

New Restaurant at Ferry Landing

Second Addendum to the Final Environmental Impact Report for the Coronado Boatyard Plan Amendment: The Wharf Development Project

UPD #3356-EIR; SCH #88062222

Prepared for:



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3165 Pacific Highway
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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
1.1 PREVIOUS ENVIRONMENTAL REVIEW AND DEVELOPMENT	1
1.2 PREVIOUS AND EXISTING CONDITIONS.....	2
1.3 PROJECT DESCRIPTION	5
1.4 REGULATORY OVERVIEW	8
1.5 DETERMINATION	9
2.0 ENVIRONMENTAL CHECKLIST.....	14
I. AESTHETICS.....	15
II. AGRICULTURE AND FORESTRY RESOURCES	20
III. AIR QUALITY	22
IV. BIOLOGICAL RESOURCES	27
V. CULTURAL RESOURCES.....	30
VI. GEOLOGY AND SOILS.....	34
VII. HAZARDS AND HAZARDOUS MATERIALS	39
VIII. HYDROLOGY AND WATER QUALITY	43
IX. LAND USE AND PLANNING	47
X. MINERAL RESOURCES.....	49
XI. NOISE.....	51
XII. POPULATION AND HOUSING.....	57
XIII. PUBIC SERVICES.....	60
XIV. RECREATION	62
XV. TRANSPORTATION/TRAFFIC	64
XVI. UTILITIES AND SERVICE SYSTEMS	74
XVII. MANDATORY FINDINGS OF SIGNIFICANCE	77
3.0 REFERENCES AND LIST OF PREPARERS	80
3.1 REFERENCES	80
3.2 LIST OF PREPARERS	80

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

A	Mitigation, Monitoring, and Reporting Program
B	Geotechnical Report
C	Closure Letter - County of San Diego Department of Environmental Health
D	FHWA Roadway Construction Noise Model User's Guide
E	Traffic Impact Analysis

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Follows Page</u>
1	Regional Location.....	2
2	Project Vicinity.....	2
3	Project Site.....	4
4	Proposed Site Plan.....	6
5	Proposed Landscape Plan.....	6
6	Architectural Rendering (Daytime).....	6
7	Architectural Rendering (Nighttime).....	6
8	Building Elevations.....	6

LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1	Comparison of Existing Conditions.....	4
2	Comparison of Proposed Conditions.....	6
3	Existing Plus Project Intersection Operations.....	69
4	Existing Plus Project Weekday Street Segment Operations.....	69
5	Existing Plus Project Saturday Street Segment Operations.....	70
6	Existing Plus Project Parking Requirements.....	73

ACRONYMS AND ABBREVIATIONS

ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
BMP	best management practice
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Coronado
CMP	Congestion Management Plan
dBA	A-weighted decibel
District	San Diego Unified Port District
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
LOS	level of service
MRZ	Mineral Resource Zone
NASNI	Naval Air Station North Island
PMP	Port Master Plan
project	New Restaurant at Ferry Landing Project
PTWC	Pacific Tsunami Warning Center
PVC	polyvinyl chloride
RAQS	Regional Air Quality Strategy
SANDAG	San Diego Association of Governments
SDAPCD	San Diego Air Pollution Control District
SDIA	San Diego International Airport
Sf	square feet
SR-	State Route
UWMP	Urban Water Management Plan
Wharf Development	Coronado Boatyard Plan Amendment, The Wharf Development
WC/ATWC	West Coast/Alaska Tsunami Warning Center

