mandated local program.

4.16.3.3 Regional Regulations

There are no regional regulations that are applicable to tribal cultural resources relevant to the proposed project.

4.16.3.4 Local Regulations

There are no local regulations that are applicable to tribal cultural resources relevant to the proposed project.

4.16.4 Thresholds of Significance

The thresholds for tribal cultural resources impacts used in this analysis are consistent with Appendix G of the *State of California Environmental Quality Act (CEQA) Guidelines* and the City's *Initial Study/Environmental Checklist*. The proposed project may be deemed to have a significant impact with respect to tribal cultural resources if it would:

Threshold 4.16.1: **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).**

Threshold 4.16.2: **Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

4.16.5 Project Impacts

Threshold 4.16.1: **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local**

register of historical resources as defined in Public Resources Code section 5020.1(k)?

No Impact. A cultural resources record search was completed on January 9, 2020, at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) at California State University, Fullerton. It included a review of all prehistoric and historic archaeological sites within a 0.25-mile radius of the project site, as well as a review of known cultural resource survey and excavation reports in that area. The California State Historic Resources Inventory (HRI), National Register of Historic Places (National Register), California Historical Landmarks (SHL), California Points of Historical Interest (SPHI), and various local historical registers were examined. The SCCIC record search included the project site and the areas within 0.25 mile of the project site. No archaeological resources have been previously recorded within the project site. There has been one archaeological resource previously recorded within 0.25 mile of the project site, the historic-period Navy Golf Course in Seal Beach (P-30-176854). One previous study (an archaeological pedestrian field survey) included the project site.

Native American consultations were conducted in compliance with SB 18 and AB 52. As part of these consultations, review of the SLF by the NAHC yielded negative results. Subsequently Native American representatives were contacted by the City to determine their desire to consult on the proposed project. During that process, the Gabrieleno Band of Mission Indians – Kizh Nation (Tribe) stated that the project site is within their tribal territory and requested consultation with the City. During a January 16, 2020, phone consultation meeting with City staff, Chairperson Andrew Salas of the Tribe was provided with a summary of the project and its location. Chairperson Salas provided the City staff who participated in the meeting with the history of his Tribe and the context in which they lived in the area, and indicated specific areas that were prehistoric travel routes for the Tribe. Due to concerns regarding the lack of historical development on the project site and the level of fill, the Tribe sent the City proposed mitigation measures for tribal cultural resources. On January 17, 2020, the City received the Tribe's proposed mitigation measures. The Tribe's recommendations were incorporated into draft mitigation measures for the proposed project by City staff and shared with the Tribe on January 29, 2020. On January 30, 2020, the Tribe accepted the proposed mitigation measures and indicated that consultation has concluded.

No information regarding specific known tribal cultural resources on the project site was provided by the Tribe. Therefore, no tribal cultural resources listed or eligible for listing in the California Register of Historical Resources (California Register) or in a local register exist within the project area, and there are no known tribal cultural resources on the project site. The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource defined as a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of or in a local register of historical resources as defined in PRC Section 5020.1(k), and no mitigation is required.

Threshold 4.16.2: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with

cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation Incorporated. Native American consultation was conducted in compliance with SB 18 and AB 52. As part of these consultations, review of the SLF by the NAHC yielded negative results. Subsequently Native American representatives were contacted by the City to determine their desire to consult on the proposed project. During that process, the Gabrieleno Band of Mission Indians – Kizh Nation Tribe stated that the project site is within their tribal territory and requested consultation with the City. As discussed above, the Tribe proposed mitigation measures during the AB 52 and SB 18 consultation processes. The Tribe's recommendations have been incorporated into mitigation measures for the proposed project.

Regulatory Compliance Measure CUL-1 requires compliance with the State's Health and Safety Code for the treatment of human remains. Adherence to regulatory standards included in Regulatory Compliance Measure CUL-1 would reduce the impact of the proposed project on human remains to less than significant and addresses tribal concerns regarding the treatment of human remains.

Mitigation Measure TCR-1 requires the retention of a Gabrieleno Native American Tribal representative to monitor ground-disturbing construction activities associated with pad grading of Retail Building C (the northernmost retail building proposed directly to the west of Winners Circle) and all geopier installation throughout the site. Mitigation Measure TCR-1 further requires the retained Gabrieleno Native American Tribal representative to be present at the cultural resources awareness training for construction personnel and provide additional tribal cultural resources awareness information. Mitigation Measure TCR-1 also requires tribal monitoring during excavation trenching for dry utilities, water, sewer, storm drain, and underground detention basin installation.

4.16.6 Level of Significance Prior to Mitigation

No impacts to known tribal cultural resources listed or eligible for listing in the California Register or in a local register would occur. Prior to mitigation, the proposed project has the potential to result in significant impacts to previously undiscovered tribal cultural resources.

4.16.7 Regulatory Compliance Measures and Mitigation Measures

4.16.7.1 Regulatory Compliance Measures

Refer to Regulatory Compliance Measure CUL-1 in Section 4.4, Cultural Resources.

4.16.7.2 Mitigation Measures

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

associated with pad grading of Retail Building C (the northernmost retail building proposed directly to the west of Winners Circle) and 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 is 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.

4.16.8 Level of Significance after Mitigation

No impacts to known tribal cultural resources listed or eligible for listing in the California Register or in a local register would occur. Mitigation Measure TCR-1 would reduce potential impacts to newly discovered tribal cultural resources to a less than significant level.

4.16.9 Cumulative Impacts

Potential impacts of the proposed project to unknown tribal cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Cypress, could contribute to a cumulatively significant impact due to the overall loss of tribal cultural resources in the region. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to tribal cultural resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures that would reduce or avoid significant impacts.

When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant. As such, adherence to the regulatory standards in Regulatory Compliance Measure CUL-1 and implementation of Mitigation Measure TCR-1 would ensure that the proposed project, together with the related projects, would not result in significant cumulative impacts to tribal cultural resources.

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4.17 UTILITIES AND SERVICE SYSTEM

This section describes the utility providers within whose jurisdiction the project site is located and evaluates the potential impacts of the Cypress City Center project (proposed project) on utilities and service systems. This section is based on multiple data sources, including: written correspondence and coordination with utility providers (Appendix I) and the California Emissions Estimator Model (CalEEMod) outputs generated for the proposed project (Appendix B). This section addresses the following utilities and service systems (service providers are noted in parentheses).

- Electricity (Southern California Edison [SCE])
- Natural Gas (Southern California Gas Company [SoCalGas])
- Solid Waste (Valley Vista Services; Orange County Waste and Recycling [OCWR])
- Wastewater (Orange County Sanitation District [OCSD])
- Potable Domestic Water (Golden State Water Company [GSWC])
- Storm Drainage (Orange County Flood Control District [OCFCD]).

4.17.1 Methodology

Utility providers were sent a questionnaire requesting information regarding current service provided to the project site and possible constraints or impacts to this service associated with project buildout, which is anticipated to occur in 2021. The impact analyses are based on information obtained through subsequent phone conversations with utility provider representatives, data obtained through websites, and adopted planning documents of the service and utility providers. This analysis also includes CalEEMod outputs generated for the proposed project, which are included in Appendix B of this Environmental Impact Report (EIR). Correspondence with utility providers is included in Appendix I.

4.17.2 Existing Environmental Setting

4.17.2.1 Electricity

In 2017, California's electricity was generated primarily by natural gas (33.67 percent), coal (4.13 percent), large hydroelectric (14.72 percent), nuclear (9.08 percent), and renewable sources (29 percent). Total electric generation in California in 2017 was 292,039 gigawatt-hours (GWh), up 0.5 percent from the 2016 total generation of 290,567 GWh. In 2017, California produced approximately 70.7 percent and imported 29.3 percent of the electricity it used.[1]

The project site is within the service territory of SCE, which provides services through a grid of transmission lines and related facilities. SCE provides electricity to more than 15 million people in a 50,000-square-mile (sq mi) area of Central, Coastal, and Southern California.[2] According to the

[1] California Energy Commission (CEC). 2019e. Notice of Request for Public Comments on the Draft Scoping Order for the 2019 Integrated Energy Policy Report. Docket No. 19-IEPR-01.

[2] Southern California Edison (SCE). 2019. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed December 12, 2019).

California Energy Commission (CEC), total electricity consumption in the SCE service area in 2018 was 84,000 GWh.[1] Total electricity consumption in Orange County in 2018 was 19,858 GWh (6,814 GWh for the residential sector and 13,044 GWh for the non-residential sector).[2]

4.17.2.2 Natural Gas

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply.[3] SoCalGas, the service provider for the project site, serves approximately 21.8 million customers in a 24,000 sq mi service territory.[4] SoCalGas has four storage fields—Aliso Canyon, Honor Rancho, La Goleta, and Playa del Rey—and has a combined storage capacity of 74 billion cubic feet.[5]

According to the California Energy Commission (CEC), total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms (2,147.4 million therms for the residential sector and 987.5 million therms for the commercial sector).[6] Total natural gas consumption in Orange County in 2018 was 575.1 million therms (339.0 million therms for the residential sector and 236.1 therms for the non-residential sector).[7]

4.17.2.3 Solid Waste

The City of Cypress (City) currently contracts with Valley Vista, a private solid waste hauler, to collect and dispose of the solid waste/refuse generated by the City. Solid waste/refuse collected in the City by Valley Vista would be transported to one of the Class III landfills operated and maintained by OCWR. Class III landfills only accept non-hazardous municipal solid waste for disposal; no hazardous or liquid waste is accepted. County residents are able to dispose of their household hazardous waste items at any of OCWR's four household hazardous waste collection centers. Currently, OCWR maintains and operates three Class III sanitary landfills, identified below in Table 4.17.A.

Of the three Class III landfills currently operated by OCWR, the closest active landfill to the project site is the Olinda Alpha Landfill.

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1 CEC. 2019b. Electricity Consumption by Entity. Website: http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed December 19, 2019)

2 CEC.. 2019a. Electricity Consumption by County. Website: http://www.ecdmsenergy.ca.gov/elecbycounty.aspx (accessed December 12, 2019).

3 CEC. 2019f. Supply and Demand of Natural Gas in California. Website: https://ww2.energy.ca.gov/almanac/naturalgas_data/overview.html (accessed December 9, 2019).

4 SoCalGas. Company Profile: About SoCalGas Webpage. Website: https://www.socalgas.com/about-us/company-profile (accessed December 11, 2019)

5 U.S. Energy Information Administration (EIA). 2019. Today in Energy Webpage. Website: https://www.eia.gov/todayinenergy/detail.php?id=36416 (accessed December 11, 2019)

6 CEC. 2019d. Natural Gas Consumption by Entity. Website: https://ecdms.energy.ca.gov/gasbyutil.aspx (accessed December 11, 2019)

7 CEC. 2019c. Gas Consumption by County. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed December 12, 2019).

Table 4.17.A: Orange County Class III Landfills

Landfill	Location	Approximate Distance from Project Site (miles)	Service
Frank R. Bowerman	11002 Bee Canyon Access Road Irvine, CA 92602	20	Commercial dumping No public dumping
Olinda Alpha	1942 North Valencia Avenue Brea, CA 92823	15	Commercial dumping Public dumping allowed
Prima Deshecha	32250 La Pata Avenue San Juan Capistrano, CA 92675	33	Commercial dumping Public dumping allowed

Source: Orange County Waste and Recycling.

The Olinda Alpha Landfill is scheduled to close in approximately 2030, at which time it will be landscaped to become a County Regional Park.[1] The Olinda Alpha Landfill is currently permitted by the California Department of Resources, Recycling, and Recovery (CalRecycle) to receive a maximum of 8,000 tons per day (tpd) of waste, but currently receives an average of approximately 7,000 tpd.[2] Therefore, the Olinda Alpha Landfill currently operates at approximately 87.5 percent of its daily capacity. As of November 2014, the Olinda Alpha Landfill had an estimated remaining disposal capacity of 34,200,000 cubic yards.[3]

4.17.2.4 Wastewater

The project site is in the sewer service area of the Orange County Sanitation District (OCSD). The OCSD provides wastewater collection, treatment, and recycling for approximately 2.6 million people living within a 479 sq mi area of central and northwestern Orange County.[4] The OCSD's facilities include 396 miles of sewer pipes and 15 pump stations located throughout the county. The OCSD treats approximately 185 million gallons of wastewater from residential, commercial, and industrial sources per day that is sent to two treatment plants: Plant No. 1 and Plant No. 2. Treatment Plant No. 1, at 10844 Ellis Avenue in Fountain Valley, is located approximately 10 miles southeast of the project site. Treatment Plant No. 2, at 22212 Brookhurst Street in Huntington Beach, is located approximately 12.5 miles southeast of the project site.

The OCSD is responsible for the provision of wastewater treatment facilities that serve the project site. Sewage from the City of Cypress is diverted to either Reclamation Plant No. 1 or Reclamation Plant No. 2. Excess wastewater from any of six trunk sewers tributary to Plant No. 1 are diverted to Plant No. 2 to not overload the capacity of Plant No. 1 and to provide for maintenance or construction activities.[5] Reclamation Plant No. 1 has a primary treatment capacity of 208 mgd,[1] and

1 Orange County Waste & Recycling. 2019. Landfill Information. Website: http://www.oclandfills.com/landfill (accessed December 12, 2019).

2 Ibid.

3 California Department of Resources, Recycling, and Recovery (CalRecycle). SWIS Facility Detail, Olinda Alpha Landfill (30-AB-0035). Website: https://www2.calrecycle.ca.gov/swfacilities/Directory/30-AB-0035 (accessed December 23, 2019).

4 Orange County Sanitation District (OCSD). 2018. *2017-2018 Annual Report.* Website: https://www.ocsd.com/Home/ShowDocument?id=26276 (accessed December 17, 2019).

5 OCSD. 2019a. 2018–2019 Annual Report Resource Protection Division Pretreatment Program. Website: https://www.ocsd.com/Home/ShowDocument?id=29255 (accessed December 17, 2019).

is running under capacity at approximately 120 mgd.[2] Reclamation Plant No. 2 has a primary treatment capacity of 168[3] mgd and currently receives 65 mgd. [4] Additionally, through its Capital Improvement Program, the OCSD strives to continue maintaining its facilities at optimal levels by planning, designing, and preparing for future demand by developing Facilities and Biosolids Master Plans that address 20-year planning horizons.[5]

4.17.2.5 Potable Domestic Water Service

GSWC provides domestic water service to the project site. GSWC's Los Alamitos service area includes Cypress, Los Alamitos, and Stanton; additionally, small portions of Buena Park, Garden Grove, La Palma, Seal Beach, and the unincorporated community of Rossmoor are included in the Los Alamitos service area. There are approximately 27,200 customers within GSWC's Los Alamitos service area.[6]

The 2015 West Orange Urban Water Management Plan (UWMP) demonstrates that GSWC has adequate domestic water supply for future water demands through 2040. GSWC obtains its water supply for the West Orange System from two primary sources: imported groundwater and GSWC-operated groundwater wells. Imported water is purchased from the Municipal Water District of Orange County (MWDOC). MWDOC is largely a pass-through provider of imported water, obtaining its water supply from the Metropolitan Water District of Southern California (MWD).[7] According to the UWMP, MWD intends to provide 100-percent supply reliability to MWDOC, which in turn provides 100-percent supply reliability to the West Orange System. Groundwater is extracted from 17 active, GSWC-owned wells in the Orange County Groundwater Basin.[8] The UWMP includes a water supply and demand assessment that demonstrates that adequate water supply, including both imported groundwater and groundwater from GSWC-owned wells, will be available to GSWC through 2040.[9]

As of 2015, recycled water was not used within the West Orange System. However, an existing agreement would allow GSWC to purchase recycled water from the Los Angeles County Sanitation District and provide the recycled water to Forest Lawn Memorial-Park in Cypress.[10] Therefore, projected water supply information in the UWMP includes recycled water as a source.

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1 OCSD. 2019b. Budget Update Fiscal Year 2019-2020. Website: https://www.ocsd.com/Home/ShowDocument?id=28411 (accessed December 17, 2019).
2 Ibid.
3 Ibid.
4 OCSD. 2019c. Facts and Key Statistics Webpage. Website: https://www.ocsd.com/services/regional-sewer-service (accessed December 1, 2019).
5 OCSD. 2019d. Capital Improvement Program Fiscal Year 2017/2018. Website: https://www.ocsd.com/Home/ShowDocument?id=26170 (accessed December 1, 2019).
6 Golden State Water Company (GSWC). 2019. Los Alamitos Customer Service Area. Website: http://www.gswater.com/los-alamitos/ (accessed August 23, 2019).
7 GSWC. 2016. *2015 Urban Water Management Plan, West Orange.* Section 6.1. July.
8 GSWC. 2016. *2015 Urban Water Management Plan, West Orange.* Section 6.2. July.
9 GSWC. 2016. *2015 Urban Water Management Plan, West Orange*. Section 7.3.
10 Ibid.

The total projected water demand for customers served by GSWC is approximately 16,722 acre-feet per year (afy) in 2020; the projected water demand increases every 5-year period, totaling 17,701 afy by 2040.[1] GSWC's planned water supplies for 2020 total 16,722 afy, which consists of 1,644 afy (9.8 percent) of imported water, 14,798 afy (88.5 percent) of groundwater from GSWC-owned wells, and 280 afy (1.7 percent) of recycled water.[2] Imported water from MWDOC is provided to the GSWC West Orange System through three connections, which have supply capacities of 4,500 gallons per minute (gpm), 11,200 gpm, and 9,000 gpm. These three connections together account for a total supply capacity of 24,700 gpm.[3] Over the next 20 years, imported water supplies are anticipated to comprise the same proportion of GSWC's water supply as under current conditions.

4.17.2.6 Storm Drain

As discussed in Section 4.9, Hydrology and Water Quality, in its existing condition, stormwater runoff on the on-site parking lot flows in an east/west orientation to two separate concrete ribbon gutters that transverse the project site and convey flow from north to south. In addition to on-site stormwater runoff, off-site stormwater runoff from 11.8 acres north of the project site is also tributary to the ribbon gutters. Each gutter conveys stormwater runoff to a separate existing catch basin that connects to an existing City maintained 33-inch storm drain that runs on the north edge Katella Avenue from east to west. The 33-inch storm drain increases to a 39-inch storm drain then to a 48-inch storm drain just downstream of the project site. Stormwater runoff that exceeds the capacity of catch basin inlets ponds in the parking lot to a depth of 12 to 18 inches before overflowing and discharging overland to the existing on-site driveway and into the Katella Avenue curb and gutter. The Katella Avenue stormdrain conveys stormwater runoff to the west, where it connects to the Los Alamitos Channel. Los Alamitos Channel flows southwest where it discharges into the San Gabriel River just north of its mouth, and then into the Pacific Ocean.

An existing 24-inch storm drain that runs north to south is located in Winners Circle between Katella Avenue and the end of the cul-de-sac. This stormdrain conveys stormwater runoff from Winners Circle to the Katella Avenue stormdrain. The approved stormdrain plan for the Winners Circle stormdrain included an extension to the north, past the end of the cul-de-sac, and then west across the existing parking lot just north of the project site. The stormdrain extension was proposed to accommodate restricted flows of 0.3 cfs/acre from the property north of the project site. However, only the portion of the stormdrain in Winners Circle was constructed.

4.17.2.7 Telecommunications Facilities

Telephone, television, and internet services are offered by a variety of providers in the City of Cypress, including AT&T, Frontier Communications, Spectrum, HughesNet, and ViaSat. Non-satellite providers include Frontier, DirectTV, Spectrum Cable, and DishTV. Satellite internet providers include ViaSat. These services are privately operated and offered to each location in the City for a fee defined by the provider.

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1 GSWC. 2016. *2015 Urban Water Management Plan, West Orange*. Section 4.2.1.
2 Ibid. 2016. Section 6.9.
3 Ibid. 2016. Section 6.1.

4.17.3 Regulatory Setting

4.17.3.1 Federal Regulations

There are no federal policies or regulation applicable to the proposed project.

4.17.3.2 State Regulations

Water Supply Assessment. California Public Resources Code (PRC) Section 21151.9 requires that any proposed "project," as defined in Section 10912 of the Water Code, prepare a Water Supply Assessment in compliance with Water Code Section 10910, et seq. Water Code Section 10910 et seq. outlines the necessary information and analysis that must be included in an EIR to ensure that a proposed land development has a sufficient water supply to meet existing and planned water demand over a 20-year horizon.

According to Water Supply Assessment requirements, a "project" is defined as any of the following:

- A residential development of more than 500 dwelling units;
- A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space;
- A commercial office building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- A hotel or motel, or both, having more than 500 rooms;
- An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- A mixed-use project that includes one or more of the projects specified above; and
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

If a public water system has fewer than 5,000 service connections, a "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

The proposed project would include the development of 251 dwelling units and 65,975 sf of commercial/retail space. GSWC has not published water demand factors for the Los Alamitos Customer Service Area. In the absence of these factors, estimated water demand for the proposed

project was compared to estimated water demand for a 500-unit low-rise apartment complex based on water demand factors in CalEEMod.

The proposed project's land uses would demand approximately 16 percent less water than a 500-unit low-rise apartment complex. Additionally, GSWC has more than 5,000 service connections. Therefore, the proposed project does not meet the definition of a "project" pursuant to Water Code Section 10912, and a Water Supply Assessment is not required for the proposed project.

Assembly Bill 341. Assembly Bill (AB) 341 extends the waste diversion requirements established under the California Integrated Waste Management Act of 1989 to the year 2020. In 1989, the California Legislature adopted the California Integrated Waste Management Act of 1989, which is administered by CalRecycle (formerly known as the California Integrated Waste Management Board) and requires each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan. Each adopted source reduction and recycling element was required to demonstrate the diversion of 50 percent of all solid waste from landfill disposal or transformation by January 1, 2000. Annual progress reports were required to be filed with the State Legislature that included specified information regarding the act. AB 341 further establishes the policy goal of the State that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020. AB 341 requires CalRecycle, by January 1, 2014, to provide a report to the Legislature that provides strategies to achieve that policy goal and also includes other specified information and recommendations in addition to the annual progress report.