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1.0 INTRODUCTION

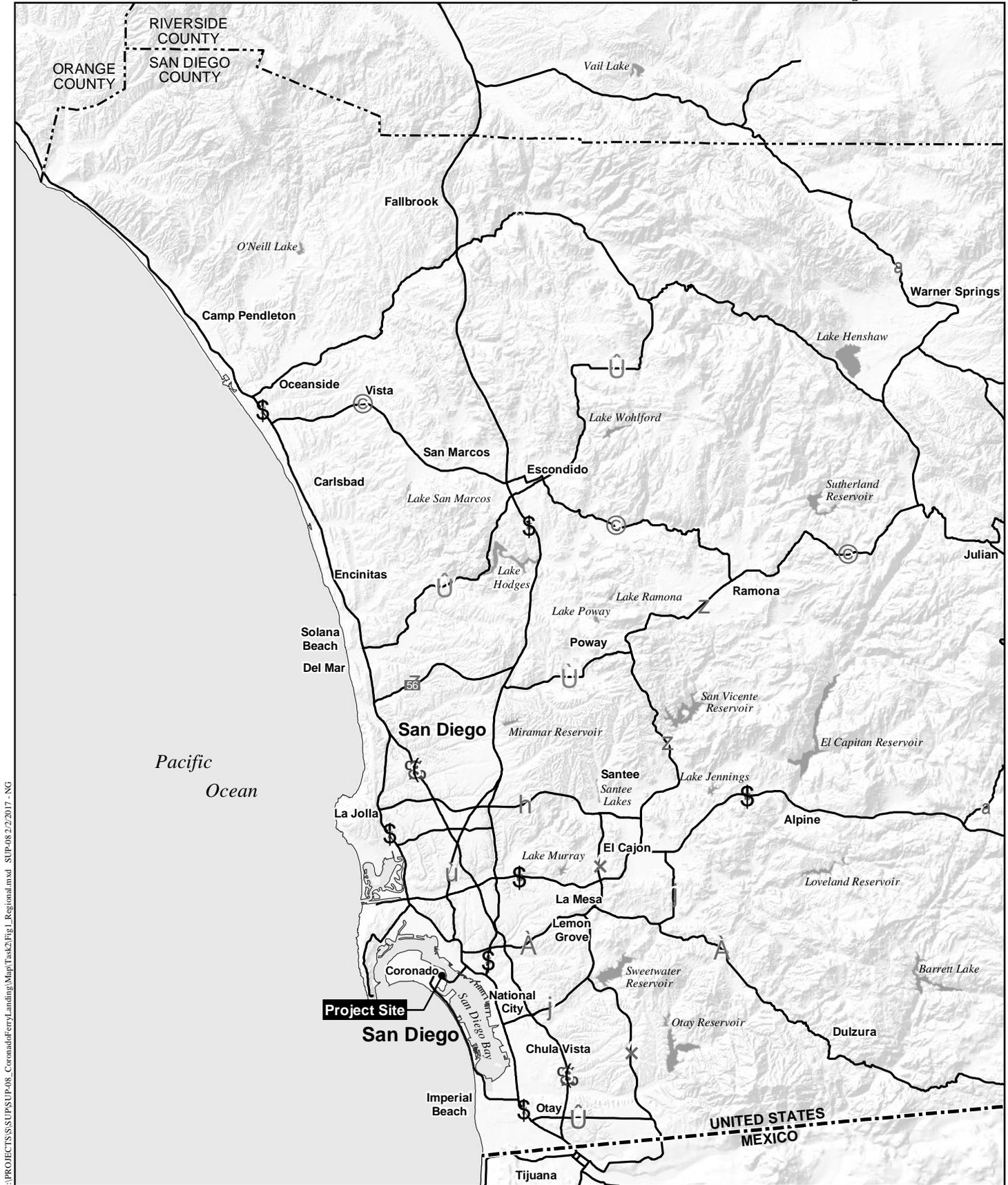
Ferry Landing Associates, LLC., as the project Applicant, has submitted an application for a bayside commercial development that would accommodate up to two restaurants (proposed project). The proposed project would implement a portion of the restaurant component of a previously approved commercial development project that was analyzed pursuant to the California Environmental Quality Act (CEQA) in the Final Environmental Impact Report (FEIR; UPD #3356-EIR; SCH #88062222) certified by the San Diego Unified Port District (District) for the Coronado Boatyard Plan Amendment – The Wharf Development Project (herein, Wharf Development). This Addendum clarifies modifications to the commercial development evaluated in the FEIR, as further described below. The District, as the lead agency under CEQA, has prepared this Addendum to the FEIR. This Addendum documents that the proposed project, known as the New Restaurant at Ferry Landing, would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and would meet the conditions in State CEQA Guidelines Section 15164, which allows compliance with CEQA with the approval of an addendum to a previous environmental document. The proposed project involves the implementation of a component of the overall development considered in the FEIR for the Wharf Development and would not exceed the type or amount of development anticipated in the FEIR.

This section includes a summary of the previous development approvals and environmental documentation associated with the proposed project site, descriptions of the existing site conditions and proposed project details, an overview of applicable State CEQA Guidelines Sections 15162 and 15164 that permit the preparation of an addendum to a previous environmental document, and a determination by the District that an addendum to the FEIR is appropriate for the proposed project. The District's determination in Section 1.0 of this Addendum is supported by the environmental checklist in Section 2.0, *Environmental Checklist*, of this Addendum, and references and a list of preparers of this document are provided in Section 3.0, *References and List of Preparers*.