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years. The 2019 Building Energy Efficiency Standards became effective on January 1, 2020. The efficiency standards apply to both new construction and rehabilitation of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

4.17.3.3 Regional Regulations

Metropolitan Water District 2015 Regional Urban Water Management Plan. MWD's 2015 Regional UWMP lists and describes the various uses, demand, supplies, target reductions, and compliance measures for 26 member agencies. These include 14 cities, 11 municipal water districts, and one county water authority serving approximately 18.7 million people in Southern California. The 2015 Regional UWMP found that under the current supply demands for a multiple-dry-year scenario (i.e., drought conditions), MWD would have sufficient supply to meet the projected growing demand for water from 2020 to 2040 while still meeting statewide reduction targets of 20 percent of 2009 levels by 2020. MWD is currently working to develop programs to increase its water supply and create a large surplus during multiple-dry-year scenarios to ensure that water demands will still be addressed

during emergency drought situations. With demands projected to be around 2.3 million acre-feet in 2040 during multiple-dry-year scenarios, MWD would have a surplus of 2,000 acre-feet with current capabilities and 288,000 acre-feet with the implementation of the programs under development.

Municipal Water District of Orange County 2015 Urban Water Management Plan. The region served by MWDOC is located in Orange County, California, and includes 26 cities (including the City of Cypress) and water districts, referred to as MWDOC member agencies. MWDOC's 2015 UWMP documents information on all sources of water supplies for the region—imported water, groundwater, surface water, recycled water, and wastewater—as a summary of information for regional planning. The plan concludes that the MWDOC service area will have sufficient existing and planned supplies to meet full service demands under every water-year hydrologic scenario from 2015 through 2040. The plan also evaluates each source of water in the region. The resource mix for meeting total demand includes local groundwater, recycled water, surface water, and imported water from MWD. The plan documents MWDOC's cooperative efforts with its member agencies in developing local supplies and finds that in the region the percentage of its supply from each source will remain approximately the same for the next 25 years, with 30 percent of its supplies from imported water and 70 percent of its supplies from local sources in 2040, even with projected growth occurring.

4.17.3.4 Local Regulations

Golden State Water Company 2015 Urban Water Management Plan (West Orange). GSWC published its 2015 West Orange UWMP, which outlines how GSWC will provide customers with a reliable supply of drinking water for the next 30 years. The 2015 UWMP provides the California Department of Water Resources with information regarding present and future water resources and demands and provides an assessment of GSWC's water resource needs. The 2015 UWMP utilizes factors that were evaluated in ensuring supply reliability in the MWDOC's 2015 UWMP and the MWD's 2015 Regional UWMP.

The UWMP conducts a supply assessment to meet the projected growing demand in its West Orange service area. The UWMP analyzes water supply during multiple-dry-year scenarios to ensure that water demands will still be addressed during emergency drought situations. The UWMP includes these multiple-dry-year scenarios in its analysis of future water demand.

City of Cypress Municipal Code. The Cypress Municipal Code includes the following requirements that would apply to the proposed project related to the provision of utilities:

- **Section 12-31 (Required Diversion Rates)** of the City's Municipal Code requires that the applicant for a covered project shall divert, at a minimum, the percentage of construction and demolition debris as specified by the California Green Building Standards.

- **Section 5-1 (California Building Codes—Adopted)** adopts the 2019 California Green Building Standards Code, 2019 Edition (Title 24). Generally, the intent of Title 24 is to provide efficiency standards for new construction and the rehabilitation of both residential and nonresidential buildings, including building energy consumption, water conservation, and operational efficiencies. Title 24 regulates building energy consumption for heating, cooling, ventilation,

water heating, and lighting with regard to both electricity and natural gas, while also regulating water consumption through the installation of efficient plumbing fixtures. Title 24 is included as Regulatory Compliance Measure E-1 below.

4.17.4 Thresholds of Significance

The thresholds for utilities and service system impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Initial Study/Environmental Checklist*. In determining whether the proposed project may have a significant impact with respect to utilities and service systems, it is necessary to consider whether it would:

Threshold 4.17.1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Threshold 4.17.2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Threshold 4.17.3: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Threshold 4.17.4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Threshold 4.17.5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

4.17.5 Project Impacts

Threshold 4.17.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

4.17.5.1 Water

Construction.

Less Than Significant Impact. Short term demand for water may occur during excavation, grading, and construction activities on site. Construction activities would require water primarily for dust mitigation purposes. Water from the existing potable water lines in the vicinity of the project site would be used. Overall, short-term construction activities would require minimal water and are not expected to have any adverse impacts on the existing water system or available water supplies. The proposed project would not require the construction of new or expanded water conveyance,

treatment, or collection facilities with respect to construction activities. Therefore, the impacts on water facilities during construction would be less than significant, and no mitigation is required**.**

Operation.

Less Than Significant Impact. The proposed project would include an on-site domestic water distribution system to serve the proposed residential and commercial/retail uses. The on-site system would be constructed in compliance with the City's building and plumbing codes in the Municipal Code. The proposed on-site distribution system would connect to the existing GSWC water facilities located within Katella Avenue adjacent to the southern border of the project site. Extension of the water infrastructure from the adjacent streets into the project site would be a routine part of the construction process analyzed in this EIR and would not have a material environmental impact. The water facility improvements would be limited to the project site and connection points to the adjacent, existing GSWC facilities. Therefore, the proposed project would not require or result in the construction of new water facilities, or the expansion of existing facilities, which could cause a significant environmental impact, and the impact would be less than significant. No mitigation is required.

4.17.5.2 Wastewater

Construction.

Less Than Significant Impact. No significant increase in wastewater flows is anticipated as a result of construction activities on the project site. Sanitary services during construction would be provided by portable toilet facilities, which transport waste off-site for treatment and disposal. Therefore, during construction, potential impacts to wastewater treatment and wastewater conveyance infrastructure would be less than significant, and no mitigation would be required.

Operation.

Less Than Significant Impact. The on-site network of private sewer mains and laterals for the proposed project would connect to the sewer mains along Katella Avenue and convey wastewater flows to OCSD's trunk line along Lexington Drive before eventually discharging to either OCSD's Reclamation Plant No. 1 or Reclamation Plant No. 2. Any sewer improvements associated with the proposed project would be designed and constructed to City and OCSD standards. The proposed project's site plans would be accompanied by adequate plans for sewer improvements prepared by a registered professional engineer and facilities would be dedicated to the City and/or OCSD at the completion of construction. Regulatory Compliance Measure UTIL-1 requires all sewer improvements to comply with City and OCSD sewage standards. With the implementation of Regulatory Compliance Measure UTIL-1, the proposed project would result in less than significant impacts related to the construction or expansion of wastewater treatment facilities. Therefore, the proposed project would not require or result in the construction of new water treatment or collection facilities, or the expansion of existing facilities, which could cause a significant environmental impact, and the impact would be less than significant. No mitigation is required.

4.17.5.3 Stormwater/Drainage

Construction.

Less Than Significant Impact. Grading and construction activities would disturb soils and temporarily modify the stormwater flow patterns on the construction site. As described under the analysis of Thresholds 4.9.1, 4.9.6, 4.9.11, 4.9.12, and 4.9.18 in Section 4.9, Hydrology and Water Quality, the proposed project would be subject to the requirements of the Construction General Permit (Regulatory Compliance Measure HYD-1), which requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) and identification of construction Best Management Practices (BMPs) that must be implemented during project construction to address potential impacts to hydrology and stormwater drainage, including soil erosion, siltation, spills, and runoff. Adherence to the regulatory standards described in Regulatory Compliance Measure HYD-1 would ensure that any changes in stormwater drainage from the project site are controlled during construction. Therefore, the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts, and the impact would be less than significant. No mitigation is required.

Operation.

Less Than Significant Impact. Refer to Section 4.9, Hydrology and Water Quality, for additional information regarding the proposed project's impacts related to hydrology during operation. The proposed project includes the construction of an on-site stormdrain system. Stormwater runoff would be discharged to the Katella Avenue stormdrain system via a new stormdrain connection. The Water Quality Management Plan (WQMP) prepared for the proposed project identified pollutants of concern that may affect the quality of discharges of stormwater from the site. The WQMP sets forth measures specified in the Countywide WQMP and the National Pollutant Discharge Elimination System (NPDES) Drainage Area Management Plan (DAMP) (2003), the assignment of long-term maintenance responsibilities, and the locations of all structural Best Management Practices, which are intended to provide measures that minimize or eliminate the introduction of pollutants into the stormwater system. Regulatory Compliance Measure HYD-3 in Section 4.9, Hydrology and Water Quality, requires the implementation of BMPs identified in Section IV of the *Water Quality Management Plan* and the drainage improvements identified in the *Hydrology and Hydraulics Study*.

The proposed detention system would reduce stormwater runoff from the project site to below existing conditions. The proposed project would implement one of two scenarios to convey off-site runoff that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue. Under Scenario 1, flow that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system would be conveyed around the project site before discharging to the storm drain in Katella Avenue. Under Scenario 2, those flows would be conveyed through the project site before discharging to the storm drain in Katella Avenue.

Under Scenario 1, the off-site flows would temporarily pond along the project site's northern property line at variable depths, depending on the magnitude of the storm event (e.g., 2-year, 10-year, and 100-year storm) before discharging to the west, into Siboney Street, then flowing overland to the south into Katella Avenue. This ponding would last for a short duration, would not flood any

structures, and would only affect the portions of the parking lot north of the project site that are farthest away from the Los Alamitos Race Course grandstand. The ponding along the project site's northern property line would be a temporary condition until the area to the north has been developed and a stormwater management and detention system is constructed during future development on the 11.8 acres to the north of the project site. Each development proposal received by the City is required to undergo environmental review pursuant to the California Environmental Quality Act (CEQA). If there were any potential for significant impacts to occur as a result of these future off-site drainage improvements, those impacts would be identified and appropriate mitigation measures would be imposed within the CEQA compliance document that would be prepared in support of future development on the property to the north of the project site.

Additionally, the proposed project would also be required to implement Regulatory Compliance Measure UTIL-2, which requires drainage system improvements to be designed and constructed to City and OCFCD standards. With the adherence to Regulatory Compliance Measure HYD-3 and Regulatory Compliance Measure UTIL-2, the proposed project would result in less than significant impacts related to the construction or expansion of stormwater drainage facilities. No mitigation is required.

4.17.5.4 Electric Power

Construction.

Less Than Significant Impact. Short-term construction activities would be limited to providing power to the staging area and portable construction equipment and would not substantially increase demand for electricity. The heavy equipment used for construction is primarily powered by diesel fuel. Temporary electric power would be provided via existing utility boxes and lines on the project site. Given the limited nature of potential demand for electricity during construction and the availability of existing power lines on the site, there would not be a need to construct new or alter existing electric transmission facilities. Impacts to local regional supplies of electricity would be less than significant, and no mitigation is required.

Operation.

Less Than Significant Impact. Operation of the proposed project would increase on-site electricity demand compared to existing conditions. CalEEMod 2016.3.2 was used to calculate the approximate annual electricity demand of the proposed project. The project site in existing condition is a parking lot with existing light poles. Therefore, current demand for electricity on the project site is negligible. As discussed in Section 4.5, Energy, based on the CalEEMod outputs (Appendix B of this EIR) the proposed project is estimated to consume a total of 2,238,566 kilowatt-hours (kWh) of electricity per year with the implementation of renewable energy (i.e., solar panels and LED lights) and USEPA energy star rating appliances. Additionally the proposed project would be required to comply with Title 24 energy efficiency measures and sustainability features of the California Building Code as described under Regulatory Compliance Measure E-1.

Additionally the proposed project would reduce electricity consumption by incorporating the following energy efficiency measures in the design of the proposed structures in addition to complying with Title 24 requirements:

- Increased insulation in walls and attic spaces.
- Cool roof features.
- Duct insulation and improved-efficiency heating, ventilation, and air conditioning systems.
- High-efficiency water heaters.
- Installation of daylighting features on all peripheral rooms.
- North/South alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.
- Shading by vegetation or overhangs.

The implementation of these energy efficiency measures and compliance with Title 24 requirements could potentially result in further reductions in the estimated electricity consumption of the proposed project.

Total electricity consumption in Orange County in 2018 was approximately 19,858,000,000 kWh. Therefore, the increased electricity demand associated with the proposed project would be approximately 0.01 percent of Orange County's total electricity demand. Service providers utilize projected demand forecasts in order to provide an adequate supply or plan for surplus in their service areas. As discussed in Section 4.5, Energy, there are sufficient planned electricity supplies in the SCE service area for estimated net increases in energy demands through 2030. Because the proposed project would only represent a small fraction of electricity demand in Orange County, the project would meet Title 24 requirements and incorporate additional energy conservation measures, and there would be sufficient electricity supplies available, energy demand for the proposed project would be less than significant.

The supply and distribution network within the area surrounding the project site would remain essentially the same as exists currently, with the exception of on-site improvements to connect to the existing infrastructure. These on-site improvements would provide electrical service to the residential, commercial, and retail uses proposed. The proposed project would not increase electrical demand beyond existing projections from the local electricity provider and the project site is within a developed service area with existing demand. Therefore, the proposed project would not require the construction of any physical improvements related to the provision of electricity service that would result in significant environmental impacts and the proposed project's impacts would be less than significant. No mitigation is required.

4.17.5.5 Natural Gas

Construction.

Less Than Significant Impact. Short-term construction activities would not result in demand for natural gas since construction activities/equipment would not require accessing existing adjacent natural gas facilities. Therefore, construction activities would not impact natural gas services, and the proposed project would not require new or physically altered gas transmission facilities.

Operation.

Less Than Significant Impact. The existing use of the project site as a parking lot does not require the consumption of natural gas. Therefore, operation of the proposed project would increase on-site natural demand compared to existing conditions. CalEEMod 2016.3.2 was used to calculate the approximate annual natural gas demand of the proposed project. As discussed in Section 4.5 Energy, the estimated potential increase in natural gas demand associated with the proposed project is 97,767 therms per year. Total natural gas consumption in Orange County in 2018 was 236,102,647 therms. Therefore, operation of the proposed project would negligibly increase the annual natural gas consumption in Orange County by approximately 0.04 percent. The estimated increase in natural gas demand associated with the proposed project would represent a very small fraction of the natural gas demand in Orange County. Additionally, the proposed project would be required to comply with Title 24 requirements as described under Regulatory Compliance Measure E-1 and would reduce natural gas consumption by incorporating the energy efficiency measures listed above in the design of the proposed structures.

As noted above, service providers utilize projected demand forecasts in order to provide an adequate supply or plan for surplus in their service areas. As discussed in Section 4.5, Energy, it is anticipated that SoCalGas would be able to meet the natural gas demand in its service area through 2035. Because the proposed project would only represent a small fraction of natural gas demand in Orange County, the project would meet Title 24 requirements and incorporate additional energy conservation measures, and there would be sufficient natural gas supplies available, natural gas demand for the proposed project would be less than significant. No mitigation is required.

The supply and distribution network within the area surrounding the project site would remain essentially the same as exists today except for standard on-site improvements, and levels of service to off-site users would not be adversely affected. Existing gas transmission and distribution services maintained by SoCalGas would provide natural gas service to the proposed project. The proposed project would not increase natural gas demand beyond existing projections from the local natural gas provider and the project site is within a developed service area with existing demand. Therefore, the proposed project would not require the construction of any physical improvements related to the provision of natural gas service that would result in significant environmental impacts and the proposed project's potential impacts would be less than significant. No mitigation would be required.

4.17.5.6 Telecommunication Facilities

Less Than Significant Impact. Telephone, cable, and internet service lines in the vicinity will be extended into the project site. Internal to the project site, the project Applicant/Developer will be responsible for constructing adequate telecommunication facility extensions to the various structures of the proposed project. The construction and expansion of these facilities would occur on site during the site preparation and earthwork phase and are not expected to impact any telephone, cable, or internet services offsite that serve the surrounding areas. Additionally, telecommunication facilities are generally installed concurrently with utility expansions and impacts associated with the expansion of telecommunications facilities are already considered in the air quality, noise, and construction traffic analysis. Therefore, the project impacts associated with the relocation or construction of new or expanded telecommunication facilities and impacts would be less than significant. No mitigation is required.

Threshold 4.17.2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. As discussed previously, the Golden State Water Company (GSWC) would provide water services to the project site and would connect the proposed project to the existing 10-inch water main along the north side of Katella Avenue.

The proposed residential units would result in a minor increase in water demand. However, as discussed in Section 4.12, Population and Housing, the proposed project would not induce substantial population growth. Additionally, the proposed project would be required to implement Regulatory Compliance Measure UTIL-3, which requires the project to use reclaimed water and to comply with all State laws for water conservation measures, including the use of low-flow fixtures. With the implementation of Regulatory Compliance Measure UTIL-3, the total water demand generated by the proposed project as estimated by the CalEEMod outputs would be approximately 107,750 gpd or 120.7 afy.

The estimated increase in water demand associated with the proposed project would represent 0.7 percent of the West Orange System's current annual water demand, based on the system's projected demand of 16,722 afy in 2020. The proposed project does not require the preparation of a Water Supply Assessment pursuant to California Public Resources Code Section 21151.9, as discussed previously, because the proposed project does not meet the definition of a "project" as set forth in Section 10912 of the Water Code. The proposed project does not meet any of the criteria listed in Water Code Section 10912 and is not a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project. Based on CalEEMod estimates, the proposed project is expected to demand approximately 16 percent less water than a 500-unit residential project.

As such, the proposed project would not necessitate new or expanded water entitlements, and the GSWC would be able to accommodate the increased demand for potable water. Therefore, with implementation of Regulatory Compliance Measure UTIL-3, impacts to water supplies would be less than significant. No mitigation is required.

Threshold 4.17.3: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. As discussed above, sewage from Cypress is diverted to either Reclamation Plant No. 1 in Fountain Valley or Reclamation Plant No. 2 in Huntington Beach. Reclamation Plant No. 1 has a primary treatment capacity of 208 mgd,[1] and is running under capacity at approximately 120 mgd.[2] Reclamation Plant No. 2 has a primary treatment capacity of 168[3] mgd and is running under capacity at approximately 65 mgd. [4]

The proposed project is anticipated to generate 80,223 gpd of wastewater. However, the 80,223 gpd of wastewater generated by the proposed project would only represent a small fraction of the primary daily treatment capacity of Reclamation Plant No. 1 and Reclamation Plant No. 2 (0.04 percent and 0.05 percent, respectively). Additionally, through its Capital Improvement Program, the OCSD strives to continue maintaining its facilities at optimal levels by planning, designing, and preparing for future demand by developing Facilities and Biosolids Master Plans that address 20-year planning horizons.[5] Through these long-range planning activities, the OCSD would be able to accommodate the growth in demand for wastewater treatment generated by the proposed project and other projects in its service area. Therefore, the proposed project would not result in a significant contribution to the capacity of Reclamation Plant No. 1 or Reclamation Plant No. 2. Additionally, fees required by the OCSD would sufficiently offset potential impacts generated by the proposed project. Therefore, the proposed project would result in less than significant impacts related to the wastewater treatment capacity and no mitigation measures are required.

Threshold 4.17.4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. As discussed above, the closest active landfill to the proposed project is the Olinda Alpha Landfill. The Olinda Alpha Landfill currently operates at approximately 87.5 percent of its daily capacity. As of November 2014, the Olinda Alpha Landfill had an estimated remaining disposal capacity of 34,200,000 cubic yards.[6]

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1 OCSD. 2019b. Budget Update Fiscal Year 2019–2020. Website: https://www.ocsd.com/Home/ShowDocument?id=28411 (accessed December 17, 2019).

2 Ibid.

3 Ibid.

4 OCSD. 2019c. Facts and Key Statistics Webpage. Website: https://www.ocsd.com/services/regional-sewer-service (accessed December 1, 2019).

5 OCSD. 2019d. Capital Improvement Program Fiscal Year 2017/2018. Website: https://www.ocsd.com/Home/ShowDocument?id=26170 (accessed December 20, 2019).

6 California Department of Resources, Recycling, and Recovery (CalRecycle). SWIS Facility Detail, Olinda Alpha Landfill (30-AB-0035). Website: https://www2.calrecycle.ca.gov/swfacilities/Directory/30-AB-0035 (accessed December 23, 2019).

Based on the CalEEMod outputs, the proposed project is estimated to generate 1,955 pounds of solid waste per day during operation. The incremental increase of solid waste generated by the proposed project would constitute 0.1 percent of the remaining daily available capacity (1,000 tpd) at the Olinda Alpha Landfill. Therefore, solid waste generated by the proposed project would not cause the capacity at the Olinda Alpha Landfill to be exceeded. As such, the proposed project would be served by a landfill with sufficient permitted capacity to accommodate its solid waste disposal needs. Therefore, the proposed project would result in less than significant impacts related to solid waste and landfill facilities, and no mitigation is required.

Threshold 4.17.5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. Solid waste practices in California are governed by multiple federal, State, and local agencies that enforce legislation and regulations ensuring that landfill operations minimize impacts to public health and safety and the environment. The project site is located within OCWR's service area. An important part of OCWR's mission is to apply sound environmental practices to ensure compliance with these regulations. Additionally, OCWR has an adopted CIWMP that requires countywide facilities to meet the 15-year capacity requirements. OCWR is also obligated to obtain a Solid Waste Facilities Permit, a Storm Water Discharge Permit, and permits to construct and operate gas management systems and meet Waste Discharge Requirements. The LEA, the SCAQMD, and the RWQCB enforce landfill regulations related to health, air quality, and water quality, respectively. The proposed project would not inhibit OCWR's compliance with the requirements of each of the governing bodies.