1.1 PREVIOUS ENVIRONMENTAL REVIEW AND DEVELOPMENT

The FEIR for the Wharf Development was certified by the Board of Port Commissioners (Board) by Resolution No. 89-382 (District Clerk Document No. 24647) on December 19, 1989. The FEIR analyzed an amendment to the Port Master Plan (PMP) and the proposed development of approximately 3.9 acres of land (including the 0.5-acre proposed project site) and 2.8 acres of adjacent water in the City of Coronado (City). The FEIR included development of one and two-story buildings with a maximum height of 40 feet, including three full service restaurants of 23,000 square feet (sf), other food and beverage services shops of approximately 9,000 sf, and retail and management office space of 43,000 sf, for a total of approximately 75,000 sf. The FEIR also analyzed a below-grade parking structure of approximately 462 parking spaces as well as extensive perimeter landscape improvements. In addition, a 30-foot-wide apron wharf was planned for pedestrian and bicycle access along 600 feet of the San Diego Bay (Bay). The former marine railway area was retained to allow the Bay to flood the indent area. A sheltered harbor area consisting of two L-shaped docks was proposed to provide approximately 28 slips.

The FEIR included mitigation measures and specific conditions to reduce potentially significant impacts related to aesthetics, air quality, biological resources, cultural resources, hazards and hazardous materials, noise, and transportation and traffic. It should be noted that the FEIR did not number the FEIR mitigation measures or specific conditions; however, they have been numbered for clarity within this



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Regional Location

NEW RESTAURANT AT FERRY LANDING



Figure 1



Project Vicinity (Aerial Photograph)

NEW RESTAURANT AT FERRY LANDING

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document and in the Mitigation, Monitoring, and Reporting Program (MMRP). See Appendix A, *Mitigation, Monitoring, and Reporting Program*, for a complete list of mitigation measures and specific conditions included in the FEIR. The Board also adopted a statement of overriding considerations for significant and unavoidable impacts to aesthetics (Bay views) and transportation and traffic (parking).

The PMP amendment, included as part of the Wharf Development project, was certified by the California Coastal Commission (CCC) on June 15, 1990 and incorporated into the PMP. One of the mitigation measures related to hazardous materials was implemented through the preparation of a Site Assessment and Remediation Report, and a Closure Letter was issued for the project site in July 1997 (see Appendix C, *Closure Letter - County of San Diego Department of Environmental Health*). On November 18, 1997 a Coastal Development Permit (CDP) (CDP-97-3) was issued by the Board for the Ferry Landing Expansion (Resolution Number No. 97-248; Clerk Document No. 36851), which included development and operation of the Wharf Development project area. CDP-97-3 allowed for the construction of two restaurants with a total of approximately 18,500 sf, approximately 6,500 sf of offices, parking for approximately 255 vehicles, rip-rap and revetment shoreline protection, extension of the bicycle path along the waterfront, and landscaping improvements; however, only a portion of this development has been constructed as further described below. Since the CDP was issued in 1999, the first restaurant, Il Fornaio, was constructed and included an approximately 11,700 sf, one-story restaurant. Additionally, a 6,500-sf two-story office building and surface parking lot containing approximately 269 parking spaces was constructed instead of a subterranean parking lot with 462 parking spaces, which was previously analyzed in the FEIR.

In 1999, mitigation measures and specific conditions from the FEIR were implemented to reduce potentially significant operational impacts on noise and transportation and traffic. Potentially significant noise impacts due to vehicle traffic accessing the Wharf Development were mitigated by the relocation of the access/egress driveway about 50 feet further west and the construction of a six-foot-tall noise wall. Lastly, some traffic improvements were completed, including fair share contributions for signalization of First Street and Orange Avenue and the construction of a right-turn lane from eastbound First Street onto southbound A Street.

In 2008, an Addendum to the FEIR was prepared for the construction of a second restaurant (District Clerk Document No. 53309). The 2008 Addendum addressed plans to construct a second 11,500-square-foot restaurant, pavement approaches to the restaurant entry, and adjacent landscape improvements to the site. Since the construction of the second restaurant was not built within two years of CDP-97-3 permit issuance, a special provision of CDP-97-3, a CDP amendment (CDP-2008-82; Clerk Document No. 53487) was approved to allow for construction of the second restaurant. Due to market conditions, the second restaurant was not constructed, and the proposed second restaurant site (the project site) remains vacant.

In October 2015, a District Tenant Project Plan Application and Environmental Application was submitted by Ferry Landing Associates, LLC, which is further described as the proposed project in subsection 1.3 of this document, below.

1.2 PREVIOUS AND EXISTING CONDITIONS

The project site is located at 1355 First Street in the Coronado along the San Diego Bay within the jurisdiction of the District, as shown in Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*. The San Diego Bay is located to the north and northeast of the project site and two- and three-story residential

multi-family buildings are located to the south and include apartments and condominiums. Regional access to the proposed project area is provided by State Route (SR-) 75, Orange Avenue, and First Street, and local access to the site is available from a driveway near the intersection of First Street and "A" Avenue. As shown on Figure 3, *Project Site*, the project is part of the approved Coronado Boatyard Plan Amendment, The Wharf Development (Wharf Development). The project site is located within Planning District 6 of the certified PMP. The PMP land use designation for the project site is Commercial Recreation, which allows for hotels, restaurants, convention centers, recreational vehicle parks, specialty shopping, pleasure craft marinas, and sport fishing. Below is a description of the project site and surrounding areas as described in the FEIR, followed by a description of the existing and surrounding conditions as they currently exist in 2018. Table 1, *Comparison of Existing Conditions*, as shown below, provides a summary by environmental topic of the existing conditions in 1989 vs 2018.

The project site at the time the FEIR was certified in 1989 was part of a developed industrial boatyard that had existed since the 1940s. The boatyard was described in the FEIR as consisting of a two-story, 5,000 sf office building, shop buildings, marine ways and rail system, bare ground, asphalt, concrete, and crushed-rock paving. The boatyard included electricity, sewer, water, gas, and telephone infrastructure and facilities. Water area improvements were described as consisting of deteriorating docks and broken concrete and rip-rap bank revetments. Areas surrounding the boatyard in 1989 included two- and three-story multi-family residences and commercial and recreational development associated with the Coronado Ferry Landing Complex.

Currently, the project site is a 0.5-acre undeveloped and graded building pad composed of compact fill. The site is generally flat and ranges from about 10 to 13 feet above mean sea level. There are existing utilities at the project site, including infrastructure for stormwater, potable water, sewer, irrigation, and natural gas. An existing catch basin occurs in the northern portion of the site that connects to an outlet to the San Diego Bay. In addition, an existing approximately 18-inch and approximately 24-inch reinforced concrete pipe storm drains are also located in the southwestern part of the project site near the parking lot and drain beneath the site into the San Diego Bay. An existing approximately 4-inch water line made of polyvinyl chloride (PVC), an approximately 6-inch sewer line, and an approximately 2-inch PVC irrigation line occurs in the southern-central part of the site. A gas line is also present in the southeastern part of the site.

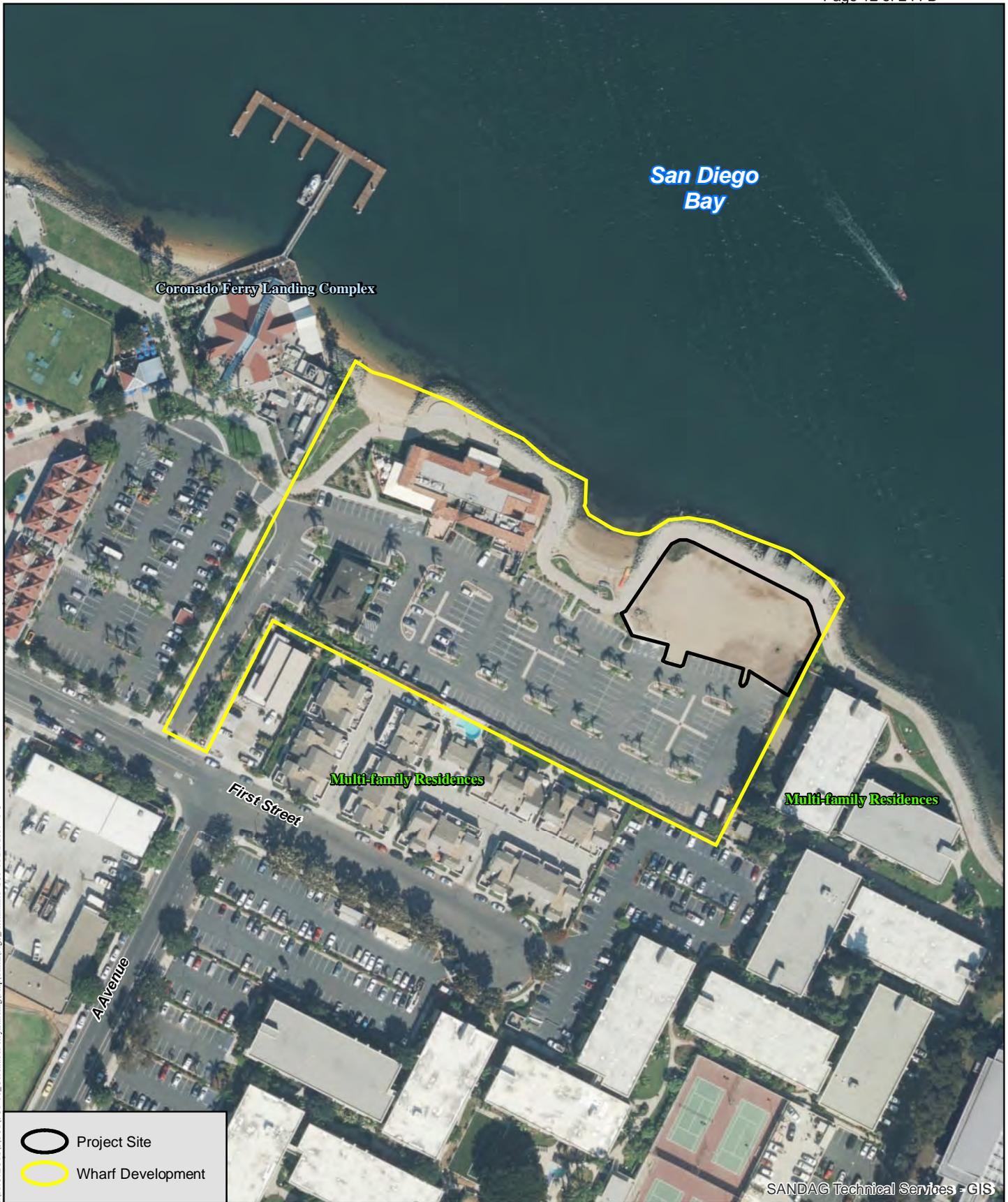
Further west of the Wharf Development is the Coronado Ferry Landing Complex, which includes a restaurant (Peohe's), a dock for the Coronado Ferry, a beach, grass areas, several smaller retail shops, and fast-food restaurants. A 15-foot-wide shoreline public walkway that is part of a regional pathway for pedestrians and cyclists around the San Diego Bay, known as the Bayshore Bikeway, occurs between the project site and the San Diego Bay. A series of three existing observation decks are located directly across the shoreline public walkway from the project and are situated above the riprap along the shoreline.