The proposed project would comply with the City's Construction and Demolition Ordinance (Regulatory Compliance Measure UTIL-4). The Applicant/Developer would also be required to submit a Materials Questionnaire should the contractor haul away its own demolition waste. Additionally, the proposed project would comply with AB 341, which went into effect on July 1, 2012. AB 341 requires businesses and multifamily residential dwelling units of five units or more that generate four or more cubic yards of commercial solid waste per week to implement recycling programs.[1] With adherence to Regulatory Compliance Measure UTIL-4, the proposed project would comply with federal, State, and local statutes and regulations related to solid waste. Therefore, impacts would be less than significant, and no mitigation is required.

4.17.6 Level of Significance Prior to Mitigation

With adherence to Regulatory Compliance Measures UTIL-1 through UTIL-4, Regulatory Compliance Measure E-1, Regulatory Compliance Measure HYD-1, and Regulatory Compliance Measure HYD-3, the proposed project would result in less than significant impacts related to utilities and service systems.

[1] City of Cypress. AB 341 Mandatory Commercial Recycling. Website: https://www.cypressca.org/work/trash-recycling/ab-341-mandatory-commercial-recycling (accessed December 23, 2019).

4.17.7 Regulatory Compliance Measures and Mitigation Measures

4.17.7.1 Regulatory Compliance Measures

The following regulatory compliance measures pertaining to utilities and service systems are applicable to the proposed project.

Regulatory Compliance Measure UTIL-1 **Sewer Improvement Standards.** All required sewer improvements shall be designed and constructed to City and Orange County Sanitation District (OCSD) standards and shall be approved by the City of Cypress (City) Engineer prior to development. These improvements may be constructed in a phased sequence depending upon the development process. Facilities shall be dedicated to the City and/or OCSD at the completion of construction.

Regulatory Compliance Measure UTIL-2 **Drainage Improvement Standards.** Drainage system improvements shall be designed and constructed to City and Orange County Flood Control District (OCFCD) standards, if applicable, and will be approved by those agencies prior to development. Improvements may be constructed in a phased sequence depending upon the development process. Facilities shall be dedicated to the City at completion of construction to the extent required by the City (Source: Mitigation Measure No. 64, page 151, Cypress Business and Professional Center Specific Plan EIR).

Regulatory Compliance Measure UTIL-3 **Water Conservation.** The Applicant/Developer shall comply with all State laws for water conservation measures and use of reclaimed water. Voluntary water conservation strategies shall be encouraged. The Building Division shall determine compliance prior to issuance of building permits (Source: Mitigation Measure No 75, pages 157 and 158, Cypress Business and Professional Center Specific Plan EIR).

Regulatory Compliance Measure UTIL-4 **Construction and Demolition Ordinance**. The Construction Contractor shall comply with the provisions of City Ordinance No. 1166 and the 2016 California Green Building Standards Code, which would reduce construction and demolition waste. Ordinance No. 1166 is codified in Article VIII, Materials Questionnaire for Certain Construction and Demolition Project within the City of Cypress in the City of Cypress Municipal Code.

Additionally, refer to Regulatory Compliance Measure E-1 in Section 4.5, Energy, and Regulatory Compliance Measures HYD-1 and HYD-3 in Section 4.9, Hydrology and Water Quality.

4.17.7.2 Mitigation Measures

No mitigation measures are applicable to the proposed project.

4.17.8 Level of Significance after Mitigation

The proposed project would not result in any significant impacts to utilities or service systems. No mitigation is required.

4.17.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services and utilities. The project site is a vacant parking lot located in an urban area with existing services provided by utility providers in the vicinity. The cumulative area for utilities is listed below for each individual utility provider.

4.17.9.1 Wastewater

The geographic area for the cumulative analysis for wastewater treatment is defined as the City and the OCSD service area. Within its service area, the OCSD uses United States Census Bureau population data, as well as information regarding existing and zoned land uses, to project current and future wastewater flows. For this reason, the projected demand for wastewater treatment is cumulative in nature.

The wastewater capacities of OCSD Reclamation Plant No. 1 and 2 are designed to accommodate the growth forecast within the OCSD service area and development outlined in the General Plans for jurisdictions within its service area. As discussed in Section 4.12, Population and Housing, population growth generated by the proposed project in conjunction with related projects would not induce substantial population unplanned population growth in the City. Through its Capital Improvement Program, the OCSD strives to continue maintaining its facilities at optimal levels by planning, designing, and preparing for future demand by developing Facilities and Biosolids Master Plans that address 20-year planning horizons.[1] Because OCSD prepares for future demand over long planning horizons, adequate facilities would be planned for to account for population growth. Therefore, the cumulative population and housing growth from the proposed project and the related projects would be planned for and the OCSD would have adequate capacity for the increased wastewater treatment demand associated with implementation of the proposed project and the related projects within its service area.

[1] OCSD. 2019d. Capital Improvement Program Fiscal Year 2017/2018. Website: https://www.ocsd.com/Home/ShowDocument?id=26170 (accessed December 1, 2019).

Furthermore, OCSD is starting construction on the Western Regional Sewers project as early as Spring 2020, which would further improve OCSD sewer facilities in the vicinity of the project site.[1] Individual projects in the OCSD service area, including the related projects, would address the localized capacity of OCSD facilities and identify whether new or upgraded facilities are required.

For these reasons, the proposed project and related projects would not result in a cumulatively significant impact to wastewater generation.

4.17.9.2 Potable Water

The geographic area for the cumulative analysis of water infrastructure is the West Orange service area of GSWC. The projections for potable water demand in the GSWC West Orange service area are based on regional population and economic growth forecasts, and account for potential future development within its service area, including the additional demand for water generated by the related projects. According to the GSWC 2015 UWMP, by 2035, the West Orange service area's population is estimated to increase at a 0.3 percent growth rate per year, and households and employment in the service area are both expected to grow at an annual growth rate of 0.2 percent over the same period. For this reason, the projected demand for water supply in the GSWC West Orange service area is inherently cumulative in nature. As discussed previously, population growth generated by the proposed project in conjunction with related projects would not result in substantial unplanned population growth. As such, GSWC would update its population projections and expected water demand accordingly to accommodate population and housing growth. Therefore, GSWC would have adequate capacity for the increased demand for potable water associated with the development of the proposed project and the related projects within its service area. Therefore, the proposed project and the related projects would not have a cumulatively significant impact on water supply or facilities.

4.17.9.3 Electricity

The geographic area for the cumulative analysis of impacts to the provision of electricity is the service territory of SCE. SCE's service area covers approximately 50,000 sq mi in Southern and Central California, with the provision of energy service to approximately 15 million across the service territory.[2] The projections of statewide electricity supply capacity demand rates are cumulative in nature. They are based on population and economic growth in addition to such physical variables as average temperature and water supplies (important to hydroelectric generation) in a given year. The total annual electricity consumption in the SCE service area in 2017 was 84,291.6 GWh and by 2030, consumption is anticipated to increase by approximately 12,000 GWh for the low-demand scenario and by 22,000 GWh for the high-demand scenario.[3] While this forecast represents a large increase in electricity consumption, the proposed project's percent of cumulative consumption of electricity in

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1 OCSD. 2019e. Western Regional Sewers Program Webpage. Website: https://www.ocsd.com/residents/future-projects/western-regional-sewers (accessed December 17, 2019).

2 Southern California Edison. 2019. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed December 12, 2019).

3 CEC. 2018. California Energy Demand, 2018-2030 Revised Forecast. Publication Number: CEC-200-2018-002-CMF. February. Website: https://efiling.energy.ca.gov/getdocument.aspx?tn=223244 (accessed December 12, 2019).

the SCE service area would be negligible. Therefore, any increase in electrical demand resulting from the proposed project would be incremental compared to an increase in regional demand. Sufficient electricity supplies and infrastructure capacity are available, or have already been planned, to serve past, present, and reasonably foreseeable projects.

Additionally, Title 24 of the California Administrative Code regulates energy and water consumption in new construction and regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting. Therefore, in relation to the cumulative study area, the proposed project would not generate a significant cumulative increase in demand for electricity or a significant disruption in service or service level. Therefore, the proposed project's contribution to electricity impacts would not be cumulatively considerable, and no mitigation is required.

4.17.9.4 Natural Gas

The geographic area for the cumulative analysis of impacts to the provision of natural gas is the service territory for SoCalGas. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border. Total natural gas consumption in the SoCalGas service area in 2018 was 5,156.1 million therms. [1] Between 2018 and 2035, total natural gas consumption in the SoCalGas service area is forecast to remain steady for the low- and mid-demand scenarios and to increase by approximately 650 million therms in the high-demand scenario due to intense energy efficiency efforts.[2] The proposed project's percent of cumulative consumption of natural gas in the SoCalGas service area would be negligible. Therefore, any increase in natural gas demand resulting from the proposed project would be incremental compared to an increase in regional demand. Furthermore, like the proposed project, all future projects would be subject to Title 24 requirements and would be evaluated on a case-by-case basis to determine the need for specific distribution improvements. Therefore, the proposed project's contribution to natural gas impacts would not be cumulatively considerable, and no mitigation is required.

4.17.9.5 Solid Waste

The geographic area for the cumulative analysis of solid waste infrastructure is OCWR's service territory. Development associated with the proposed project would contribute to an increased demand for landfill capacity for solid waste. As stated previously, the landfill serving the project site would be the Olinda Alpha Landfill, which is not scheduled to close until 2030. As discussed under Threshold 4.17.4 above, the proposed project would only constitute approximately 0.1 percent of the remaining average daily capacity at the Olinda Alpha Landfill. Additionally the Olinda Alpha Landfill is currently only receiving 87.5 percent of the 8,000 tons it is permitted to receive. Therefore, the Olinda Alpha Landfill has sufficient permitted capacity to provide adequate capacity for Orange County's solid waste needs and with compliance with federal, State, and local statues and regulations related to solid waste, which require reductions in solid waste generation.

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1 CEC. 2019e. Natural Gas Consumption by Entity. Website: https://ecdms.energy.ca.gov/gasbyutil.aspx (accessed December 12, 2019).

2 Ibid.

Furthermore, based on their current daily maximum permitted disposal capacities and current average daily tonnage, the Alpha Olinda Landfill will reach capacity in 2030, the Frank R. Bowerman Landfill will reach capacity in 2053, and the Prima Deshecha Landfill will reach capacity in 2102.[1] Therefore, there is currently sufficient permitted capacity within the existing OCWR system serving Orange County to provide adequate future capacity for the County's solid waste needs. Therefore, the proposed project's contribution to solid waste impacts would not be cumulatively considerable, and no mitigation is required.

4.17.9.6 Telecommunication Facilities

The geographic area for the cumulative analysis of impacts to the provision of telecommunication facilities is the City. Telephone, cable, and internet services are provided to residents through private providers of these services. The construction and expansion of telecommunication facilities for the proposed project would occur on site and is not expected to impact any telephone, cable, or internet services offsite that serve the surrounding areas. Likewise, construction and expansion of telecommunication facilities would generally occur on site to extend through proposed related developments. Therefore, cumulative impacts associated with the relocation or construction of new or expanded telecommunication facilities would be less than significant. No mitigation is required.

[1] Orange County Waste & Recycling. 2019. Landfill Information Webpage. Website: http://www.oclandfills.com/landfill (accessed December 12, 2019)

5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant impacts of the project, and evaluate the comparative merits of the alternatives" (*State CEQA Guidelines*, Section 15126.6). This chapter identifies potential alternatives to the Cypress City Center Project (proposed project), evaluates the potential impacts of each alternative, and compares the potential impacts of each alternative against the proposed project's impacts, as required by CEQA.

Key provisions of the *State CEQA Guidelines* on alternatives (Section 15126.6[b] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR:

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (15126.6[b]).

- The specific alternative of 'no project' shall also be evaluated along with its impact (15126.6[e][1]). The 'no project' analysis shall discuss the existing conditions at the time the Notice of Preparation is published, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (15126.6[e][2]).

- The range of alternatives required in an EIR is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent) (15126.6[f]).

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (15126.6[f][2][A]).

- If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location (15126.6[f][2][B]).

- An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (15126.6[f][3]).

Pursuant to the guidelines stated above, a range of alternatives to the proposed project is considered and evaluated in this EIR. These alternatives were developed in the course of project planning and environmental review. The discussion in this section provides:

1. A description and analysis of impacts for each of the alternatives considered;

2. Comparative analysis of each alternative that focuses on the potentially significant unavoidable environmental impacts of the proposed project (the purpose of this analysis is to determine whether alternatives are capable of eliminating or reducing the significant environmental impacts of the project to a less than significant level); and

3. Conclusions regarding the alternative's: (1) ability to avoid or substantially lessen the significant unavoidable impacts of the project; (2) ability to attain the project objectives (as stated below); and (3) merits compared to the merits of the proposed project.

5.2 PROPOSED PROJECT

5.2.1 Project Objectives

As discussed in Section 1.3.1, Project Objectives, of this EIR, the following project objectives have been established to aid decision-makers in their review of the proposed project and its associated environmental impacts:

The following provides the objectives established for the proposed project, which include implementation of goals and policies from the City of Cypress (City) General Plan and the Specific Plan:

1. Provide uses that meet the City's General Plan balanced development goals and objective to locate higher density housing adjacent to commercial and employment opportunities to encourage pedestrian access and provide a consumer base for commercial uses (GP LU-1.4).

2. Provide a balanced mix of residential and commercial uses in the Cypress Business and Professional Center Specific Plan, which would promote a commercial environment that balances quality development with economic growth while building in flexibility to respond to the market demands (Cypress Business & Professional Center Specific Plan, Objectives 1.2 and 1.3).

3. Support the retention of local employers and increase the fiscal benefits to the City by attracting new retail, restaurant, hotel, and entertainment businesses that can better serve the local

population and employment and would generate additional revenue to the City through increased sales, property, and transient occupancy taxes (GP LU-17.1).

4. Meet the demand for new hotel rooms in the Cypress Business Center to serve the local business community.

5. Provide new drainage improvements on the project site, which would reduce the risk of downstream flooding hazards.

6. Provide a new community gathering place for Cypress residents and workers, including a public dog park and a landscaped plaza with outdoor dining areas.

7. Allow the City to divest itself of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance, and the State Controller's Office, which would facilitate the generation of additional revenue to the City by selling the land to a private owner, who would return the land to the property tax rolls and develop it with new revenue-generating uses.

8. Expand the variety of housing stock in the City, which would help meet the existing and future housing needs of all Cypress residents, by providing high density rental units (GP HOU-3.5).

9. Expand and improve the City's housing supply by developing high-quality housing in the City to alleviate the housing crisis and help the City meet its Regional Housing Needs Assessment allocations (GP HOU-4).

5.2.2 Significant Adverse Unavoidable Impacts of the Proposed Project

The following discussion focuses on alternatives that would reduce or avoid the significant adverse unavoidable impacts of the proposed project. As detailed in Section 4.7, Greenhouse Gas Emissions, the proposed project would result in significant, adverse, and unavoidable impacts related to greenhouse gas emissions after all mitigation is applied. These impacts are summarized below.

The proposed project would be designed in compliance with adopted regulations aimed at reducing greenhouse gas emissions. Specifically, the project would be designed and built to be 10 percent more energy-efficient than the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24), or the current Title 24 requirements, whichever are more stringent. Although exceeding the current CCR Title 24 requirements would help to reduce the proposed project's greenhouse gas emissions, the overall emissions attributable to construction and operation of the proposed project of 7,208 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr) are expected to exceed the South Coast Air Quality Management District (SCAQMD) thresholds of 3,000 MT CO_2e/yr. The greenhouse gas emissions of 7.9 metric tons of carbon dioxide equivalent per service population per year (MT CO_2e/SP/yr) would also exceed the SCAQMD threshold of 4.3 MT CO_2e/SP/yr for 2022. Therefore, the proposed project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to

greenhouse gas emissions and conflict with an applicable greenhouse gas reduction plan, policy, or regulations.

5.3 ALTERNATIVES INITIALLY CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

Section 15126.6(c) of the *State CEQA Guidelines* suggests that EIRs identify any alternatives that were considered by the Lead Agency but were rejected during the scoping process and briefly explain the reasons underlying the Lead Agency's determination. In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected for differing reasons by the City of Cypress (City).

The following is a discussion of the development alternatives considered during the environmental review process and the reasons they were not selected for detailed analysis in this Draft EIR.

5.3.1 Alternative Sites

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant impacts of the project. The key question and first step in the analysis is whether any of the significant impacts of the project would be avoided or substantially lessened by relocating the project. Only locations that would avoid or substantially lessen any of the significant impacts of the project need be considered for inclusion in the EIR (*State CEQA Guidelines*, Section 15126.6[f][2][A]). Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the Applicant/Developer can reasonably acquire, control, or otherwise have access to the alternative site (*State CEQA Guidelines*, Section 15126.6[f][1]). If it is determined that no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion (*State CEQA Guidelines*, Section 15126.6[f][2][B]).

No alternative locations where the proposed project could be undertaken are analyzed in the Draft EIR. One of the fundamental purposes of the project is to facilitate the City's disposal of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance, and the State Controller's Office. The consideration of an alternative development site elsewhere in the City would not facilitate this important goal.

In addition, as discussed further below, there is no other property in the City that would support a development similar to the proposed project. The surrounding area is highly urbanized, and no land is currently available for development that is large enough (approximately 13 acres) to develop the proposed project in an area that would be compatible with the proposed residential and commercial/retail uses. In addition, the City and/or the Applicant/Developer does not own or control any other property within the City or in the vicinity of the project site that would be suitable for development of the proposed project. Moreover, the Applicant/Developer cannot reasonably

acquire or control an alternative site in a timely fashion that would allow for the implementation of a project with similar uses and square footage.

The following alternative sites were considered as potential alternatives to the project site, but eliminated for the reasons discussed above and below:

1) **Cypress Town Center and Commons Specific Plan 2.0**: The Cypress Town Center and Commons Specific Plan 2.0, approved by voters in 2018, covers an approximately 154.4-acre area located to the north of the project site and generally bound by Cerritos Avenue, Katella Avenue, and Lexington Drive. The Cypress Town Center and Commons Specific Plan 2.0 established a comprehensive master plan and regulatory framework to develop a town center, housing, and public park space in parts of the Los Alamitos Race Course, the former Cypress Golf Club, and adjacent property. The districts within the Cypress Town Center and Commons Specific Plan 2.0 are primarily designated for single-family residential, senior housing, or public parks. Although property may be available (such as the parking lot north of the project site) in these districts, the commercial uses included in the proposed project would not be compatible with the single-family residential, senior housing, or public parks uses intended in these areas. The Cypress Town Center and Commons Specific Plan 2.0 includes two mixed-use districts. The commercial and residential uses of the proposed project would be compatible with the uses intended in these districts by the Cypress Town Center and Commons Specific Plan 2.0. However, one of the mixed-use districts would be too small (4.2 acres) to accommodate the proposed project. Although the second mixed-use district, located to the west of the project site, would be large enough (15 acres) to accommodate the proposed project, the existing Seventh-Day Adventist Church would be displaced. In addition, according to the Cypress Town Center and Commons Specific Plan 2.0, it is anticipated that no development would occur within the mixed-use districts until the Los Alamitos Race Course ceases operation. At this time, there is no indication that the owners of the Los Alamitos Race Course intend to close this facility. Therefore, development of the proposed project within the Cypress Town Center and Commons Specific Plan 2.0 is not a feasible option.

2) **Lincoln Avenue Specific Plan**. The Lincoln Avenue Specific Plan covers the area along Lincoln Avenue between Buena Park on the east and Hawaiian Gardens on the west. The Lincoln Avenue Specific Plan established a comprehensive master plan and regulatory framework to guide development in the plan area. Within the plan area, the majority of the available parcels are not large enough to accommodate the proposed project. An approximately 14-acre parcel located at 4552 Lincoln Avenue, developed with a self-storage facility, was previously considered to be developed with a residential development. However, the residential development is no longer being considered on this property, so it could feasibly be available for development of the project. However, neither the City nor the Applicant/Developer owns or controls this property. The property site is designated for residential uses in the Lincoln Avenue Specific Plan; therefore, a specific plan amendment would be required to allow for development of the commercial and retail uses on the project site. Additionally, this property is a rectangular property with limited frontage along Lincoln Avenue. Because good street visibility is necessary to make retail and commercial

uses viable, and this property is not highly visible from Lincoln Avenue, this site is not a viable alternative site for the proposed project.

3) **Former Mitsubishi Motors Property.** In 2019, Mitsubishi Motors relocated its headquarters from 6400 Katella Avenue. The approximately 22-acre property is developed with office buildings, but is currently unoccupied. Therefore, it is conceivable the property could be available for development of the proposed project. However, development of the proposed project on this site would require demolition of the existing office buildings. Additionally, neither the City nor the Applicant/Developer owns or controls this property. Finally, the property is currently zoned for the Planned Community Zone (PC-2): Cypress Corporate Center and the surrounding properties are developed with office uses. The residential and commercial/retail uses proposed as part of the proposed project would not be compatible with the corporate/office land uses within the Cypress Corporate Center planned community. Therefore, this site is not a viable alternative site for the proposed project.

Development of the proposed project at an alternative site (assuming one was available) could potentially result in some environmental impacts that would be similar to or greater than those of the proposed project's environmental impacts, depending on the proximity of the alternate site to sensitive uses. Conversely, given that the project site is located in a highly urbanized area, it is unlikely that relocating the proposed project to another site would substantially lessen any of its impacts. Additionally, developing the project on a different site would not reduce the significant unavoidable impacts related to greenhouse gas emissions because the greenhouse gas emissions are primarily dependent on the construction activities and proposed on-site uses and not on the location of the project. This, of course, assumes that an alternative development site would also be located in an urbanized area with equal access to housing, jobs, and services as that of the project site. Siting the project in a rural area that is far from housing, jobs, and services would greatly increase the vehicle miles traveled associated with the project, which would also increase the project's greenhouse gas emissions.

As such, no alternative sites were considered feasible because, as discussed above, one of the fundamental purposes of the project is to facilitate the City's sale of the project site. In addition, neither the City nor the Applicant/Developer owns or controls another project site in the City, no suitable alternative site is available that would achieve the underlying purpose and objectives of the proposed project, development of the proposed project on an alternative site would likely result in many of the same environmental impacts as development of the proposed project on the project site and would not reduce the significant, unavoidable impacts related to greenhouse gas emissions. For these reasons, this alternative was rejected from further consideration.

5.4 ALTERNATIVES UNDER CONSIDERATION

Section 21100 of the Public Resources Code (PRC) and Section 15126 of the *State CEQA Guidelines* require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. Based on the criteria listed above, the following three alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic

objectives of the proposed project but that may avoid or substantially lessen any of the significant impacts of the proposed project. Therefore, the alternatives considered in this EIR include the following:

- **Alternative 1: No Project Alternative:** CEQA requires analysis of a "No Project" Alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. According to *State CEQA Guidelines* Section 15126.6(e)(3)(C), the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. The No Project Alternative assumes that the project site would remain in the same condition as it was at the time the Notice of Preparation (NOP) was published and no new development of any kind would occur on the project site. The project site would remain a paved parking lot that would continue to be used for vehicle parking during events at the nearby Los Alamitos Race Course. Other short-term uses of the project site would also continue, including use as a Christmas tree lot, a truck staging area, and auxiliary truck and trailer storage.

- **Alternative 2: Reduced Project Alternative.** The Reduced Project Alternative includes a mixed-use development on the project site with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative includes construction of six retail buildings accommodating 41,600 square feet (sf) of retail and restaurant uses. In addition, the Reduced Project Alternative includes development of 80 residential units at a density of 6.02 dwelling units per acre (du/ac) on the 13.29-acre project site. The residential units would include a combination of two-story condominium buildings arranged around motor courts and three-story row townhomes. Because of the reduced residential uses, the above-grade parking structure would not be required to serve the residents on the project site. The Reduced Project Alternative includes the same size hotel (120 rooms with approximately 96,800 sf) as the proposed project.

- **Alternative 3: Commercial/Retail Alternative.** The Commercial/Retail Alternative includes development of 122,556 sf of major retail space, 21,000 sf of other retail/quick-serve restaurant space, and 9,353 sf of sit-down restaurant space on the project site. The Commercial/Retail Alternative includes construction of one building with four major retail tenants, one freestanding restaurant pad, and three retail/restaurant buildings. The Commercial/Retail Alternative also includes construction of a surface parking lot with 717 parking stalls. The project site was entitled until recently for development of the Commercial/Retail Alternative, which was environmentally cleared in the 2008 IS/MND that was prepared for the project site. However, these entitlements have since expired.

For the purpose of this analysis, it is assumed that all of the alternatives would comply with applicable federal, State, and local regulations, policies, and ordinances. The alternatives are further described below and their potential impacts compared to those of the proposed project.

5.5 ALTERNATIVES ANALYSIS

5.5.1 Aesthetics

The City is almost entirely developed and there are no designated scenic corridors, scenic vistas, or scenic highways within the City. The project site is also located within an urbanized area. The proposed Specific Plan Amendment does includes minor amendments to the design guidelines included in the Specific Plan to allow super graphics (large graphics) and projecting signage for the proposed movie theater structure. With approval of the Specific Plan Amendment, the proposed project would be consistent with the Specific Plan design guidelines for the project site. Additionally, the proposed project's building heights would be similar to and compatible with the commercial, office, and business park uses that surround the project site. Therefore, impacts related to degradation of existing visual character or quality would be less than significant. Construction-related illumination during evening and nighttime hours would be used for safety and security purposes only. In addition, although the proposed project would increase the overall intensity of on-site land uses and associated lighting, lighting would comply with all applicable lighting standards in the Cypress Zoning Ordinance and would not result in substantial increases in light intensity at off-site locations. The materials of the proposed buildings would primarily be non-reflective to minimize glare. Therefore, impacts related to light and glare would be less than significant. No mitigation would be required.

5.5.1.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading, site work, or removal of vegetation because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. As such, the proposed project would result in no impacts to scenic vistas or scenic highways. The project site is currently developed with a parking lot, which produces light and glare from the on-site light poles and vehicles utilizing the parking lot in the evenings. However, because the No Project Alternative would not include construction activities, construction of new buildings, or intensification of the on-site lighting sources, the No Project Alternative would not result in impacts related to visual character or quality or light and glare. Therefore, aesthetic impacts would be less than the proposed project. However, the No Project Alternative would not result in improved landscaping along Katella Avenue or the off-site landscaping along Siboney Street included under the proposed project.

5.5.1.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. There are no scenic corridors, scenic vistas, or scenic highways within the City; therefore, like the proposed project, the Reduced Project Alternative would not result in impacts to scenic vistas or scenic highways. Unlike the proposed project, the Reduced Project Alternative would be consistent with the Specific Plan design guidelines for the project site and would not require any minor amendments to the design guidelines. Additionally, the building heights would be similar to and compatible with the commercial, office, and business park uses that surround the project site. Therefore, impacts related to degradation of existing visual character or quality would be less than

significant and similar to the proposed project. Like the proposed project, construction-related illumination during evening and nighttime hours would be used for safety and security purposes only. In addition, although the Reduced Project Alternative would increase the overall intensity of on-site land uses and associated lighting, lighting would comply with all applicable lighting standards in the Cypress Zoning Ordinance and would not result in substantial increases in light intensity at off-site locations. The materials of the proposed buildings would primarily be non-reflective to minimize glare. Therefore, impacts related to light and glare would be less than significant. However, the Reduced Project Alternative would result in a smaller project overall compared to the proposed project and would therefore result in aesthetic impacts that are less than the proposed project.

5.5.1.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project. There are no scenic corridors, scenic vistas, or scenic highways within the City; therefore, like the proposed project, the Commercial/Retail Alternative would not result in impacts to scenic vistas or scenic highways. Unlike the proposed project, the Commercial/Retail Alternative would be consistent with the Specific Plan design guidelines for the project site and would not require any minor amendments to the design guidelines. However, the building heights (one-story) would be substantially less than the proposed project. The Commercial/Retail Alternative buildings would be similar to and compatible with the commercial, office, and business park uses that surround the project site. Therefore, impacts related to degradation of existing visual character or quality would be less than significant and similar to the proposed project. Like the proposed project, construction-related illumination during evening and nighttime hours would be used for safety and security purposes only. In addition, although the Commercial/Retail Alternative would increase the overall intensity of on-site land uses and associated lighting, lighting would comply with all applicable lighting standards in the Cypress Zoning Ordinance and would not result in substantial increases in light intensity at off-site locations. The materials of the proposed buildings would primarily be non-reflective to minimize glare. Therefore, impacts related to light and glare would be less than significant. The Commercial/Retail Alternative would result in a smaller scale project overall compared to the proposed project and would therefore result in aesthetic impacts that are less than the proposed project.

5.5.2 Air Quality

Air quality emissions associated with construction and operation of the proposed project would not exceed South Coast Air Quality Management District (SCAQMD) significance thresholds. Therefore, impacts of the proposed project related to the cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) would be less than significant. The proposed project would not exceed SCAQMD localized significance thresholds (LSTs); therefore, impacts related to exposure of sensitive receptors would be less than significant. The proposed project is consistent with the SCAQMD Final 2016 Air Quality Management Plan (AQMP) because (1) the construction and operation emissions of the proposed project would not exceed the regional significance thresholds or cause or contribute to NAAQS or CAAQS violations, and (2) increases in population and housing resulting from the proposed project would not represent a

substantial increase in population growth. Therefore, impacts related to conflict or obstruction of implementation of the applicable air quality plan would be less than significant. Finally, odors would be limited to odors generated during construction and operational odors from the restaurants and trash receptacles, which would be confined to the project site. Therefore, impacts related to odors would be less than significant. No mitigation is required.

5.5.2.1 Alternative 1: No Project Alternative

The No Project Alternative would not require grading or construction and would not change the existing on-site use or increase vehicle trips to and from the project site. Therefore, no additional air pollutant emissions related to grading, construction, additional vehicle trips, and operational uses would be generated under this alternative, and no air quality impacts would occur. During operation, fewer emissions would be generated (primarily from the reduced vehicle trips) compared to the proposed project, and no construction emissions would occur. As such, the No Project Alternative's impacts on air quality would be less than the air quality impacts associated with the proposed project.

5.5.2.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. A similar grading footprint but less construction would be required for the Reduced Project Alternative compared to the proposed project; therefore, construction emissions would be less than the proposed project and less than significant. The Reduced Project Alternative would generate fewer vehicle trips than the proposed project because there would be fewer residential uses and no movie theater, and the expanded retail component would generate fewer vehicle trips than a 10-screen movie theater. Therefore, this alternative would result in fewer residents and visitors to the project site. As a result, emissions generated during operation of the Reduced Project Alternative would be less than the proposed project and would not exceed the SCAQMD thresholds. As such, air quality impacts of the Reduced Project Alternative would be less than significant and less than the proposed project.

5.5.2.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project. However, the Commercial/Retail Alternative would require less building construction activities because the total building square footage would be approximately 320,000 sf less than the proposed project. The Commercial/Retail Alternative would have lower peak VOCs, SO_x, $PM_{2.5}$, and PM_{10} emissions but greater peak NO_x and CO emissions than the proposed project. The Commercial/Retail Alternative would generate similar area source emissions compared to the proposed project. However, the Commercial/Retail Alternative would generate 1,225 more daily vehicle trips than the proposed project and would therefore generate more vehicle emissions and more total emissions than the proposed project. Therefore, emissions generated during operation of the Commercial/Retail Alternative would be greater than the proposed project. However, construction and operational emissions of the Commercial/Retail Alternative would not exceed the SCAQMD thresholds. As such,

air quality impacts of the Commercial/Retail Alternative would be less than significant and greater than the proposed project.

5.5.3 Biological Resources

The project site is highly disturbed and developed with an asphalt-paved parking lot and does not support special-status species, riparian habitat, or wetlands and is not located within a Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Therefore, the proposed project would not result in impacts to special-status species, riparian habitat, wetlands, or NCCP/HCPs. The small amount of ornamental vegetation, including trees, along Katella Avenue would be removed outside of the nesting season to reduce impacts to nesting raptors and migratory birds. Therefore, impacts to wildlife movement and wildlife corridors would be less than significant. None of the trees on the project site are designated as Landmark Trees. In addition, work on street trees would be done in accordance with the City Council's adopted Parkway Tree Policy; therefore, impacts to local street trees would be less than significant. No mitigation is required.

5.5.3.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading, site work, or removal of vegetation because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Because the No Project Alternative would not involve construction activities or removal of the on-site vegetation, no impacts to biological resources would occur. Therefore, impacts to biological resources would be less than significant and less than that of the proposed project.

5.5.3.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial used (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. As stated above, the project site is highly disturbed and developed with an asphalt-paved parking lot and does not support special-status species, riparian habitat, or wetlands and is not located within an NCCP/HCP. Therefore, the Reduced Project Alternative would not result in impacts to special-status species, riparian habitat, wetlands, or NCCP/HCPs. Similar to the proposed project, the small amount of ornamental vegetation, including trees, along Katella Avenue would be removed outside of the nesting season to reduce impacts to nesting raptors and migratory birds. Therefore, impacts to wildlife movement and wildlife corridors would be less than significant. None of the trees on the project site are designated as Landmark Trees. In addition, work on street trees would be done in accordance with the City Council's adopted Parkway Tree Policy; therefore, impacts to local street trees would be less than significant. Because the same grading footprint would be required compared to the proposed project, and construction would occur on the same project site, impacts to biological resources would be the same as the proposed project.

5.5.3.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project. As stated above, the project site is highly disturbed and developed with an asphalt-paved parking lot and does not

support special-status species, riparian habitat, or wetlands and is not located within an NCCP/HCP. Therefore, the Commercial/Retail Alternative would not result in impacts to special-status species, riparian habitat, wetlands, or NCCP/HCPs. Similar to the proposed project, the small amount of ornamental vegetation, including trees, along Katella Avenue would be removed outside of the nesting season to reduce impacts to nesting raptors and migratory birds. Therefore, impacts to wildlife movement and wildlife corridors would be less than significant. None of the trees on the project site are designated as Landmark Trees. In addition, work on street trees would be done in accordance with the City Council's adopted Parkway Tree Policy; therefore, impacts to local street trees would be less than significant. Because the same grading footprint would be required compared to the proposed project, and construction would occur on the same project site, impacts to biological resources would be the same as the proposed project.

5.5.4 Cultural Resources

The South Central Coastal Information Center (SCCIC) record search results and archaeological pedestrian field survey identified no previously recorded cultural resources on or in soils on the project site. The proposed project would not cause a substantial adverse change in the significance of a historical resource. Although there is a low likelihood of encountering intact buried archaeological deposits during ground-disturbing construction activities, implementation of mitigation would reduce any potential impacts of the proposed project on the significance of archaeological resources to a less than significant level by requiring that a qualified professional archaeologist provide cultural resources awareness training prior to the commencement of ground-disturbing activities and that a qualified professional archaeologist be retained on-call in the event that construction personnel encounter any archaeological deposits and/or human remains during construction activities. No previously identified human remains are present on the project site, and there are no facts or evidence indicating that Native Americans or people of European descent are buried on the project site. However, undiscovered human remains may be present below the ground surface on any property. Compliance with the State's Health and Safety Code for the treatment of human remains would reduce the impact of the proposed project on human remains to less than significant.

5.5.4.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource. Further, the No Project Alternative would not have the potential to disrupt human remains or result in the discovery of previously unknown archaeological resources. No impacts related to cultural resources would occur; therefore, the impacts of the No Project Alternative would be less than that of the proposed project.

5.5.4.2 Alternative 2: Reduced Project Alternative

Similar to the proposed project, the Reduced Project Alternative would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the project site. The Reduced Project Alternative would develop the project site with residential, retail, and hotel uses, but at a lower density than

the proposed project, and would require ground-disturbing construction activities for the development. Similar to the proposed project, the Reduced Project Alternative would have a low likelihood of encountering intact buried archaeological deposits and previously discovered buried human remains during ground-disturbing construction activities; however, the Reduced Project Alternative would require the installation of fewer geopiers and, therefore, would be incrementally less likely to disturb archaeological resources and human remains. The Reduced Project Alternative would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources by requiring cultural resources awareness training prior to the commencement of ground-disturbing activities and the retention of a qualified professional archaeologist on an on-call basis during construction. The Reduced Project Alternative would also be required to comply with Health and Safety Code Section 7050.5, which would reduce potentially significant impacts to previously undiscovered buried human remains. Implementation of this mitigation and adherence to regulatory standards would reduce potential impacts related to cultural resources to a less than significant level.

In summary, similar to the proposed project, the Reduced Project Alternative would result in no impacts to historical resources and less than significant impacts with mitigation incorporated for archaeological resources, and less than significant impacts on human remains after complying with regulatory standards. However, because the Reduced Project Alternative would require the installation of fewer geopiers, the Reduced Project Alternative would result in less impacts to unknown cultural resources compared to the proposed project.

5.5.4.3 Alternative 3: Commercial/Retail Alternative

Similar to the proposed project, the Commercial/Retail Alternative would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA because no previously recorded historical resources were identified in the project site. The Commercial/Retail Alternative would develop the same project site with commercial/retail uses and would require ground-disturbing construction activities for the development. Similar to the proposed project, the Commercial/Retail Alternative would have a low likelihood of encountering intact buried archaeological deposits and previously discovered buried human remains during ground-disturbing construction activities; however, the Commercial/Retail Alternative would not require the installation of geopiers and, therefore, would be less likely to disturb archaeological resources and human remains. The Commercial/Retail Alternative would be required to incorporate mitigation measures to reduce potentially significant impacts to archaeological resources by requiring cultural resources awareness training prior to the commencement of ground-disturbing activities and the retention of a qualified professional archaeologist on an on-call basis during construction. The Commercial/Retail Alternative would also be required to comply with Health and Safety Code Section 7050.5, which would reduce potentially significant impacts to previously undiscovered buried human remains. Implementation of this mitigation and adherence to regulatory standards would reduce potential impacts related to cultural resources to a less than significant level.

In summary, similar to the proposed project, the Commercial/Retail Alternative would result in no impacts to historical resources, less than significant impacts with mitigation incorporated for archaeological resources, and less than significant impacts on human remains after complying with regulatory standards. However, because the Commercial/Retail Alternative would not require the

installation of geopiers, the Commercial/Retail Alternative would result in less impacts to unknown cultural resources compared to the proposed project.

5.5.5 Energy

Project construction would consume diesel fuel and gasoline. Additionally, project operation would increase electricity and natural gas demand. Although project construction and operation would require using energy, the proposed project would comply with including the Title 24 building energy efficiency standards. The proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, energy impacts would be less than significant, and no mitigation is required.

5.5.5.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Therefore, the No Project Alternative would not increase energy demand on the project site. No energy impacts would occur; therefore, energy impacts of the No Project Alternative would be less than that of the proposed project.

5.5.5.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. A similar grading footprint but less construction would be required for the Reduced Project Alternative compared to the proposed project; therefore, energy use during construction would be less than the proposed project. Like the proposed project, the buildings construction as part of the Reduced Project Alternative would meet the Title 24 building energy efficiency standards. Like the proposed project, the Reduced Project Alternative would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts related to energy use would be less than significant. However, because the Reduced Project Alternative includes less development than the proposed project, consumption of natural gas, electricity, and fuel during operation would be less than the proposed project. Therefore, energy impacts would be less than significant and less than the proposed project.

5.5.5.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project. However, the Commercial/Retail Alternative would require less building construction activities because the total building square footage would be approximately 320,000 sf less than the proposed project. Therefore, construction energy use would be less than the proposed project. In addition, the buildings constructed as part of the Commercial/Retail Alternative would meet the Title 24 building energy efficiency standards and would result in less electricity and natural gas demand compared to the proposed project. However, the Commercial/Retail Alternative would generate 1,225 more daily

vehicle trips than the proposed project and would therefore consume more fuel than the proposed project from vehicle trips during operation. Like the proposed project, the Commercial/Retail Alternative would not result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts related to energy use would be less than significant. Although the Commercial/Retail Alternative would consume more fuel from vehicle trips during operation than the proposed project, the Commercial/Retail Alternative would consume less fuel and energy overall than the proposed project considering both vehicular and stationary source demands.

5.5.6 Geology and Soils

The proposed project would not result in any impacts related to rupture of a known earthquake fault, landslides, subsidence, and septic tanks and alternative wastewater disposal systems. Potential impacts related to landslides and unstable slopes, lateral spreading, and expansive soils would be less than significant, and no mitigation is required. Impacts related to strong seismic ground shaking, liquefaction, compressible/collapsible soils, and wet soils are considered potentially significant, and mitigation is required. Project construction would comply with the requirements of the California Building Code and the City's Building Code. In addition, the mitigation measures require compliance with the recommendations in the project's Geotechnical Assessment. With implementation of mitigation, the proposed buildings would be designed and constructed to current safety standards, and all potentially significant impacts related to soils and geology would be less than significant. Project construction would increase erosion and loss of topsoil during construction; however, Erosion Control Best Management Practices (BMPs) and Sediment Control BMPs would be implemented during construction in compliance with the requirements of the Construction General Permit to ensure that impacts related to erosion would be less than significant. Soils on the project site have a low paleontological sensitivity from the surface to a depth of 10 feet and high sensitivity below a depth of 10 feet; therefore, it is possible that deeper ground-disturbing construction activities such as construction of the geopiers could have a potentially significant impact on previously undiscovered paleontological resources. The mitigation measures require paleontological monitoring. In the event that paleontological resources are encountered during construction, construction activities shall be halted until the find can be assessed by a qualified paleontologist, who will make recommendations for the appropriate collection, treatment, and disposition of the discovery. These measures would reduce potentially significant impacts to paleontological resources to less than significant.

5.5.6.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Therefore, the No Project Alternative would have no impacts related to geology and soils, and this alternative would have less geology and soils impacts than the proposed project.

5.5.6.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The same

grading footprint and similar construction would be required compared to the proposed project. The required grading and construction activities would result in reduced impacts related to geology and soils as the proposed project because the Reduced Project Alternative would result in the installation of fewer geopiers. As with the proposed project, the Reduced Project Alternative would be designed and constructed to conform to the current seismic design provisions of the California Building Code and the City Building Code. In addition, this alternative would implement the same mitigation measure as the proposed project, which requires implementation of the measures contained in a final design-level geotechnical analysis and paleontological monitoring. Therefore, like the proposed project, the Reduced Project Alternative would have less than significant impacts related to geology and soils with implementation of mitigation. Given the similar footprint and reduced construction activities, the geology-related impacts of the Reduced Project Alternative would be less than that of the proposed project.