Table 1
COMPARISON OF EXISTING CONDITIONS¹

Environmental Issue Area²	FEIR Conditions (1989)	Existing Conditions (2018)	Change
Aesthetics	Developed industrial boatyard with a two-story, 5,000 sf office building, shop buildings, marine ways and rail system, bare ground, asphalt, concrete, and crushed-rock paving, surrounded by the San Diego Bay, two- and three-story multifamily residences, and the Coronado Ferry Landing Complex	Partially developed commercial site with 6,500 sf of office and 18,200 sf of commercial development, including a vacant commercial building pad, surrounded by the San Diego Bay, two- and three-story multifamily residences, and the Coronado Ferry Landing Complex	Developed industrial boatyard to partially developed commercial site with a vacant commercial building pad
Air Quality	Emissions and odors associated with operations at an industrial boatyard	Emissions and odors associated with operations at a commercial development	Industrial emissions and odors to commercial emissions and odors
Biological Resources	Developed landside with no sensitive plants or animals	Graded building pad with no sensitive plants or animals	Developed landside to graded building pad
Cultural Resources	Filled site with no prehistoric or paleontological resources. Potential for historic piers or wharf materials within fill	Filled site with no prehistoric or paleontological resources. Potential for historic piers or wharf materials within fill	None
Geology/Soils	Geologic conditions were determined favorable to support the proposed development with liquefaction concerns	Geologic conditions are considered favorable to support the proposed development with liquefaction concerns	None
Hazards and Hazardous Materials	Hazardous waste was used and stored at the boatyard and active hazardous sites were present	No hazardous waste used or stored at the site and no active documented hazardous sites are present	Remediation activities have removed previous hazardous waste
Land Use/Planning	Industrial land use designation	Commercial land use designation	Industrial to Commercial land use designation
Noise	Vehicular and waterborne traffic, aircraft, and business activities	Vehicular and waterborne traffic, aircraft, and business activities	None
Public Services	City of Coronado Fire and Police and Harbor Department Fire and Police	City of Coronado Fire and Police and Harbor Department Fire and Police	None
Transportation/Traffic	All study area intersections operated at acceptable levels of service, except for 3 rd and 4 th Streets at Orange Avenue	All study area intersections operate at acceptable levels of service, including 3 rd and 4 th Streets at Orange Avenue	Reduced congestion and improved intersection safety and operations
Utilities/Service Systems	Utilities included to serve previous boatyard	Utilities included to serve current and future commercial uses	Utilities modified to be suitable for commercial uses

1. Evidence for these summary statements is provided in Chapter 2, *Environmental Checklist*, of this Addendum.

2. Agriculture Resources, Hydrology and Water Quality, Mineral Resources, Population/Housing, and Recreation were concluded to have no impacts in the FEIR and are not included in this table.



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SANDAG Technical Services - GIS

Project Site

NEW RESTAURANT AT FERRY LANDING

1.3 PROJECT DESCRIPTION

The proposed project includes a bayside commercial development that would accommodate up to two restaurants within the District's jurisdiction, located within the City of Coronado (City). Specifically, the project includes the development of a single-story 7,500 sf commercial building with outdoor seating areas and landscaping improvements that would accommodate one or two restaurants. The project would operate under the existing 40-year lease with the District, which began in 1997 and will expire in 2037. There are no proposed modifications to the duration of the lease. Table 2, *Comparison of Proposed Conditions*, as shown below, provides an overview of how the individual components of the proposed project compare to the overall FEIR development.