5.5.6.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project; however, the Commercial/Retail Alternative would not require the installation of geopiers. The required grading would result in reduced impacts related to geology and soils as the proposed project because the Commercial/Retail Alternative would result in a reduced scale of proposed structures and would not install geopiers. As with the proposed project, the Commercial/Retail Alternative would be designed and constructed to conform to the current seismic design provisions of the California Building Code and the City's Building Code. In addition, this alternative would implement the same mitigation measure as the proposed project, which requires implementation of the measures contained in a final design-level geotechnical analysis and paleontological monitoring. Therefore, like the proposed project, the Commercial/Retail Alternative would have less than significant impacts related to geology and soils with implementation of mitigation. Given the similar footprint and reduced construction activities of the Commercial/Retail Alternative, the geology-related impacts of the Commercial-Retail Alternative would be less than that of the proposed project.

5.5.7 Greenhouse Gas Emissions

The proposed project would be designed in compliance with adopted regulations aimed at reducing greenhouse gas emissions. Specifically, the project would meet the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24). Although compliance with CCR Title 24 would help to reduce the proposed project's greenhouse gas emissions, the overall emissions attributable to construction and operation of the proposed project of 7,208 MT CO_2e/yr are expected to exceed the South Coast Air Quality Management District's (SCAQMD) thresholds of 3,000 MT CO_2e/yr. The greenhouse gas emissions of 7.9 metric tons of carbon dioxide equivalent per service population per year (MT CO_2e/SP/yr) would also exceed the SCAQMD's threshold of 4.3 MT CO_2e/SP/yr for 2022. Therefore, the proposed project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to greenhouse gas emissions and conflict with applicable greenhouse gas reduction plans, policies, or regulations. The proposed project includes mitigation measures that require (1) the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater to be designed and built to be 10 percent more energy-efficient than 2019 Title 24 requirements or the current Title 24

requirement, whichever is more stringent, and (2) the implementation of a Transportation Demand Management (TDM) Program for on-site residents and workers to reduce vehicle miles traveled. However, because the type and extent of measures that would be feasible to be implemented would be dependent on the individual tenants that occupy the project, the total amount of greenhouse gas reductions cannot be quantified at this time. For example, the ability of a business to affect employee and patrons vehicle miles traveled would depend in part on the number of employees and patrons, where they live, and the availability of regional programs such as transit buses. Therefore, impacts related to generation of greenhouse gas emissions would remain significant and unavoidable.

5.5.7.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Therefore, the No Project Alternative would not increase greenhouse gas emissions from new on-site uses or additional vehicle trips. No impacts related to greenhouse gas emissions would occur; therefore, greenhouse gas emission impacts of the No Project Alternative would be less than that of the proposed project.

5.5.7.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. A similar grading footprint but less construction would be required for the Reduced Project Alternative compared to the proposed project; therefore, greenhouse gas emission during construction would be less than the proposed project. Because the Reduced Project Alternative includes less development and would generate fewer vehicle trips than the proposed project, greenhouse gas emissions during operation would be less than the proposed project. The Reduced Project Alternative is estimated to generate 4,109 MT of CO_2e/yr, which is less than the proposed project. Similar to the proposed project, the Reduced Project Alternative's greenhouse gas emissions would exceed the SCAQMD's threshold of 3,000 MT CO_2e/yr. Therefore, the Reduced Project Alternative's emissions should be compared against the SCAQMD's efficiency-based threshold of 4.3 MT CO_2e/SP/yr. As described in Table 5.A below, the Reduced Project Alternative is estimated to have a service population of 383. Based on this service population estimate, the Reduced Project Alternative would generate approximately 10.7 MT of CO_2e/SP/yr, which is greater than the proposed project. Therefore, although the Reduced Project Alternative would result in less total greenhouse gas emissions than the proposed project, the Reduced Project Alternative would generate a greater amount of greenhouse gas emissions per capita than the proposed project and its impacts would be significant and unavoidable.

Table 5.A: Alternative 2 Service Population Estimate

Gross Building Area	Population/Employment Generation Factor	Estimated Employees
80 residential units	3.02 persons/household	242
120 room hotel (96,800 sf)	1500 gross sf/employee	65
41,600 sf of retail space	550 gross sf/employee	76
	Total Service Population	**383**

Sources: U.S. Green Building Council. 2008. Building Area per Employee by Business Type; and United States Census Bureau. 2010. 2010 Census. Table DP-1 Profile of General Population and Housing Characteristics.
sf = square foot/feet

5.5.7.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The same grading footprint would be required compared to the proposed project. However, the Commercial/Retail Alternative would require less building construction activities because the total building square footage would be approximately 320,000 sf less than the proposed project. Therefore, greenhouse gas emissions during construction would be less than the proposed project. The buildings constructed as part of the Commercial/Retail Alternative would generate similar greenhouse gas emissions compared to the proposed project during operation. However, the Commercial/Retail Alternative would generate 1,225 more daily vehicle trips than the proposed project and would therefore generate more greenhouse gas emissions during operation than the proposed project. According to the 2008 IS/MND, the Commercial/Retail Alternative is estimated to generate 6,866 MT of CO_2e/yr, which is slightly less than the proposed project; however, this estimate did not include an amortization of the Commercial/Retail Alternative's construction emissions. Similar to the proposed project, the Commercial/Retail Alternative's greenhouse gas emissions would exceed the SCAQMD's threshold of 3,000 MT CO_2e/yr. Therefore, the Commercial/Retail Alternative's emissions should be compared against the SCAQMD's efficiency-based threshold of 4.3 MT CO_2e/SP/yr. As described in Table 5.B below, the Commercial/Retail Alternative is estimated to have a service population of 293. Based on this service population estimate, the Commercial/Retail Alternative would generate approximately 23.4 MT of CO_2e/SP/yr, which is substantially greater than the proposed project. Therefore, although the Commercial/Retail Alternative would result in less total greenhouse gas emissions than the proposed project, the Commercial/Retail Alternative would generate a greater amount of greenhouse gas emissions per capita than the proposed project, and its impacts related to greenhouse gas emissions would be significant and unavoidable.

Table 5.B: Alternative 3 Service Population Estimate

Gross Building Area	Gross square feet per employee	Estimated Employees
122,556 sf of major retail space	550	223
30,353 sf of other retail/quick-serve or sit-down restaurant space	435	70
	Total Service Population	**293**

Source: U.S. Green Building Council. 2008. Building Area per Employee by Business Type.
sf = square foot/feet

5.5.8 Hazards and Hazardous Materials

The proposed project would result in no impacts related to physical interference with an adopted emergency response plan or related to risk of loss, injury, or death involving wildland fires. Impacts related to upset of hazardous materials, emission or handling of hazardous materials in the vicinity of a school, hazardous materials sites, and safety hazards within airport land use plans would be less than significant and no mitigation is required. Construction and operation activities on the project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with project construction and operation. During construction, good housekeeping BMPs would be implemented to reduce risk of spills of hazardous materials. Conditions of approval specified by the Orange County Fire Authority (OCFA), which would review the project, would be applied to the proposed project to reduce operational hazardous material impacts and ensure that any hazardous waste that is generated on-site would be transported to an appropriate disposal facility by a licensed hauler in accordance with State and federal law. Additionally, the proposed project would comply with all appropriate Federal Aviation Administration (FAA) standards and requirements and the FAA would review the height of the proposed buildings to ensure that no aviation hazards would occur. Adherence to regulatory standards would ensure that impacts related to the transport, use, and disposal of hazardous materials would be less than significant, and no mitigation is required.

5.5.8.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Because no construction activities would occur, no construction impacts related to hazardous materials would occur. The project site would remain a paved parking lot that would continue to be used for temporary uses, such as vehicle parking, Christmas tree lot, truck staging area, and auxiliary truck and trailer storage. Small amounts of hazardous materials may be used on the project site; however, the No Project Alternative would not increase the use of hazardous materials because the on-site use would remain the same. In addition, hazardous materials would be handled in accordance with State and federal law. The No Project Alternative would not require transport or handling of hazardous materials during construction and operational use of hazardous materials would continue to be limited due to the lack of development and temporary use of the project site. Therefore, no impacts related to hazardous materials would occur and impacts related to hazardous materials would be less than that of the proposed project.

5.5.8.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative would involve demolition of the existing parking lot and construction of new buildings that would result in similar impacts related to hazardous waste and materials compared to the proposed project. Construction and operation activities on the project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of

household hazardous waste associated with construction and operational activities. During construction, good housekeeping BMPs would be implemented to reduce risk of spills of hazardous materials. Conditions of approval specified by OCFA would be applied, similar to the proposed project, to reduce operational hazardous material impacts and ensure that any hazardous waste that is generated on-site would be transported to an appropriate disposal facility by a licensed hauler in accordance with State and federal law. The residential building height would be reduced compared to the proposed project which would reduce safety risks to aviation, although the tallest on-site structure would still be the five-story hotel. However, similar to the proposed project, the Reduced Project Alternative would comply with all appropriate FAA standards and requirements and the FAA would review the height of the proposed buildings to ensure that no aviation hazards would occur. Adherence to regulatory standards would ensure that impacts related to the transport, use, and disposal of hazardous materials would be less than significant and similar to that of the proposed project.

5.5.8.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The Commercial/Retail Alternative would involve demolition of the existing parking lot and construction of new buildings that would result in similar impacts related to hazardous waste and materials compared to the proposed project. Construction and operation activities on the project site would involve transport, use, and disposal of small quantities of hazardous materials or wastes. Adopted regulations and procedures are in place to minimize impacts related to use and disposal of household hazardous waste associated with construction and operational activities. During construction, good housekeeping BMPs would be implemented to reduce risk of spills of hazardous materials. Conditions of approval specified by OCFA would be applied, similar to the proposed project, to reduce operational hazardous material impacts and ensure that any hazardous waste that is generated on-site would be transported to an appropriate disposal facility by a licensed hauler in accordance with State and federal law. The building heights (one-story) would be substantially reduced compared to the proposed project which would reduce safety risks to aviation. However, the Commercial/Retail Alternative would comply with all appropriate FAA standards and requirements and the FAA would review the height of the proposed buildings to ensure that no aviation hazards would occur. Adherence to regulatory standards would ensure that impacts related to the transport, use, and disposal of hazardous materials would be less than significant and similar to that of the proposed project.

5.5.9 Hydrology and Water Quality

Construction of the proposed project would disturb soil and increase erosion and the risk of spills which would increase the potential for pollutants to be transported via stormwater runoff into receiving waters. The proposed project would comply with the Construction General Permit and implement a Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) during construction to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. The proposed project would change the use of the project site and would therefore change the pollutants of concern in stormwater runoff. A comprehensive Water Quality Management Plan (WQMP) and BMPs would be implemented during operation to address pollutants of concern and to ensure protection of beneficial uses of receiving waters. The water

quality impacts of the proposed project would be less than significant upon compliance with existing plans, programs, and policies in place to ensure compliance with National Pollutant Discharge Elimination System (NPDES) regulations. No mitigation is required.

The proposed project would change on-site drainage patterns. Because the project site is currently 90 percent impervious, the proposed project would not increase impervious surface areas or increase stormwater runoff from the project site. The proposed project includes drainage infrastructure and detention system to minimize development impacts to the site hydrology and reduce peak discharges from the project site in compliance with City discharge requirements for the project site. The detention systems would greatly reduce the amount of flows that would reach the downstream stormdrain system compared to the existing condition. The proposed project would implement one of two scenarios to convey off-site runoff that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue. Under Scenario 1, flow that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system would be conveyed around the project site before discharging to the storm drain in Katella Avenue. Under Scenario 2, those flows would be conveyed through the project site before discharging to the storm drain in Katella Avenue.

Under Scenario 1, the off-site flows would temporarily pond along the project site's northern property line at variable depths, depending on the magnitude of the storm event (e.g., 2-year, 10-year, and 100-year storm) before discharging to the west, into Siboney Street, then flowing overland to the south into Katella Avenue. This ponding would last for a short duration, would not flood any structures, and would only affect the portions of the parking lot north of the project site that are farthest away from the Los Alamitos Race Course grandstand. Under Scenario 2, the proposed project would not result in any additional off-site ponding over existing conditions. The hydrology impacts of the proposed project would be less than significant upon compliance with existing City requirements. No mitigation is required.

Groundwater dewatering during construction would be localized and temporary, and the volume of groundwater removed would not be substantial. Project operation would not require groundwater extraction and would not substantially change infiltration. The groundwater impacts of the proposed project would be less than significant, and no mitigation is required.

The proposed project would result in no impacts related to flood hazards, inundation, increases in impervious surface area, environmentally sensitive areas, or aquatic, wetland, or riparian habitat and no mitigation is required.

5.5.9.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. Therefore, no soil disturbance would occur under this alternative and there would be no construction impacts on water quality. The No Project Alternative would not change impervious surface areas, add new uses or structures, or change stormwater runoff on the project site compared to existing conditions. However, no operational BMPs would be implemented and site runoff would continue to be untreated. In addition, no drainage infrastructure or detention systems would be implemented. Therefore, the peak flow from the site would continue to

contribute to the exceedance of the capacity of the downstream stormdrain systems. Although the No Project Alternative would have no hydrology and water quality impacts compared to existing conditions, this alternative would have greater hydrology and water quality impacts than the proposed project because it would not include implementation of BMPs, drainage infrastructure, or detention systems.

5.5.9.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. Because the Reduced Project Alternative would be constructed on the same project site as the proposed project, the same soil disturbance would occur during construction. In addition, the impervious surface area on the project site would be similar to the proposed project. Also similar to the proposed project, the implementation of BMPs during the construction and operation phases would ensure that this alternative would not generate significant water quality impacts. The Reduced Project Alternative would also be required to implement drainage infrastructure and detention systems to reduce peak flow from the peak discharges from the project site in compliance with City discharge requirements for the project site. Similar to the proposed project, the Reduced Project Alternative would implement one of two scenarios to convey off-site runoff that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue. If the Reduced Project Alternative would implement Scenario 1 for addressing off-site flows, it would also result in the same short-term off-site ponding during storm events as the proposed project. The Reduced Project Alternative would have less than significant impacts on hydrology and water quality, and this alternative would have similar impacts to those associated with the proposed project.

5.5.9.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. Because the Commercial/Retail Alternative would be constructed on the same project site as the proposed project, the same soil disturbance would occur during construction. In addition, the impervious surface area on the project site would be similar to the proposed project. Also similar to the proposed project, the implementation of BMPs during the construction and operation phases would ensure that this alternative would not generate significant water quality impacts. The Commercial/Retail Alternative would also be required to implement drainage infrastructure and detention systems to reduce peak flow from the reduce peak discharges from the project site in compliance with City discharge requirements for the project site. Similar to the proposed project, the Commercial/Retail Alternative would implement one of two scenarios to convey off-site runoff that exceeds the 0.3 cfs capacity of the Winners Circle stormdrain system to the curb and gutter in Katella Avenue. If the Commercial/Retail Alternative would implement Scenario 1 for addressing off-site flows, it would also result in the same short-term off-site ponding during storm events as the proposed project. The Commercial/Retail Alternative would have less than significant impacts on hydrology and water quality, and this alternative would have similar impacts to those associated with the proposed project.

5.5.10 Land Use and Planning

The proposed project would not divide an existing community. The Cypress General Plan Land Use Policy Map designates the project site as "Specific Plan Area" in recognition that the project site is subject to the Amended Cypress Business and Professional Center Specific Plan (Specific Plan). The Specific Plan land use designation for the project site is Professional Office, which is intended to accommodate the development of professional and administrative offices that complement the adjacent hotel center within the Specific Plan area. The project site currently has a zoning designation of PBP-25A, Planned Business Park (PBP), which is intended to provide for the development of educational, professional office, commercial, industrial, open space, or any public or semi-public uses. The proposed project would require a Specific Plan Amendment to modify the land use designation of the project site from Professional Office to a newly created mixed-use land use district that would allow residential and hotel uses, while still permitting commercial/retail uses. Upon the approval of the Specific Plan Amendment, the proposed project would be consistent with the land use designations contained in the Specific Plan.

The proposed project would develop a currently underutilized project site to provide additional housing opportunities in a region that is currently experiencing a severe housing shortage. Additionally, new housing units in an area of surrounded by business parks would improve the region's economic competitiveness by ensuring that area workers would have access to new housing in close proximity to their jobs. The proposed project would provide safe and attractive pedestrian connections to surrounding land uses and would facilitate transit use and active transportation by providing a new dense, mixed-use development along a major arterial street (Katella Avenue), which is already served by existing transit service. For these reasons, the proposed project would be consistent with the goals and policies of the 2016–2040 RTP/SCS, the City's General Plan, and the Specific Plan. Therefore, the proposed project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.

5.5.10.1 Alternative 1: No Project Alternative

No development would occur on the project site under the No Project Alternative. The project site would remain a paved parking lot. The No Project Alternative would not be consistent with the Specific Plan land use designation of Professional Office or the zoning designation of PBP-25A, Planned Business Park (PBP). Additionally, the No Project Alternative would not be consistent with the City's goals or the Specific Plan, which envisions buildout of the Specific Plan area with business park, professional office, and support commercial, and retail/commercial uses. Therefore, impacts to land use would be greater than the proposed project.

5.5.10.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. Like the proposed project, the Reduced Project Alternative would not divide an existing community. Like the proposed project, the Reduced Project Alternative would require a Specific Plan Amendment to modify the land use designation of the project site from Professional Office to a newly created

mixed-use land use district that would allow residential uses, while still permitting commercial/retail uses. Upon the approval of the Specific Plan Amendment, the proposed project would be consistent with the land use designations contained in the Specific Plan. The Reduced Project Alternative includes similar uses as the proposed project, but with reduced residential uses and no movie theater. Because of the similar proposed uses, the Reduced Project Alternative would be consistent with the goals and policies of the 2016–2040 RTP/SCS, the City's General Plan, and the Specific Plan, as amended, for the same reasons as the proposed project. Therefore, the Reduced Project Alternative would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations. Land use impacts of the Reduced Project Alternative would be similar to the proposed project.

5.5.10.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. Like the proposed project, the Commercial/Retail Alternative would not divide an existing community. The project site is within an area designated as Professional Office, which permits the development of shopping centers of not less 10 acres in gross land area subject to a conditional use permit. Therefore, the Commercial/Retail Alternative is consistent with allowable uses designated in the existing Specific Plan. The Commercial/Retail Alternative is consistent with the goals, objectives, and policies of the Specific Plan because it would diversify the types of uses in the Cypress Business Park by including retail and restaurant uses, which would also provide additional employment opportunities and increase the fiscal benefits to the City by generating additional revenues and sales tax. Therefore, the Reduced Project Alternative would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations. Land use impacts of the Commercial/Retail Alternative would be similar to the proposed project, except that it would not require a Specific Plan Amendment.

5.5.11 Noise

The construction noise, construction vibration, or off-site operational traffic noise levels would not exceed City noise level standards or the Federal Transit Administration (FTA) community annoyance threshold for vibration. Although project construction would not exceed applicable thresholds, the project includes mitigation to further minimize construction-related vibration. The construction contractor would be required to demonstrate to the City that construction noise reduction measures are being implemented to reduce construction noise. Operation of the proposed project would require the use of rooftop heating, ventilation, and air conditioning (HVAC) units for the proposed buildings. Noise generated from HVAC units could impact sensitive receptors within the vicinity of the project site by exceeding the City's daytime and nighttime exterior noise standard. Therefore, the proposed project includes mitigation which requires the Applicant/Developer to demonstrate to the City that on-site stationary noise sources comply with City noise standards. Therefore, noise and vibration impacts would be less than significant with implementation of mitigation. Additionally, aircraft noise generated from the two closest airports would not expose people residing or working on the project site to excessive noise levels due to the proximity of a public airport. Airport noise impacts would be less than significant.

5.5.11.1 Alternative 1: No Project Alternative

The No Project Alternative would not involve any grading, construction, vehicle, or truck trips. Therefore, the noise impacts that are typically associated with grading and construction would not occur under this alternative Because no development would be constructed under the No Project Alternative and vehicle trips would not increase, there would be no increase in noise levels. Therefore, the No Project Alternative would have no noise impacts, and this alternative would have less noise impacts than the proposed project.

5.5.11.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would involve a grading footprint and construction activities similar to the proposed project; however, the Reduced Project Alternative would require the installation of fewer geopiers. Therefore, this alternative would result in less construction noise impacts associated with grading and construction than the proposed project. In addition, the construction period may be a shorter duration due to the decreased density. The Reduced Project Alternative would be expected to implement the same mitigation as the proposed project. As such, the construction contractor would be required to demonstrate to the City that construction noise reduction measures are being implemented to reduce construction noise. Construction noise impacts would be less than significant with mitigation and less than the proposed project.

Under this alternative, and like the proposed project, operational noise would include vehicular noise associated with traffic related to the occupancy and operation of the new housing and commercial uses. However, because fewer residential units and no movie theater would be constructed under the Reduced Project Alternative, these operational noise levels would be reduced. Although this reduction in operational noise levels would be partially offset by the increase in retail space, the Reduced Project Alternative would result in a net reduction in operational noise levels. Additionally, the Reduced Project Alternative would have fewer vehicle trips than then proposed project. Therefore, operational noise associated with vehicle trips would be reduced. The Reduced Project Alternative would also include HVAC units on the buildings, which could impact sensitive receptors within the vicinity of the project site by exceeding the City's daytime and nighttime exterior noise standard. The Reduced Project Alternative would be expected to include similar mitigation as the proposed project, which requires the Applicant/Developer to demonstrate to the City that on-site stationary noise sources comply with City noise standards. Therefore, the Reduced Project Alternative would have less than significant noise impacts with implementation of mitigation, and this alternative would have less impacts than the proposed project.

5.5.11.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would involve a grading similar to the proposed project. However, the Commercial/Retail Alternative would require less building construction activities because the total building square footage would be approximately 320,000 sf less than the proposed project and this alternative would not require the installation of geopiers. The level of noise generated during construction would be less than the proposed project and would occur for a shorter period of time. The Commercial/Retail Alternative would be expected to implement the same mitigation as the proposed project. As such, the construction contractor would be required to demonstrate to the City that construction noise reduction measures are being implemented to

reduce construction noise. Construction noise impacts would be less than significant with mitigation and less than the proposed project.

Under this alternative, operational noise would include vehicular noise associated with traffic related to the occupancy and operation of the commercial/retail uses. However, the Commercial/Retail Alternative would have more vehicle trips than then proposed project. Additionally, due to the increased commercial/retail uses, this alternative would require more truck deliveries compared to the proposed project. Therefore, operational noise associated with vehicle and truck trips would be greater than the proposed project. The Commercial/Retail Alternative would also include HVAC units on the buildings, which could impact sensitive receptors within the vicinity of the project site by exceeding the City's daytime and nighttime exterior noise standard. The Commercial/Retail Alternative would be expected to include similar mitigation as the proposed project, which requires the Applicant/Developer to demonstrate to the City that on-site stationary noise sources comply with City noise standards. Therefore, the Commercial/Retail Alternative would have less than significant noise impacts with implementation of mitigation, and this alternative would have greater operational impacts than the proposed project.

5.5.12 Population and Housing

The project site is currently a paved parking lot; therefore, the proposed project would not displace any existing housing or populations on the project site. The proposed project includes the development of 251 apartment units, which is estimated to generate approximately 758 new residents. The addition of 758 new residents represents an increase of approximately 1.5 percent over the City's existing population of 49,833 as of January 2019.

Based on the 2016–2040 RTP/SCS Growth Forecast, SCAG projects that the City of Cypress' population will increase by 1,200 from 2012 to 2040 and that the number of households will increase by 600 from 2012 to 2040. Because housing was not envisioned on the project site, the proposed project would increase the Cypress population by approximately 758 net new residents and the amount of housing units by 251 new dwelling units not specifically assumed in the 2016 SCAG projections. The estimated increase in population from the proposed project accounts for 63.2 percent of the City's projected population growth from 2012 to 2040 and 41.8 percent of the City's projected household growth from 2012 to 2040.

SCAG recently updated its growth forecasts as part of the Draft 2020–2045 RTP/SCS, which indicates that the City's population is projected to grow more rapidly between 2016 and 2045 than previously forecast. Based on the Draft 2016–2040 RTP/SCS Growth Forecast, the population increase of 758 residents as a result of the proposed project would be within the updated SCAG population projections.

Additionally, according to SCAG's Draft Regional Housing Needs Assessment (RHNA) Methodology Estimate Tool for the planning period of October 2021 through October 2029, the City of Cypress has a total estimated RHNA of 3,967 units (1,159 Very Low-Income, 662 Low-Income, 629 Moderate-Income, and 1,518 above moderate-income units). Therefore, the total RHNA for the City of Cypress would be much larger than the projected housing growth included in the Draft 2020–2045 RTP/SCS growth forecasts that indicate that the City's housing is projected to grow by 800 units from 2016 to

2045. The housing units included in the proposed project would help the City meet the need for above moderate-income units included in the 6th cycle RHNA allocation. Because there is a need for additional housing over SCAG projections because the City is required by State law (Government Code Section 65580 et seq.) to plan for its fair share of projected housing construction needs in the City, the population growth as a result of the proposed project would not constitute substantial unplanned population growth in the area. Therefore, the proposed project's direct impact on population growth would be less than significant, and no mitigation is required.

5.5.12.1 Alternative 1: No Project Alternative

No development would occur on the project site under the No Project Alternative. The project site would remain a paved parking lot and no housing or populations would be displaced. The No Project Alternative would not include housing and would not increase the population in the City, so it would not induce substantial population growth. In comparison, the proposed project would result in a direct, though not substantial, increase in population within the project area. Therefore, the No Project Alternative would have less impact than the proposed project. However, unlike the proposed project, the No Project Alternative would not help the City meet the need for above moderate-income units included in its RHNA allocation.

5.5.12.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative would include 80 residential units, which would generate approximately 242 new residents. The 242 new residents represent a 0.49 percent increase over the City's existing population as of January 2019.

Because housing was not envisioned on the project site, the Reduced Project Alternative would increase the Cypress population by approximately 242 net new residents and the amount of housing units by 80 new dwelling units not specifically assumed in the 2016 SCAG projections. The estimated increase in population from the Reduced Project Alternative would account for 20.2 percent of the City's projected population growth from 2012 to 2040 and 13.3 percent of the City's projected household growth from 2012 to 2040. Based on the Draft 2016–2040 RTP/SCS Growth Forecast, the population increase of 242 residents as a result of the Reduced Project Alternative would be within the updated SCAG population projections.

Additionally, the housing units included in the Reduced Project Alternative would help the City meet the need for above moderate-income units included in the City's RHNA allocation. However, as compared to the proposed project, the Reduced Project Alternative provides less housing to help the City meet the need for above moderate-income units included in the RHNA allocation. Because there is a need for additional housing over SCAG projections because the City is required by State law to plan for its fair share of projected housing construction needs in the City, the population growth as a result of the Reduced Project Alterative would not constitute substantial unplanned population growth in the area. Therefore, like the proposed project, the Reduced Project Alternative direct impact on population growth would be less than significant. However, because the Reduced Project Alternative would include less housing than the proposed project, and would therefore

result in less population growth, impacts would be less than the proposed project. However, compared to the proposed project, the Reduced Project Alternative would result in fewer residential units and would therefore contribute less to helping the City meet its need for above moderate-income units included in its RHNA allocation.

5.5.12.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The project site is currently a paved parking lot; therefore, the Commercial/Retail Alternative would not displace any existing housing or populations on the project site. The Commercial/Retail Alternative would not include housing and would not increase the population in the City, so it would not induce substantial population growth. In comparison, the proposed project would result in a direct, though not substantial, increase in population within the project area. Therefore, the Commercial/Retail Alternative would have less impact than the proposed project. However, unlike the proposed project, the Commercial/Retail Alternative would not help the City meet the need for above moderate-income units included in the RHNA allocation.

5.5.13 Public Services

The proposed project would incrementally increase demand for fire protection and emergency service calls, which would result in a potentially significant impact. However, the Applicant/Developer would be required to enter into a Secured Fire Protection Agreement with the OCFA to ensure adequate fire protection service are available for the project site, which would reduce operational impacts to less than significant. The proposed project may incrementally contribute to the need for one additional police officer to meet future demand, but would not necessitate the expansion of the City's existing police facilities. Therefore, impacts related to police protection services would be less than significant. The proposed project's 251 residential units could generate approximately 126 elementary school students and 50 middle/high school students, which would increase the demand for school services. However, the Applicant/Developer would be required to pay school fees to reduce any impacts on school services. With payment of the required fees, impacts to schools would be less than significant. The proposed project's additional residents would require 2.27 acres of parkland based on the standard of 3.0 acres for each 1,000 residents in City's Municipal Code Section 25-43. Per City requirements, the Applicant/Developer would be required to pay fees and/or dedicate parkland. With the payment of in-lieu park fees and/or the dedication of parkland, impacts related to parks would be less than significant. Finally, the Cypress Branch Library has sufficient capacity to accommodate the additional population growth associated with the proposed project and library impacts would be less than significant. In conclusion, with implementation of the mitigation described above for fire service impacts, impacts to public services would be less than significant.

5.5.13.1 Alternative 1: No Project Alternative

No development would occur on the project site under the No Project Alternative. The No Project Alternative would not result in an increase in demand for fire protection and emergency services or police protection services because no new housing or commercial uses would be developed on the project site. In addition, the No Project Alternative would not increase the demand for parks, libraries, school, or other public facilities because there would be no new residents on the project

site. Therefore, the No Project Alternative would have no impacts on public services, and this alternative would have less impacts than the proposed project.

5.5.13.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. Compared to the proposed project, the Reduced Project Alternative, the demand for fire protection and emergency services and police protection services would decrease because fewer residential units and no movie theater would be developed on the project site. This reduction would be partially offset by the increase in retail space; however, the Reduced Project Alternative would result in a net reduction in the demand for fire protection, emergency services, and police protection services. Like the proposed project, the Applicant/Developer would be required to enter into a Secured Fire Protection Agreement with the OCFA to ensure adequate fire protection service are available for the project site. In addition, the Reduced Project Alternative would decrease the demand for parks, libraries, schools, and other public facilities because there would be fewer residents on the project site. Like the proposed project, the Applicant/Developer would be required to pay school fees and pay in-lieu park fees and/or or dedicate parkland to reduce any impacts on schools and parks. Therefore, the Reduced Project Alternative would have less than significant impacts on public services, and this alternative would have less impacts than the proposed project.

5.5.13.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The new commercial/retail uses on the project site would incrementally increase demand for police, fire, and emergency medical services. Although the Commercial/Retail Alternative would not increase the population within the City, it would attract employees and customers to the project site. The increase in demand for fire and police services would be similar to the proposed project and would be less than significant. In addition, because the Commercial/Retail Alternative would not increase population within the City, this alternative would not increase demand for library, park, or school services. Therefore, impacts to public services would be less than significant and less than the proposed project.

5.5.14 Recreation

The proposed project includes the construction of a 251-unit apartment structure that would add 758 new residents. The proposed project would include a public open space/recreational amenities, including a plaza, two greenbelts, and a dog park, all of which would be available to the public. The proposed project's additional residents would require 2.27 acres of parkland based on the standard of 3.0 acres for each 1,000 residents in City's Municipal Code Section 25-43. Per City requirements, the Applicant/Developer would be required to pay fees and/or dedicate parkland. With the payment of in-lieu park fees and/or the dedication of parkland, impacts related to recreation would be less than significant and no mitigation is required.

5.5.14.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Because no residential uses would be construction on the project site, the No Project Alternative would not increase demand for City parkland. No impacts to recreational facilities would occur and impacts would be less than the proposed project.

5.5.14.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative would include 80 residential units, which would serve 242 residents, based on the average household size in the City of 3.02 persons per household. The 242 additional residents would require 0.73 acres of parkland based on the standard of 3.0 acres for each 1,000 residents in City's Municipal Code Section 25-43. Per City requirements, the Applicant/Developer would be required to pay fees and/or dedicate parkland. With the payment of in-lieu park fees and/or the dedication of parkland, impacts related to recreation would be less than significant. Because the Reduced Project Alternative would result in less residents than the proposed project, the increased use and impacts to parks and recreational facilities would also be less than the proposed project.

5.5.14.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The Commercial/Retail Alternative would not include housing and would not increase the population in the City. Employees would be reasonably expected to use parks near their homes; therefore, the Commercial/Retail Alternative would not substantially increase the use of existing parks in the vicinity of the project site. The Commercial/Retail Alternative would, therefore, result in less than significant impacts to existing neighborhood and regional parks and recreational facilities. Because the Commercial/Retail Alternative would not increase the population in City and would not increase use of parks and recreational facilities, impacts to park and recreational facilities would be less than that of the proposed project. However, the Commercial/Retail Alternative would also not include publicly-available open space/recreational amenities, including a plaza, two greenbelts, and a dog park.

5.5.15 Transportation

The proposed project would develop the project site with a mixed-use development that would include commercial uses (e.g., movie theater, retail, hotel, and restaurant uses) and residential uses. The new uses on the project site have 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. With the addition of the project, all study area intersections would continue to operate at satisfactory LOS during both peak hours. The proposed project would not conflict with the *Orange County Congestion Management Program* (CMP), City's General Plan Circulation Element, or the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. Impacts related to conflict with a program, plan, ordinance, or policy addressing the

circulation system, including transit, roadway, bicycle, and pedestrian facilities would be less than significant. The project does not include any land uses that would be incompatible with surrounding land uses and would generate a similar vehicle mix to other surrounding land uses, consisting primarily of single-occupancy vehicles and distribution trucks. In addition, all new driveways at the project site would be subject to the provisions of the City of Cypress design standards to alleviate design feature and safety hazards. Therefore, impacts related to hazards due to a geometric feature or incompatible uses and inadequate emergency access would be less than significant and no mitigation is required.

5.5.15.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading or site work because no new development would occur on the project site. In addition, no buildings would be constructed on the project site and the project site would remain a parking lot. The No Project Alternative would not increase vehicle trips to and from the project site. Therefore, no traffic impacts would occur and the No Project Alternative's impacts would be less than the proposed project.

5.5.15.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. The Reduced Project Alternative would result in less of an increase in vehicle trips to and from the project site because of the reduced residential uses and no movie theater. The expanded retail component would also generate fewer vehicle trips than a 10-screen movie theater. Like the proposed project, all study area intersections would continue to operate at satisfactory LOS during both peak hours under the Reduced Project Alternative. The Reduced Project Alternative would not conflict with the *Orange County Congestion Management Program* (CMP), City's General Plan Circulation Element, or the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. Impacts related to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities would be less than significant. The Reduced Project Alternative would not include any land uses that would be incompatible with surrounding land uses and would generate a similar vehicle mix to other surrounding land uses, consisting primarily of single-occupancy vehicles and distribution trucks. In addition, all new driveways would be subject to the provisions of the City of Cypress design standards to alleviate design feature and safety hazards. Therefore, impacts related to hazards due to a geometric feature or incompatible uses and inadequate emergency access would be less than significant and no mitigation is required. Because the Reduced Project Alternative would result in less vehicle trips compared to the proposed project, traffic impacts would be less than the proposed project.

5.5.15.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The Commercial/Retail Alternative would generate 1,225 more daily vehicle trips than the proposed project. Although the Commercial/Retail Alternative would result in more vehicle trips than the proposed project, all study area intersections would continue to operate at satisfactory LOS during

both peak hours. The Commercial/Retail Alternative would not conflict with the *Orange County Congestion Management Program* (CMP), City's General Plan Circulation Element, or the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. Impacts related to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities would be less than significant. The Commercial/Retail Alternative would not include any land uses that would be incompatible with surrounding land uses and would generate a similar vehicle mix to other surrounding land uses, consisting primarily of single-occupancy vehicles and distribution trucks. In addition, all new driveways would be subject to the provisions of the City of Cypress design standards to alleviate design feature and safety hazards. Therefore, impacts related to hazards due to a geometric feature or incompatible uses and inadequate emergency access would be less than significant and no mitigation is required. Because the Commercial/Retail Alternative would result in more vehicle trips compared to the proposed project, traffic impacts would be greater than the proposed project.

5.5.16 Tribal Cultural Resources

The proposed project would develop the project site, which would require ground-disturbing construction activities. No previously recorded cultural resources were identified in the project site, and no specific information regarding tribal cultural resources was received during the Native American consultation. Therefore, the proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register of Historical Resources (California Register) or a local register. Based on the results of Native American consultation with the Gabrieleno Band of Mission Indians – Kizh Nation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The proposed project would incorporate a mitigation measure to reduce potentially significant impacts to previously undiscovered significant tribal cultural resources through Native American monitoring and evaluation of archaeological resources by the Native American monitor, and reduce potentially significant impacts to Native American buried human remains through compliance with Health and Safety Code Section 7050.5. The mitigation measures would reduce potential impacts to a less than significant level.

5.5.16.1 Alternative 1: No Project Alternative

The No Project Alternative would not require any grading, site work, or removal of vegetation because no new development would occur on the project site. In addition, no buildings would be constructed on the project site. Therefore, the No Project Alternative would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register. Further, the No Project Alternative would not have the potential to disrupt human remains or result in the discovery of previously unknown tribal cultural resources. No impacts related to tribal cultural resources would occur; therefore, the impacts of the No Project Alternative would be less than that of the proposed project.

5.5.16.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. Similar to

the proposed project, the Reduced Project Alternative would require ground-disturbing construction activities during the development; however, this alternative would require the installation of fewer geopiers. Similar to the proposed project, the Reduced Project Alternative would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the project site during the records search or during the Native American consultation. Based on the results of the Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The Reduced Project Alternative would be required to incorporate the same mitigation measure as the proposed project that requires Native American monitoring and evaluation of archaeological resources by the Native American monitor, and would also be required to comply with Health and Safety Code Section 7050.5. Implementation of mitigation and adherence to regulatory standards would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, the Reduced Project Alternative would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. The Reduced Project Alternative would result in less impacts to unknown tribal cultural resources compared to the proposed project because it would require the installation of fewer geopiers.

5.5.16.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. Similar to the proposed project, the Commercial/Retail Alternative would require ground-disturbing construction activities during development; however, this alternative would not require the installation of geopiers. Similar to the proposed project, the Commercial/Retail Alternative would not cause a substantial adverse change in the significance of a tribal cultural resource as defined by CEQA that is listed or eligible for listing in the California Register or a local register because no previously recorded cultural resources were identified in the project site during the records search or during the Native American consultation. Based on the results of the Native American consultation, there is potential that ground-disturbing construction activities would impact previously undiscovered significant tribal cultural resources. The Commercial/Retail Alternative would be required to incorporate the same mitigation measure as the proposed project that requires Native American monitoring and evaluation of archaeological resources by the Native American monitor, and would also be required to comply with Health and Safety Code Section 7050.5. Implementation of mitigation and adherence to regulatory standards would reduce potential impacts related to tribal cultural resources to a less than significant level.

In summary, the Commercial/Retail Alternative would result in no impacts to tribal cultural resources that are listed or eligible for listing in the California Register or a local register, and less than significant impacts with mitigation incorporated for previously undiscovered significant tribal cultural resources and Native American human remains. The Commercial/Retail Alternative would result in less impacts to unknown tribal cultural resources compared to the proposed project because it would not require the installation of geopiers.

5.5.17 Utilities and Service Systems

Utilities and service systems include water, wastewater, electricity, natural gas, telecommunication, solid waste, and storm drain facilities. The proposed project would include on-site water distribution, wastewater conveyance, stormdrain systems, electrical lines, natural gas lines, and telecommunication lines that would connect to the existing utility systems in the City. The proposed project would increase demand for these services as well as solid waste disposal and wastewater treatment; however, there is sufficient supplies and capacity available to service the increased demand. Impacts related to utilities and service systems would be less than significant and no mitigation is required.

5.5.17.1 Alternative 1: No Project Alternative

The No Project Alternative would not include any new development on the project site so it would not increase demand for or require any enhancement or new construction of public facility infrastructure for electricity, natural gas, water, or telecommunications. Additionally because no construction would occur and there would be no residential or commercial uses added to the site, no increase in solid waste or wastewater generation would occur. Therefore, the No Project Alternative would have no impacts on utilities and service systems, and this alternative would have less impacts than the proposed project.

5.5.17.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the same commercial uses (e.g., hotel, retail, and restaurant uses) as the proposed project, but with a reduced residential component, no movie theater, and an increased retail component. Compared to the proposed project, the Reduced Project Alternative would result in less demand for electricity, natural gas, water, or telecommunications because of the reduced residential and hotel uses on the project site. Additionally, the Reduced Project Alternative would generate less solid waste and wastewater. Although the reduction in demand for electricity, natural gas, water, and telecommunications and generation of less solid waste and wastewater would be partially offset by the increase in retail space, the Reduced Project Alternative would result in a net reduction in demand for electricity, natural gas, water, and telecommunications and less generation of solid waste and wastewater compared to the proposed project. Therefore, the Reduced Project Alternative would have less than significant impacts on utilities. This alternative would have less impacts related to utilities and service systems than the proposed project.

5.5.17.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. Compared to the proposed project, the Commercial/Retail Alternative would result in less demand for electricity, natural gas, water, or telecommunications because this alternative would not include residential uses, which typically have a higher utility demand than retail/commercial uses. Additionally, the Commercial/Retail Alternative would generate less solid waste and wastewater. Therefore, the Commercial/Retail Alternative would have less than significant impacts on utilities. This alternative would have less impacts related to utilities and service systems than the proposed project.

5.5.18 Project Objectives

The Project Objectives include:

Objective 1: Provide uses that meet the City's General Plan balanced development goals and objective to locate higher density housing adjacent to commercial and employment opportunities to encourage pedestrian access and provide a consumer base for commercial uses (GP LU-1.4).

Objective 2: Provide a balanced mix of residential and commercial uses in the Cypress Business and Professional Center Specific Plan, which would promote a commercial environment that balances quality development with economic growth while building in flexibility to respond to the market demands (Cypress Business & Professional Center Specific Plan, Objectives 1.2 and 1.3).

Objective 3: Support the retention of local employers and increase the fiscal benefits to the City by attracting new retail, restaurant, hotel and entertainment businesses that can better serve the local population and employment and would generate additional revenue to the City through increased sales, property, and transient occupancy taxes (GP LU-17.1).

Objective 4: Meet the demand for new hotel rooms in the Cypress Business Center to serve the local business community.

Objective 5: Provide new drainage improvements on the project site, which would reduce the risk of downstream flooding hazards.

Objective 6: Provide a new community gathering place for Cypress residents and workers, including a public dog park and a landscaped plaza with outdoor dining areas.

Objective 7: Allow the City to divest itself of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance, and the State Controller's Office, which would facilitate the generation of additional revenue to the City by selling the land to a private owner, who would return the land to the property tax rolls and develop it with new revenue-generating uses.

Objective 8: Expand the variety of housing stock in the City, which would help meet the existing and future housing needs of all Cypress residents, by providing high density rental units (GP HOU-3.5).

Objective 9: Expand and improve the City's housing supply by developing high-quality housing in the City to alleviate the housing crisis and help the City meet its Regional Housing Needs Assessment allocations (GP HOU-4).

5.5.18.1 Alternative 1: No Project Alternative

Under the No Project Alternative, the project site would remain a paved parking lot that would continue to be used for vehicle parking during events at the nearby Los Alamitos Race Course and temporarily used throughout the year as a Christmas tree lot, truck staging area, and auxiliary truck and trailer storage. No residential, commercial, or other new uses would be developed on the project site. The No Project Alternative would not include development of residential uses adjacent to commercial and employment opportunities, would not facilitate the generation of additional revenue to the City through the sale of the land and increased sales and property tax, and would not expand and improve the City's housing supply. Therefore, the No Project Alternative would not be consistent with any of the project objectives.