Project Layout and Design

The proposed 7,500-square-foot building would accommodate a total of approximately 300 guests, including 190 indoor guests and 110 outdoor guests, and would be 23 feet in height. As shown on Figure 4, *Proposed Site Plan*, the proposed building would be situated in the middle of the project site toward the existing parking lot and would provide the option to accommodate up to two tenants within a single building. Two separate entrances are planned near the parking lot and two outdoor seating areas are proposed between the restaurant and the existing shoreline public walkway, including one pervious wooden patio and one impervious concrete patio. Two smaller outdoor seating areas are included along the western side of the building and in the southeastern portion of the project site. Bicycle racks would be installed at the southwestern portion of the site along the sidewalk and at the three existing concrete viewing decks over the San Diego Bay. A covered 224 sf utility and trash area is proposed at the southeastern side of the building and an underground 3,000-gallon grease interceptor tank is proposed in the southeastern corner of the site, adjacent to the proposed utility and trash area. Parking for the project would be provided within the existing 269 spaces in the parking lot located south and adjacent to the project. No changes to the current parking configuration are proposed with the exception of re-striping to include handicapped-accessible parking stalls.

**Table 2
COMPARISON OF PROPOSED CONDITIONS**

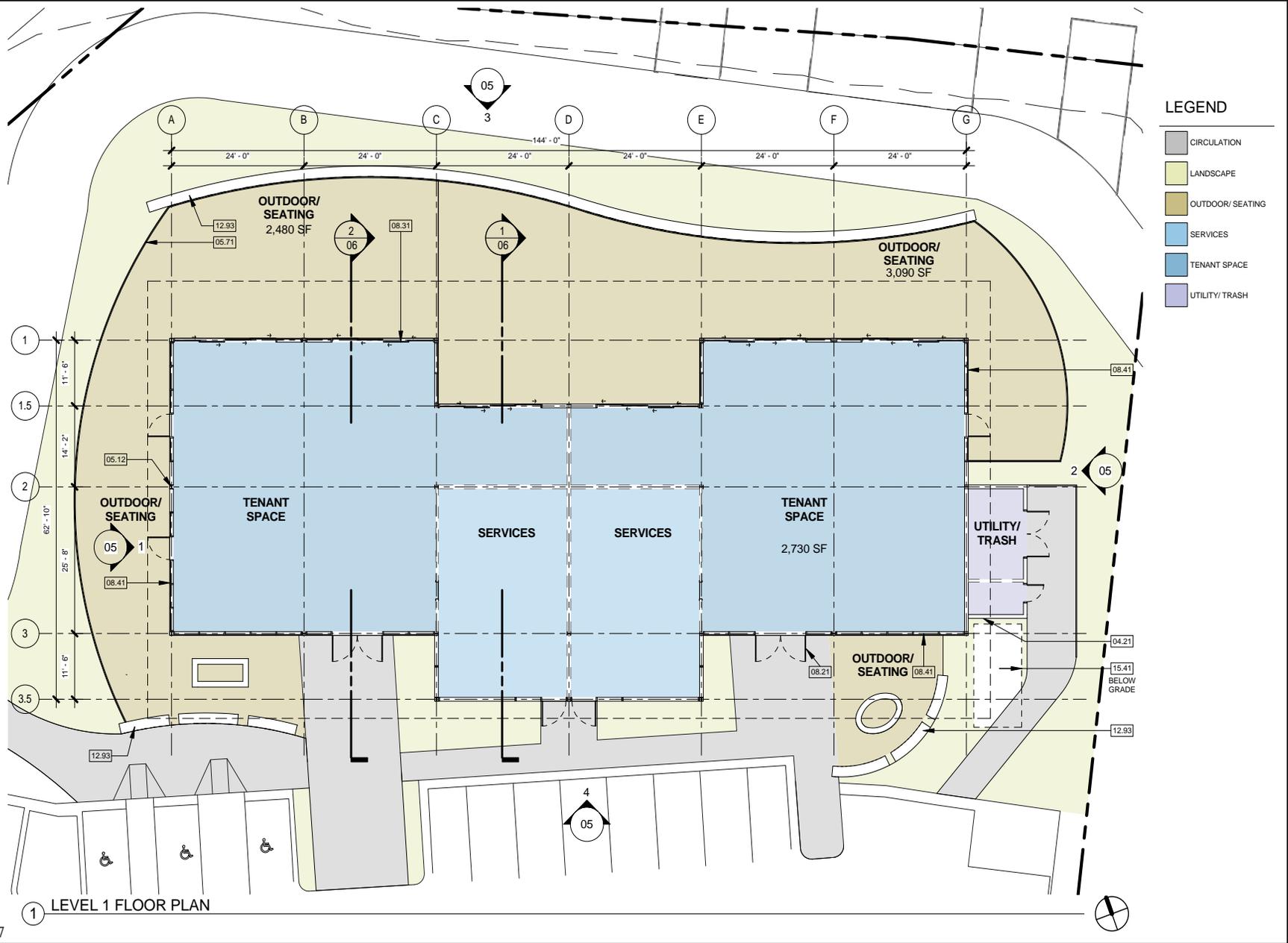
Topic	Approved Wharf Development (1989)	Existing Conditions (2018)	Proposed Project	Existing Plus Project	Change
<i>Project Components</i>					
Land Use	Office, Retail, Restaurant	Office, Restaurant	Restaurant	Office, Restaurant	Reduced
Total Development	75,000 sf	18,200 sf	7,500 sf	25,700 sf	Reduced
Restaurant Development	23,000 sf	11,700 sf	7,500 sf	19,200 sf	Reduced
Number of Restaurants	3	1	1 or 2	2 or 3	Reduced or Same
Building Height	2 stories/40'	2 stories/<40'	1 story/23'	2 stories/<40'	Reduced
<i>Construction</i>					
Time of Day	Day and Night	Not applicable	Day	Day	Reduced
Duration	14 months		9 months	9 months	Reduced
Activities	Remove industrial uses, grade commercial site and prepare underground parking		Clear and grub site, prepare foundation, and construct building	Clear and grub site, prepare foundation, and construct building	Reduced
Loudest Equipment (at 50 feet)	Backhoe (85 dBA)		Auger (84 dBA)	Auger (84 dBA)	Reduced
<i>Parking</i>					
Required	610 ¹	150 ²	100 ²	250 ²	Reduced
Included	462	269	0	269	Reduced

1. Parking requirement per FEIR, which required 3 spaces/1,000 sf for office, 3.8 spaces/1,000 sf for retail and 20 spaces/1,000 sf for restaurant. Source for parking requirement was the Urban Land Institute.

2. Parking requirement per FEIR specific condition SC-1, which requires 5 spaces/1,000 sf for retail and office, and 10 spaces/1,000 sf of restaurant.

The landscaping plan, which is shown on Figure 5, *Proposed Landscape Plan*, would incorporate a “beach dune” planting design theme to be consistent with the visual character of the surrounding area. Proposed plantings include grasses and low-water-use plants and palm trees. The palm trees would be located toward the parking lot and low-lying vegetation would be planted toward the San Diego Bay. Existing overhead lighting located along the 15-foot-wide shoreline public walkway would be removed and replaced with low-profile bollard lighting along both sides of the walkway. Three bio-filtration areas are proposed, including two at each entrance of the restaurant building and one between the outdoor seating area and the walkway. As discussed above, the existing utilities at the project, including infrastructure for stormwater, potable water, sewer, irrigation, and natural gas, would be utilized by the proposed project.

The design of the proposed building is depicted on Figure 6, *Architectural Rendering (Daytime)*, and Figure 7, *Architectural Rendering (Nighttime)*. As shown in the renderings, the architecture incorporates strong horizontal elements with a focus on windows and open areas that flow into outdoor patio areas. As shown on Figure 8, *Building Elevations*, materials would include recycled composite wood panel exterior walls with metal framing, operable windows to promote natural ventilation, and a reflective thermoplastic polyolefin roof to reduce heat island effect. A vegetated wall would be included on the



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Source: JWDA, 2017

Proposed Site Plan

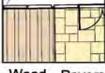
NEW RESTAURANT AT FERRY LANDING

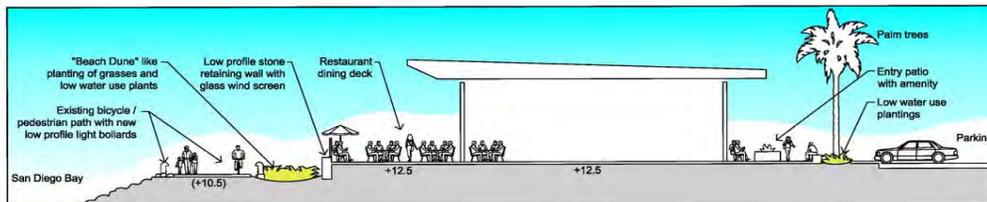
Figure 4



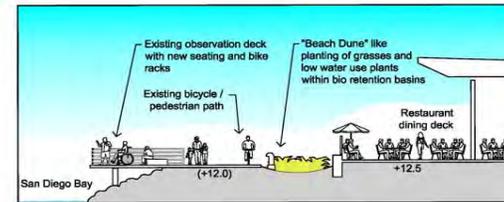
LANDSCAPE CONCEPT PLAN
1" = 10'-0"