5.5.18.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would develop the project site with a mixed-use development with the commercial uses (e.g., hotel, retail, and restaurant uses) and residential uses. The Reduced Project Alternative would include residential uses adjacent to commercial and employment opportunities, would facilitate the generation of additional revenue to the City through the sale of the land and increased sales and property tax, and would expand and improve the City's housing supply. Therefore, the Reduced Project Alternative would be consistent with all of the project objectives, but to a lesser extent than the proposed project. This assumes, however, that a developer would be willing and able to purchase the project site and feasibly develop it at the reduced density.

5.5.18.3 Alternative 3: Commercial/Retail Alternative

The Commercial/Retail Alternative would develop the project site with retail and restaurant uses. The Commercial/Retail Alternative would not include residential or hotel uses. Therefore, the Commercial/Retail Alternative would not be consistent with the following project objectives:

Objective 1: Provide uses that meet the City's General Plan balanced development goals and objective to locate higher density housing adjacent to commercial and employment opportunities to encourage pedestrian access and provide a consumer base for commercial uses (GP LU-1.4).

Objective 2: Provide a balanced mix of residential and commercial uses in the Cypress Business and Professional Center Specific Plan, which would promote a commercial environment that balances quality development with economic growth while building in flexibility to respond to the market demands (Cypress Business & Professional Center Specific Plan, Objectives 1.2 and 1.3).

Objective 4: Meet the demand for new hotel rooms in the Cypress Business Center to serve the local business community.

Objective 6: Provide a new community gathering place for Cypress residents and workers, including a public dog park and a landscaped plaza with outdoor dining areas.

Objective 8: Expand the variety of housing stock in the City, which would help meet the existing and future housing needs of all Cypress residents, by providing high density rental units (GP HOU-3.5).

Objective 9: Expand and improve the City's housing supply by developing high-quality housing in the City to alleviate the housing crisis and help the City meet its Regional Housing Needs Assessment allocations (GP HOU-4).

If the City were able to find a buyer/developer for the project site with this alternative, the Commercial/Retail Alternative would facilitate the generation of additional revenue to the City through the sale of the land and increased sales and property tax from the new commercial/retail uses on the project site. However, the City's past experience in marketing the project site suggests that it would be difficult to sell the site for this purpose. The new commercial/retail uses would also create employment opportunities within the City. In addition, the Commercial/Retail Alternative would include drainage infrastructure and a detention system that would greatly reduce the amount of flows that would reach the downstream stormdrain system compared to the existing condition. Therefore, if economically feasible, the Commercial/Retail Alternative would be consistent with the following project objectives:

Objective 3: Support the retention of local employers and increase the fiscal benefits to the City by attracting new retail, restaurant, hotel, and entertainment businesses that can better serve the local population and employment and would generate additional revenue to the City through increased sales, property, and transient occupancy taxes (GP LU-17.1).

Objective 5: Provide new drainage improvements on the project site, which would reduce the risk of downstream flooding hazards.

Objective 7: Allow the City to divest itself of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance and the State Controller's Office, which would facilitate the generation of additional revenue to the City by selling the land to a private owner, who would return the land to the property tax rolls and develop it with new revenue-generating uses.

5.6 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an Environmentally Superior Alternative among the proposed project and the alternatives evaluated in an EIR. *State CEQA Guidelines* Section 15126.6(e)(2) provides that, if the No Project Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives and the proposed project. Table 5.C provides, in summary format, a comparison of the level of impacts of each alternative to the proposed project.

Table 5.C: Comparison of the Environmental Impacts of the Proposed Project and Project Alternatives

Impact Area	Proposed Project Impact with Mitigation (if any)	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Commercial/Retail Alternative
Aesthetics	Less than Significant	Less	Less	Less
Air Quality	Less than Significant	Less	Less	Greater
Biological Resources	Less than Significant	Less	Similar	Similar
Cultural Resources	Less than Significant[1]	Less	Less	Less
Energy	Less than Significant	Less	Less	Less
Geology and Soils	Less than Significant[1]	Less	Less	Less
Greenhouse Gas Emissions	Significant and Unavoidable[1]	Less	Less/Greater[2]	Less/Greater[2]
Hazards and Hazardous Materials	Less than Significant	Less	Similar	Similar
Hydrology and Water Quality	Less than Significant	Greater	Similar	Similar
Land Use and Planning	Less than Significant	Greater	Similar	Similar
Noise	Less than Significant[1]	Less	Less	Greater
Population and Housing	Less than Significant	Less	Less	Less
Public Services	Less than Significant[1]	Less	Less	Less
Recreation	Less than Significant	Less	Less	Less
Transportation	Less than Significant	Less	Less	Greater
Tribal Cultural Resources	Less than Significant[1]	Less	Less	Less
Utilities and Service Systems	Less than Significant	Less	Less	Less

[1] Mitigation identified.

[2] This alternative would generate ***less*** total greenhouse gas emissions than the proposed project; however, it would generate a ***greater*** amount of greenhouse gas emissions per capita than the proposed project.

The No Project Alternative has the least impact on the environment because the project site would remain a paved parking lot and would thereby avoid most of the proposed project's environmental impacts. However, the No Project Alternative cannot be the only Environmentally Superior Alternative. Therefore, according to Section 15126.6(e)(2) of the *State CEQA Guidelines*, because the No Project Alternative has been identified as the environmentally superior alternative, the EIR shall also identify the proposed project or one of the other alternatives as the Environmentally Superior Alternative.

Putting aside the No Project Alternative, the Reduced Project Alternative is the Environmentally Superior Alternative. As shown in Table 5.C, the Reduced Project Alternative would result in more impacts that are "less" than the proposed project compared to the commercial/Retail Alternative. The Reduced Project Alternative has the least impact on the environment because the project site would be developed at a reduced density, thereby reducing the most of the proposed project's environmental impacts compared to the other alternatives (other than the No Project Alternative). Although the Reduced Project Alternative would result in less total greenhouse gas emissions than the proposed project, it would generate a greater amount of greenhouse gas emissions per capita than the proposed project. Therefore, its impacts would also be significant and unavoidable. The Reduced Project Alternative would also meet all of the project objectives, but to a lesser extent than the proposed project. Accordingly, it is determined that the Reduced Project Alternative is the Environmentally Superior Alternative because it would meet all of the project's objectives and would result in reduced environmental impacts as compared to the proposed project.

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6.0 OTHER CEQA CONSIDERATIONS

6.1 SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(c) of the *State CEQA Guidelines* requires that an Environmental Impact Report (EIR) describe any significant impacts that cannot be avoided. Specifically, Section 15126.2(c) states that an EIR shall:

> "Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

The Executive Summary of this document (Chapter 1.0) contains a detailed summary that identifies the proposed project's environmental impacts as compared to existing conditions, proposed mitigation measures, and the level of significance of any impacts after mitigation. The following is a summary of the impact that is considered significant, adverse, and unavoidable after all mitigation is applied.

6.1.1 Greenhouse Gas Emissions

The proposed project would exceed the applicable South Coast Air Quality Management District (SCAQMD) Service Population greenhouse gas (GHG) thresholds. Thus, project-related emissions would have a potentially significant impact related to the generation of GHG emissions.

Mitigation Measures to reduce the project GHG emissions include energy conservation measures and developing a Transportation Demand Management (TDM) Program. Implementation of the mitigation measures described above would reduce GHG emissions. However, because the type and extent of measures that could be implemented will be dependent on the individual future tenants that occupy the project site, the total amount of GHG reductions cannot be quantified at this time. For example, the ability of a business to affect employee and patrons vehicle miles traveled would depend in part on the number of employees and patrons, where they live, and the availability of regional programs such as transit buses. Therefore, impacts related to the generation of GHG emissions would remain significant and unavoidable.

6.2 ENERGY IMPACTS

According to Section 15126.2(b) of the *State CEQA Guidelines*, "[i]f analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use."

As described in Section 4.5, Energy, of this Draft EIR, the proposed project would not result in significant impacts related to energy use. Therefore, no mitigation is required.

6.3 GROWTH-INDUCING IMPACTS

Sections 15126(d) and 15126.2(e) of the *State CEQA Guidelines* require that an EIR analyze growth-inducing impacts and discuss the ways in which a proposed project could foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. This section examines ways in which the proposed project could foster economic or population growth, or the construction of additional housing either directly or indirectly in the surrounding environment. *State CEQA Guidelines* Section 15126.2(d) also requires a discussion of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. To address these issues, potential growth-inducing effects were examined through analysis of the following questions:

- Would the project remove obstacles to, or otherwise foster, population growth (e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development)?
- Would the project foster economic growth?
- Would approval of the project involve some characteristic that may encourage and facilitate other activities that could significantly affect the environment?

Growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (*State CEQA Guidelines*, Section 15126.2(e)). This issue is presented to provide additional information on ways in which the proposed project could contribute to significant changes in the environment beyond the direct consequences of developing the proposed land uses as described in earlier sections of this Draft EIR.

6.3.1 Removal of Obstacles to, or Otherwise Foster, Population Growth

The area surrounding the project site is already highly urbanized and developed with a variety of residential, business park, racetrack, and commercial land uses, so limited population growth is feasible within the vicinity of the project site. In any event, the proposed project would not remove impediments to population growth in the area surrounding the project site. While the proposed project may require water, sewer, drainage, electricity, and natural gas lines on site and in the immediate vicinity of the project site, such improvements would be intended primarily to meet project-related demand and would not necessitate substantial utility infrastructure improvements. In addition, all roadway improvements planned with respect to the proposed project are intended to provide for better circulation flows within the project site and the immediate project vicinity, and would not foster off-site population growth.

The construction of the proposed project would generate a substantial number of construction-related jobs. However, the proposed project would not promote construction workers relocating their places of residence as a direct consequence of working on the proposed project because it is expected that local and regional construction workers would be available to meet the proposed project's construction needs. The work requirements of most construction projects are highly specialized so construction workers remain at a job site only for the limited time in which their

specific skills are needed to complete a particular phase of the construction process. Therefore, the proposed project would not induce material population growth from a short-term employment perspective.

Upon completion of the proposed project, the 251 residential housing units are estimated to generate a total of approximately 758 new residents on the project site. While this direct population growth would increase the demand for neighborhood-serving commercial uses in the area surrounding the project site, the proposed project would be located in a built out area of the City of Cypress that is already served by neighborhood-serving retail and service uses. Although some local businesses that provide goods and services to nearby residents may hire a small number of additional employees to accommodate the minor increase in clientele associated with the proposed project, this additional hiring is not expected to induce material population growth because most of these new employees are not expected to change their place of residence.

With regard to project operation, the proposed hotel, theater, apartment building, and commercial/retail components are expected to employ approximately 149 employees. Due to the limited number of jobs induced, and because it is expected that the local and regional labor pools would be available to fill these jobs, it is unlikely that the employment offered by the proposed project would cause people to move or relocate to the area solely for the purpose of being close to the project site. Therefore, although the proposed project would provide employment opportunities, it would not result in substantial indirect growth or create a significant demand for housing in the project site vicinity.

Therefore, given that the employment opportunities generated by the construction and operation of the proposed project would be filled by people who would commute to the project site, the potential population growth associated with project employees would be minimal.

6.3.2 Foster Economic Growth

In its existing condition, the project site is a paved and underutilized parking lot. Aside from the receipt of short-term lease payments associated with temporary uses, the project site currently does not generate revenue for the City. The proposed project would provide a new source of property, sales, and transient occupancy tax revenues to the City, thereby increasing the local tax base. The proposed project would also introduce new residents and hotel guests that would invigorate the local economy by spending on goods and services at local businesses. As previously discussed, the construction of the proposed project would generate a substantial number of construction-related jobs and new employment opportunities in the City during the construction period. As also discussed, the hotel, theater, apartment building, and commercial/retail components would be expected to employ approximately 149 workers, and these positions would likely be filled by persons already residing in the City of Cypress or the region. Therefore, the proposed project would foster economic growth.

6.3.3 Other Characteristics

The proposed project involves a Specific Plan Amendment to modify the land use designation of the project site from Professional Office to a newly created mixed-use land use district that would allow residential and hotel uses, while still permitting commercial/retail uses. The proposed project

includes the development of up to 251 residential units on the project site. Because the Specific Plan Amendment included as part of the proposed project would not modify the existing General Plan land use designations or zoning classifications on any off-site properties, the proposed project would not directly increase the City's population beyond the number of residents who would live in the 251 on-site residential units. While it is conceivable that the project's approval could attract the interest of new housing developers to Cypress who may seek the approval of Specific Plan or General Plan Amendments on other undeveloped or underutilized properties in the City for the purpose of developing new housing, it is highly unlikely, given that the City of Cypress has very little land that would be able to accommodate new housing development that has not already been designated for housing. Any future growth in the City is likely to occur regardless of whether or not the project is approved.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(d) of the *State CEQA Guidelines* requires that an EIR consider and discuss significant irreversible changes that would be caused by implementation of a proposed project. The *State CEQA Guidelines* specify that the use of nonrenewable resources during the initial and continued phases of a project should be discussed because a large commitment of such resources makes removal or non-use thereafter unlikely. Primary and secondary impacts (e.g., a highway improvement that provides access to a previously inaccessible area) should also be discussed because such changes generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with a project and should be discussed.

The types and level of development associated with the proposed project would consume limited, slowly renewable, and nonrenewable resources. This consumption would occur during construction of the proposed project and would continue throughout the operational lifetime of the proposed project. The development of the proposed project would require a commitment of resources that would include (1) building materials, (2) fuel and operational materials/resources, and (3) the transportation of goods and people to and from the project site.

Construction of the proposed project would require consumption of resources that are not replenishable or that may renew so slowly as to be considered nonrenewable. These resources would include certain types of lumber and other forest products (e.g., hardwood lumber), aggregate materials used in concrete and asphalt (e.g., sand, gravel, and stone), metals (e.g., steel, copper, and lead), petrochemical construction materials (e.g., plastics), and water. Fossil fuels (e.g., gasoline and oil) would also be consumed in the use of construction vehicles and equipment. Water, which is a limited, slowly renewable resource, would also be consumed during construction of the proposed project. However, given the temporary nature of construction activities, water consumption during construction would result in a less than significant impact on water supplies. Furthermore, the use of construction vehicles and equipment would require the consumption of nonrenewable fossil fuels such as natural gas and oil. As with other resources consumed during construction, the consumption of nonrenewable fossil fuels for energy use would occur on a temporary basis during construction of the proposed project.

Operation of the proposed project would continue to expend similar nonrenewable resources that are currently consumed within Cypress and on site. These include energy resources such as

electricity, petroleum-based fuels, fossil fuels, and water. Energy resources would be used for heating and cooling buildings, transportation within the project site, and building lighting. Fossil fuels are primary energy sources for project construction and operation. This existing, finite energy source would thus be incrementally reduced. Under Title 24, Part 6 of the California Code of Regulations (CCR), conservation practices limiting the amount of energy consumed by the proposed project would be required during operation. Additionally the proposed project would implement renewable energy (i.e., solar panels and LED lights) and USEPA energy star rating appliances and would incorporate additional energy efficiency measures. Nevertheless, the use of such resources would continue to represent a long-term commitment of essentially nonrenewable resources.

The proposed project would result in the limited use of potentially hazardous materials contained in typical cleaning agents and pesticides for landscaping on the project site. Such materials would be used, handled, stored, and disposed of in accordance with applicable government regulations and standards that would serve to protect against a significant and irreversible environmental change resulting from the accidental release of hazardous materials.

In summary, construction and operation of the proposed project would commit the use of slowly renewable and nonrenewable resources and would limit the availability of these resources on the project site for future generations or for other uses during the life of the proposed project. However, the continued use of such resources during operation would be on a relatively small scale and consistent with regional and local urban design and development goals for the area. As a result, the use of nonrenewable resources in this manner would not result in significant irreversible changes to the environment under the proposed project.

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7.0 MITIGATION MONITORING AND REPORTING PROGRAM

7.1 MITIGATION MONITORING REQUIREMENTS

California Public Resources Code Section 21081.6, which is part of the CEQA statute, mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.

- The lead agency shall provide measures to mitigate or avoid potentially significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

- Prior to the close of the public review period for a draft environmental impact report, a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

7.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program for the proposed City Center Project (Project) has been prepared in compliance with Section 21081.6. It describes the requirements and procedures to be followed by the City of Cypress, as the Lead Agency, to ensure that all mitigation measures adopted as part of the proposed project will be carried out as described in this Draft EIR.

Table 7.A sets forth the proposed mitigation monitoring and reporting program. It lists each of the mitigation measures specified in this Draft EIR and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 7.A: Mitigation Monitoring and Reporting Program

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
4.2: Air Quality					
Regulatory Compliance Measure AQ-1: **SCAQMD Rule 403.** During clearing, grading, earth moving, or excavation operations, excessive fugitive dust emissions shall be controlled by regular watering or other dust preventative measures by using the following procedures, in compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 during construction. ● All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. ● All material transported on-site or off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. ● The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized so as to prevent excessive amounts of dust. ● These control techniques shall be indicated in project specifications. Compliance with this measure shall be subject to periodic site inspections by the City of Cypress (City). ● Visible dust beyond the property line emanating from the project shall be prevented to the maximum extent feasible.	During ground-disturbing activities	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure AQ-2: All trucks that are to haul excavated or graded material shall comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2) and (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads.	During construction	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
Regulatory Compliance Measure AQ-3: Prior to approval of the project plans and specifications, the City of Cypress Director of Community Development, or designee, shall confirm that the construction bid packages specify: ● Contractors shall use high-pressure-low-volume paint applicators with a minimum transfer efficiency of at least 50 percent; ● Coatings and solvents that will be utilized have a volatile organic compound content lower than required under SCAQMD Rule 1113; and ● To the extent feasible, construction/building materials shall be composed of pre-painted materials.	Prior to approval of project plans	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure AQ-4: The project shall comply with SCAQMD Rule 402.	During construction and operation	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure AQ-5: The project shall meet the Statewide 2019 Building Energy Efficiency Standards, formally known as Title 24, Part 6.	During construction	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
4.3: Biological Resources					
Regulatory Compliance Measure BIO-1: Nesting Bird Survey and Avoidance If vegetation removal, construction, or grading activities are planned to occur within the active nesting bird season (February 1 through August 31), the City of Cypress (or designee), shall confirm that the Applicant/Developer has retained a qualified biologist who shall conduct a	Three days prior to commencement of grading activities	Applicant/Developer and City of Cypress Community Development Director, or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
preconstruction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust, etc. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.					
4.4: Cultural Resources					
Regulatory Compliance Measure CUL-1: **Human Remains.** If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to State PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.	During construction activities	Construction supervisor/ Applicant/ Developer/			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
Mitigation Measure CUL-1 : **Archaeological Resources.** Prior to the issuance of a grading permit, a qualified professional archaeologist shall be retained by the Applicant/Developer to provide cultural resources awareness training to construction personnel. The qualified professional archaeologist shall also be retained by the Applicant/Developer on an on-call basis. This training shall 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 shall be used in the event of inadvertent discoveries of cultural resources during construction. In the event that construction personnel encounter any archaeological deposits during construction activities, the retained qualified professional archaeologist shall be contacted immediately. If any such resources are discovered, contractors shall stop work in the immediate area of the find and contact the retained archaeologist to assess the nature of the find and determine if future studies and/or monitoring is appropriate. Upon completion of any monitoring activities, the archaeologist shall prepare a report to document the methods and results of monitoring activities. This report shall be submitted to the South Central Coastal Information Center (SCCIC).	Prior to the issuance of a grading permit and during construction activities	Applicant/Developer and/or construction supervisor/City of Cypress Director of Community Development Department, or designee			
4.5: Energy					
Regulatory Compliance Measure E-1: **California Code of Regulations (CCR), Title 24.** Prior to the issuance of building permits, the City of Cypress (City) Chief Building Official, or designee, shall confirm that the project design complies with the 2019 Building Energy Efficiency Standards (CCR Title 24) energy conservation and green building standards, as well as those listed in Part 11 (California Green Building Standards [CALGreen Code]). The City's Chief Building Official shall confirm that the project complies with the mandatory measures listed in the CALGreen Code for residential and non-residential building construction.	Prior to issuance of a building permit	Applicant/Developer and City of Cypress Chief Building Official, or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
4.6: Geology and Soils					
Regulatory Compliance Measure GEO-1: **California Building Code Compliance Seismic Standards.** All structures shall be designed in accordance with the seismic parameters presented in the Geotechnical Assessment prepared for this project (NMG Geotechnical, Inc., 2019) and applicable sections of the most current California Building Code (CBC). Prior to the issuance of building permits for planned structures, the Project Soils Engineer and the City of Cypress Chief Building Official, or designee, shall review building plans to verify that the structural design conforms to the requirements of the Geotechnical Assessment and the City of Cypress Municipal Code.	Prior to issuance of building permits	Applicant/Developer and City of Cypress Chief Building official, or designee			
Mitigation Measure GEO-1: **Compliance with the Recommendations in the Project Geotechnical Assessment.** The Applicant/Developer's construction contractor shall implement the recommendations of the Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California (NMG Geotechnical, June 2019; Geotechnical Assessment) prepared for the proposed project, as applicable to the satisfaction of the City of Cypress' (City) Chief Building Official or designee, including, but not limited to: 1. To address potential liquefaction potential and seismically induced settlement, stone columns or (Geopier brand) rammed aggregate piers (RAP) or equivalent ground improvement method alternatives shall be used and installed to a depth of 15 feet (ft). Building areas where the ground is improved with RAPs or stone columns shall provide a minimum 2 ft thick layer of newly compacted fill. The smaller retail buildings may be supported on a combination of newly compacted fill and shallower ground improvement, such as aggregate and geogrid	Prior to issuance of grading permits.	Applicant/Developer and City of Cypress Director of Public Works and Chief Building Official, or designee(s)			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
reinforcement. Fill material shall be a minimum of 5 ft below finish grade or 3 ft below the bottoms of foundations, whichever is deeper. The bottom of the excavation shall have a layer of geogrid, such as Tensar 130 or BX1515 and a minimum of 2 ft of aggregate base. The remaining fill may be compacted native soil. 2. The deeper undocumented fill in the southeast corner of the project site (future retail shops area) should be completely removed and replaced with engineered fill. 3. To address shallow groundwater and wet soil, some type of ground stabilization, such as cement treatment or aggregate or a combination of both shall be used. 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. 4. Concrete slabs shall be used for all foundations and slabs on grade and shall be a minimum of 4 inches thick. Additional site testing and final design evaluation shall be conducted by the Project Geotechnical Consultant to refine and enhance these requirements. The Applicant/Developer shall require the Project Geotechnical Consultant to assess whether the requirements in that report need to be modified or refined to address any changes in the project features that occur prior to the start of grading. If the Project Geotechnical Consultant identifies modifications or refinements to the requirements, the Applicant/Developer shall require appropriate changes to the final project design and specifications. Design, grading, and construction shall be performed in accordance with the requirements of the City of Cypress Municipal Code and the California Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the requirements of the Project Geotechnical Consultant as summarized in a final written report, subject to review by the City of Cypress Director of Public Works, or designee, prior to commencement of grading activities.					

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
Grading plan review shall also be conducted by the Director of Public Works, or designee, prior to the start of grading to verify that the requirements developed during the geotechnical design evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the Project Geotechnical Consultant as summarized in a final report based on the CBC applicable at the time of grading and building, and the City's Building Code. On-site inspection during grading shall be conducted by the Project Geotechnical Consultant and the City of Cypress Director of Public Works/City Engineer, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans. Prior to the final grading permits, the Project Geotechnical Consultant shall submit a Final Testing and Observation Geotechnical Report for Rough Grading to the City of Cypress Director of Public Works/ City Engineer, or designee.					
Mitigation Measure GEO-2: **Procedures for Unexpected Paleontological Resources Discoveries.** If paleontological resources are discovered during ground-disturbing activities associated with the proposed project, construction personnel shall immediately halt work within 50 ft of the discovery, and the Applicant/Developer or construction supervisor shall contact a qualified paleontologist to assess the discovery for scientific importance. A qualified paleontologist is defined as a person with an M.S. or Ph.D. in geology or paleontology and who meets the standards set forth by the Society of Vertebrate Paleontology. The paleontologist shall make recommendations regarding the collection, treatment, and disposition of the discovery. Scientifically important resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a museum repository. If paleontological resources are discovered, regardless of their scientific importance,	During ground-disturbing activities	Applicant/Developer and/or construction supervisor/City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
paleontological monitoring shall be required for subsequent ground-disturbing activities at a frequency, depth, and/or interval determined by the paleontologist. Paleontological monitoring shall be conducted by a qualified paleontological monitor as set forth in the Society of Vertebrate Paleontology standards. At the conclusion of monitoring, a final monitoring report shall be prepared by the paleontologist to document the results of monitoring and project compliance with all regulations and project requirements. If scientifically important paleontological resources are recovered, this report shall also document those paleontological resources with a catalog, descriptions, and photographs as determined appropriate by the paleontologist. The final monitoring report shall be submitted to the City of Cypress Director of Community Development Department or designee for review and approval. A copy of this final report shall also accompany the fossil material to the museum repository.					
4.7: Greenhouse Gas Emissions					
Mitigation Measure GHG-1: **Energy Conservation.** Prior to the issuance of building permits, the Applicant/Developer shall provide evidence to the satisfaction of the City of Cypress Director of Community Development Department, or designee, that the project's retail commercial buildings, multi-family residential uses, hotel, and movie theater shall be designed and built to be 10 percent more energy-efficient than 2019 Title 24 requirements or the current Title 24 requirement, whichever is more stringent.	Prior to the issuance of building permits	Applicant/Developer and the City of Cypress Director of Community Development, or designee			
Mitigation Measure GHG-2: **Transportation Demand Management (TDM) Program.** The Applicant/Developer shall develop a TDM Program for on-site residents and workers with the goal of reducing project-related vehicle miles traveled (VMT). The TDM strategies shall include, but not be limited to, the following: i. Prior to the issuance of a building permit for any of the project's buildings, the Applicant/Developer shall provide	Prior to the issuance of building permits/ prior to the issuance of a certificate of occupancy for the project's commercial	Applicant/Developer and the City of Cypress Community Development Director, or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
evidence to the satisfaction of the Director of the City of Cypress Community Development Department, or designee, that a bicycle rack or a secured bicycle storage area shall be installed within 50 feet of each proposed building.	buildings				
ii. Prior to the issuance of a certificate of occupancy for the apartment building, the Apartment Building Manager shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that bike route maps, local transit route maps and schedules, and other transportation information, such as the existing carpooling program sponsored by the Orange County Transportation Authority (OCTA), are displayed in a prominent area accessible to residents and employees.					
iii. Prior to the issuance of a certificate of occupancy for the project's commercial buildings, the Applicant/Developer shall provide evidence to the Director of the City of Cypress Community Development Department, or designee, that the lease agreements executed with any tenants contain provision requiring each business to provide cash incentives for employees to use public transit and display bike route maps, local transit route maps and schedules, and other transportation information, such as OCTA's existing carpooling program in a prominent area accessible to employees.					
iv. The Applicant/Developer shall organize an annual event on the project site promoting the use of transit, carpooling programs, and non-motorized methods of transportation by project residents, employees, and visitors. The City of Cypress Director of Community Development Department, or designee, shall be responsible for confirming that the event is held.					

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
4.8: Hazards and Hazardous Materials					
Regulatory Compliance Measure HAZ-1: **Federal Aviation Regulation Title 14 Part 77.** The Applicant/Developer shall notify the Federal Aviation Administration (FAA) of any proposed structure(s) that would penetrate the 100 to 1 imaginary surface that surrounds the runway at Joint Forces Training Base Los Alamitos at least 45 days prior to beginning construction.	45 days prior to beginning construction	Applicant/Developer and Federal Aviation Administration			
4.9: Hydrology and Water Quality					
Regulatory Compliance Measure HYD-1: **Construction General Permit.** Prior to commencement of construction activities, the Applicant/Developer shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit),* NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Stormwater Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the project from the SMARTS and provided to the Director of the City of Cypress Community Development Department, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to, preparation of a SWPPP and implementation of construction site best management	Prior to commencement of construction activities	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., Sediment Control, Erosion Control, and Good Housekeeping BMPs) to control the pollutants in stormwater runoff. Construction Site BMPs shall also conform to the requirements specified in the latest edition of the Orange County Stormwater Program *Construction Runoff Guidance Manual for Contractors, Project Owners, and Developers* to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed. Upon completion of construction activities and stabilization of the project site, a Notice of Termination shall be submitted via SMARTS.					
Regulatory Compliance Measure HYD-2: **Groundwater Dewatering Permit.** If groundwater dewatering is required during excavation activities, the Applicant/Developer shall obtain coverage under the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality* (Order No. R8-2009-0003, NPDES No. CAG998001) (De Minimis Permit). This shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to the start of dewatering. Groundwater dewatering activities shall comply with all applicable provisions in the permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.	Prior to commencement of construction activities	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
Regulatory Compliance Measure HYD-3: **Best Management Practices.** The Applicant/Developer shall implement the BMPs identified in Section IV of the Water Quality Management Plan and the drainage improvements identified in the Hydrology and Hydraulics Study. In addition, the Property Management Association shall be the responsible party for inspection and maintenance of the BMPS as identified in Section V of the Preliminary Water Quality Management Plan.	During construction and operation	Applicant/Developer and Property Management Association			
4.11: Noise					
Regulatory Compliance Measure NOI-1: The construction contractor shall limit all construction-related activities to between the hours 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. No construction shall be permitted outside of these hours or on Sundays or a federal holiday.	During construction	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure NOI-2: Mechanical equipment, including air conditioning units in residential, commercial, and industrial zoning districts, shall be enclosed within a structure or completely screened from view from surrounding properties by the use of a fence or wall consistent with Section 3.11.100(b) of the City of Cypress Municipal Code.	During operation	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure NOI-3: Trash collection and compacting shall be limited to between the hours of 5:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts and between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday in commercial zoning districts that are within 200 feet of residential zoning districts, consistent with Section 3.10.070(C) of the City of Cypress Municipal Code.	During operation	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
Mitigation Measure NOI-1: Prior to the issuance of a grading permit, the construction contractor shall demonstrate, to the satisfaction of the City of Cypress Director of Community Development, or designee, the following: ● Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices. ● Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. ● During construction, stationary construction equipment shall be placed such that emitted noise is directed away from noise-sensitive receptors. ● All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners and residents to contact the job superintendent with concerns. If the developer receives a noise related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request.	Prior to issuance of any grading permits	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Mitigation Measure NOI-2: Prior to the issuance of building permits, the project Applicant/Developer shall demonstrate, to the satisfaction of the City of Cypress Director of Community Development, or designee, that on-site stationary noise sources, such as rooftop air conditioners, shall not exceed City noise standards as stated within the City's Municipal Code Sections 13-68 and 13-69.	Prior to issuance of any building permits	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
4.13: Public Services					
Regulatory Compliance Measure REC-1: **Dedication of Parkland and/or Payment of Park Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof of compliance with the applicable provisions of Chapter 25 (Subdivisions), Article 6, Park and Recreational Facilities, of the City of Cypress Municipal Code to the Director of the City of Cypress Community Development Department, or designee.	Prior to issuance of any building permits	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Regulatory Compliance Measure PS-1: **Payment of School Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof to the Director of the City of Cypress Community Development Department, or designee, that payment of school fees to the Anaheim Union High School District has been made in compliance with Section 65995 of the California Government Code.	Prior to issuance of any building permits	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
Mitigation Measure PS-1: **Secured Fire Protection Agreement.** Prior to the issuance of any building permits, the Applicant/ Developer shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). This Agreement shall specify the Applicant/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.	Prior to issuance of any building permits	Applicant/Developer and Orange County Fire Authority (OCFA)/ City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
4.14: Recreation					
Regulatory Compliance Measure REC-1: **Dedication of Parkland and/or Payment of Park Fees.** Prior to issuance of any building permits, the Applicant/Developer shall provide proof of compliance with the applicable provisions of Chapter 25 (Subdivisions), Article 6, Park and Recreational Facilities, of the City of Cypress Municipal Code to the Director of the City of Cypress Community Development Department, or designee.	Prior to issuance of any building permits	Applicant/Developer and City of Cypress Director of Community Development Department or designee			
4.16: 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 associated with pad grading of Retail Building C (the northernmost retail building proposed directly to the west of Winners Circle) and 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	Prior to the issuance of a grading permit	Applicant/Developer and/or construction supervisor/City of Cypress Director of Community Development Department or designee			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
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.					
4.17: Utilities and Service Systems					
Regulatory Compliance Measure UTIL-1: **Sewer Improvement Standards.** All required sewer improvements shall be designed and constructed to City and Orange County Sanitation District (OCSD) standards and shall be approved by the City of Cypress (City) Engineer prior to development. These improvements may be constructed in a phased sequence depending upon the development process. Facilities shall be dedicated to the City and/or OCSD at the completion of construction.	Prior to issuance of building permits Completion of applicable facilities	Applicant/Developer and City of Cypress Engineer or designee			
Regulatory Compliance Measure UTIL-2: **Drainage Improvement Standards.** Drainage system improvements shall be designed and constructed to City and Orange County Flood Control District (OCFCD) standards, if applicable, and will be approved by those agencies prior to development. Improvements may be constructed in a phased sequence depending upon the development process. Facilities	Prior to issuance of grading permits Completion of applicable facilities	Applicant/Developer and City of Cypress Engineer			

Mitigation Measure/Regulatory Compliance Measure	Monitoring Milestone	Responsible Party Responsible for Monitoring	Verification of Compliance		
			Initials	Date	Remarks
shall be dedicated to the City at completion of construction to the extent required by the City (Source: Mitigation Measure No. 64, page 151, Cypress Business and Professional Center Specific Plan EIR).					
Regulatory Compliance Measure UTIL-3: **Water Conservation.** The Applicant/Developer shall comply with all State laws for water conservation measures and use of reclaimed water. Voluntary water conservation strategies shall be encouraged. The Building Division shall determine compliance prior to issuance of building permits (Source: Mitigation Measure No 75, pages 157 and 158, Cypress Business and Professional Center Specific Plan EIR).	Prior to issuance of building permits	Applicant/Developer and City of Cypress Building Division			
Regulatory Compliance Measure UTIL-4: **Construction and Demolition Ordinance**. The Construction Contractor shall comply with the provisions of City Ordinance No. 1166 and the 2016 California Green Building Standards Code, which would reduce construction and demolition waste. Ordinance No. 1166 is codified in Article VIII, Materials Questionnaire for Certain Construction and Demolition Project within the City of Cypress in the City of Cypress Municipal Code.	Prior to and during project construction	Applicant/Developer and City of Cypress Director of Community Development Department or designee			

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8.0 SIGNIFICANT UNAVOIDABLE IMPACTS

8.1 INTRODUCTION

California Environmental Quality Act (CEQA) Guidelines Section 15126.2(c) requires that an Environmental Impact Report (EIR) describe the significant adverse environmental impacts of a proposed project that cannot be avoided, including those effects that can be mitigated but not reduced to below a level of significance. If the EIR identifies impacts that cannot be alleviated without imposing an alternative design, the impact's implications and the reasons why the project is being proposed, despite those impacts, must also be described. The Executive Summary of this Draft EIR contains a detailed summary table that identifies the potentially significant adverse impacts of the Cypress City Center Project (proposed project), the proposed project mitigation measures, and the level of significance of each impact after mitigation. These impacts are also described in detail in those portions of Sections 4.1 through 4.17 titled Project Impacts and Mitigation Measures, in Chapter 4.0, Existing Setting, Environmental Analysis, Impacts, and Mitigation Measures.

As described in detail in Chapter 4.0, the proposed project would not result in significant unavoidable adverse impacts related to Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, 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. Therefore, the project impacts related to these issues are not discussed further in this section.

8.2 GREENHOUSE GAS EMISSIONS

The proposed project would be designed in compliance with existing regulations aimed at reducing GHG emissions. Specifically, the project would meet the 2019 Building Energy Efficiency Standards (California Code of Regulations [CCR] Title 24) and the California Green Building Standards Code (CALGreen Code). Although compliance with CCR Title 24 and the CALGreen Code would help to reduce the proposed project's GHG emissions, the overall emissions attributable to construction and operation of the proposed project of 7,208 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr) are expected to exceed the South Coast Air Quality Management District's (SCAQMD) thresholds of 3,000 MT CO_2e/yr. The proposed project's greenhouse gas emissions of 7.9 MT CO_2e per service population per year (CO_2e/SP/yr) would also exceed the SCAQMD's threshold of 4.3 MT CO_2e/SP/yr for 2022. Therefore, the proposed project would result in a significant unavoidable project impact and significantly contribute to an unavoidable cumulative impact related to greenhouse gas emissions and conflict with an applicable greenhouse gas reduction plan, policy, or regulations. Mitigation for greenhouse gas emissions would include energy conservation measures and implementation of a Transportation Demand Management (TDM) program. However, because the type and extent of measures that could be implemented would be dependent on the individual future tenants that occupy the project, the total volume of greenhouse gas reductions cannot be quantified at this time. For example, the ability of a business to affect employee and patrons vehicle miles traveled would depend in part on the number of employees and patrons, where they live, and the availability of regional programs such as transit buses. Therefore, impacts related to generation of greenhouse gas emissions would remain significant and unavoidable.

8.3 REASONS WHY THE PROJECT IS BEING PROPOSED DESPITE ITS SIGNIFICANT AND UNAVOIDABLE IMPACTS

As discussed above, the proposed project is anticipated to result in significant and unavoidable impacts related to greenhouse gas emissions. Despite this, the project is being proposed for the following reasons:

- The proposed project would provide a mixed-use project that would meet the City's General Plan balanced development goals and objectives to locate higher density housing adjacent to commercial and employment opportunities in order to encourage pedestrian access and provide a consumer base for commercial uses.

- The proposed project would support the retention of local employers and increase the fiscal benefits to the City by attracting new retail, restaurant, hotel, and entertainment businesses that can better serve the local population and employment and that would generate additional revenue to the City.

- The proposed project would meet the demand for new hotel rooms in the Cypress Business Center to serve the local business community.

- The proposed project would provide new drainage improvements on the project site, which would reduce the risk of downstream flooding hazards.

- The proposed project would allow the City to divest itself of real estate conveyed to it by the Cypress Redevelopment Agency in March 2011 in accordance with the Settlement Agreement between the City of Cypress, the Successor Agency to the Cypress Redevelopment Agency, the State Department of Finance, and the State Controller's Office.

- The proposed project would expand the variety of housing stock in the City, which would help meet the existing and future housing needs of all Cypress residents, by providing high-density rental units.

- The proposed project would expand and improve the City's housing supply by developing high-quality housing in the City to alleviate the housing crisis and help the City meet its Regional Housing Needs Assessment allocations.

- As described in Chapter 5.0, alternatives to the proposed project were identified and evaluated to determine if the identified significant impact could be eliminated while continuing to achieve the project objectives described above. As discussed in Chapter 5.0, no alternative project designs were identified that met the project objectives and eliminated the significant greenhouse gas impacts identified with the proposed project.

9.0 LIST OF PREPARERS AND PERSONS CONSULTED

9.1 CITY OF CYPRESS

The following individuals from the City of Cypress (City) were involved in the preparation of this Draft Environmental Impact Report (EIR):

- John P. Ramirez, AICP, City Planner, Community Development Department
- Jeff Zwack, Project Planner, Community Development Department
- Doug Dancs, PE, Director of Community Development, Community Development Department

9.2 EIR PREPARERS

The following individuals were involved in the preparation of this Draft EIR. The nature of their involvement is summarized below.

9.2.1 LSA

The following individuals were involved in the preparation of this Draft EIR:

- Deborah Pracilio, Principal in Charge
- Ryan Bensley, AICP, Associate/Project Manager
- Amy Fischer, Principal/Air Quality, Noise and Global Climate Change Specialist
- Sarah Rieboldt, PH.D., Associate/Senior Paleontological Resources Manager
- Nicole West, CPSWQ, QSD/QSP, Associate
- Jason Lui, Associate/Senior Noise Specialist
- Michael Slavick, Senior Air Quality Specialist
- Kerrie Collison, Senior Cultural Resources Manager
- Katherine Hughes, Environmental Planner
- Cara Carlucci, Environmental Planner
- Elise Miller, Assistant Environmental Planner
- Marlene Watanabe, Assistant Environmental Planner
- Abby Annicchiarico, Assistant Environmental Planner
- Jeremy Rosenthal, Biologist
- Gary Dow, Associate, Graphics
- Matt Phillips, Graphics Technician
- Lauren Johnson, Technical Editor
- Chantik Virgil, Senior Word Processor

9.3 TECHNICAL REPORT PREPARERS

The following individuals were involved in the preparation of the technical reports in support of this Draft EIR. The nature of their involvement is summarized below.

9.3.1 Kimley-Horn and Associates, Inc.

The following individual was involved in the preparation of the *Preliminary Hydrology and Hydraulics Study* (January 2020):

- Jason Marechal, PE, LEED AP, Associate

The following individual was involved in the preparation of the *Water Quality Management Plan* (August 2019):

- Brian Gillis, PE, Principal Engineer

9.3.2 Roux Associates, Inc.

The following individuals were involved in the preparation of the *Phase I Environmental Site Assessment and Phase II Limited Soil Investigation* (June 2019):

- Mark A. Edwards, GIT, Staff Geologist
- Mauricio H. Escobar, Principal Geologist

9.3.3 Natural History Museum of Los Angeles County

The following individual was involved in the preparation of the *Paleontological Resources Records Check for the Proposed Cypress Mixed-Use Development Project,* LSA Project #SHO1901, in the City of Cypress, Orange County (December 2019):

- Samuel A. McLeod, Ph.D., Vertebrate Paleontology

9.3.4 NMG Geotechnical, Inc.

The following individuals were involved in the preparation of the *Geotechnical Due Diligence Study for Proposed Mixed-Use Development at NE Quadrant of Siboney Street and Katella Avenue, City of Cypress, California* (June 2019):

- Ted Miyake, RCE, Principal Engineer
- William Goodman, CEG, Principal Geologist

9.3.5 LSA

The following individuals were involved in the preparation of the *Traffic Impact Analysis* (December 2019):

- Ken Wilhelm, Principal
- Shiva Delparastaran, Transportation Engineer

9.4 SPECIFIC PLAN AMENDMENT

9.4.1 Kimley-Horn and Associates, Inc.

The following individual was involved in the preparation of the *Specific Plan Amendment* (January 2020):

- Margit Allen, AICP, Planning and Entitlement Practice Builder, Kimley-Horn and Associates, Inc.

9.5 PROJECT APPLICANT/DEVELOPER

9.5.1 Shea Properties

The project Applicant/Developer was consulted during the preparation of this Draft EIR:

- Kevin McCook, Vice President of Acquisitions and Development, Shea Properties

9.6 PERSONS CONSULTED

The following individuals were consulted during the preparation of this Draft EIR:

- Gabrieleno Band of Mission Indians – Kizh Nation
  - Andrew Salas, Chairman
- Rincon Band of Luiseño Indians
  - Deneen Pelton, Administrative Assistant

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