LEGEND

-  EXISTING OBSERVATION DECK WITH SEATING
 -  EXISTING OBSERVATION DECK
 -  "BEACH DUNE" LIKE PLANTING OF GRASSES AND LOW WATER USE PLANTS
 -  PALM TREE
 -  GLASS WIND SCREEN
 -  BICYCLE RACK
 -  LOW PROFILE STONE WALL WITH GLASS WIND SCREEN
 -  RESTAURANT OUTDOOR SEATING WITH AMENITIES
 -  LOW PROFILE PATHWAY BOLLARD LIGHTING
 -  DECORATIVE PAVING
- Wood Pavers Decking



SECTION A-A
LANDSCAPE SECTIONS
N.T.S.



SECTION B-B

PARTERRE
SITE PLANNING
URBAN DESIGN
LANDSCAPE ARCHITECTURE
1221 HAYES AVENUE
SAN DIEGO, CALIFORNIA 92103

Fig.5_LandscapePlan.mxd - SUP-08 2/2/2017 - NG

Source: JWDA, 2017

Proposed Landscape Plan

NEW RESTAURANT AT FERRY LANDING



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Source: JWDA, 2017

Architectural Rendering (Daytime)

NEW RESTAURANT AT FERRY LANDING

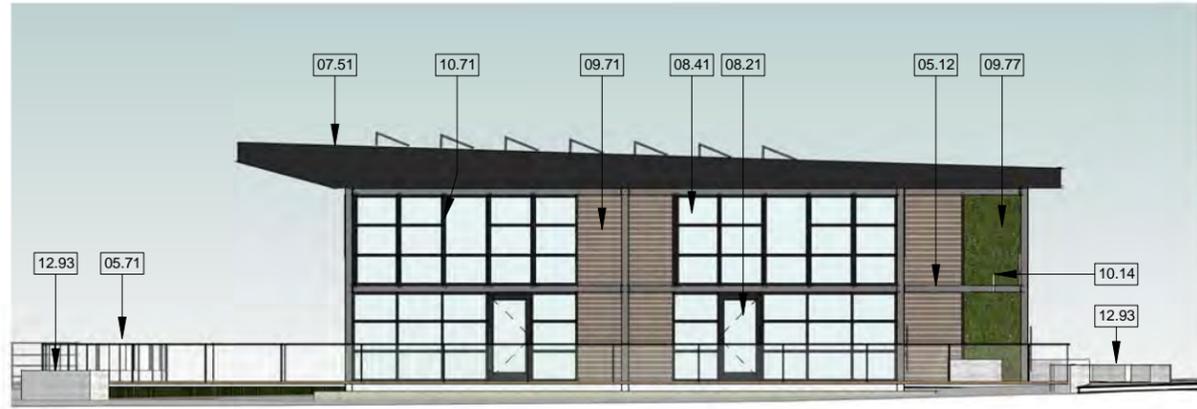


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Source: JWDA, 2017

Architectural Rendering (Nighttime)

NEW RESTAURANT AT FERRY LANDING



1 BUILDING ELEVATION - WEST



2 BUILDING ELEVATION - EAST



3 BUILDING ELEVATION - NORTH



4 BUILDING ELEVATION - SOUTH

KEY NOTES - 01 CONCEPT DESIGN	
04.21	CONCRETE MASONRY UNITS
05.12	METAL FRAMING - PER STRUCTURAL
05.71	GLASS & METAL RAILING
07.51	REFLECTIVE TPO ROOFING OVER ROOF ASSEMBLY
08.21	DOOR PER SCHEDULE
08.31	SPECIALTY DOOR - SLIDING/ RETRACTABLE
08.41	STOREFRONT SYSTEM
08.51	OPERABLE WINDOW
09.71	COMPOSITE WOOD WALL PANELS
09.77	VEGETATED WALL SYSTEM OVER EXTERIOR WALL ASSEMBLY
10.14	DIMENSIONAL LETTERS SIGNAGE
10.71	EXTERIOR SUN CONTROL DEVICES
12.93	SITE IMPROVEMENTS - PER LANDSCAPE

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Source: JWDA, 2017

Building Elevations

NEW RESTAURANT AT FERRY LANDING

southern façade, toward the center of the building. Glass wind screens are proposed around the outdoor patio areas, including a low-profile stone wall with a glass screen between the restaurant building and the shoreline public walkway. The utility and trash area on the southeastern side of the building would be constructed of concrete and metal framing. Solar panels are proposed on the roof, along with four heating, ventilation, and air conditioning units and four tankless natural gas water heaters. All mechanical equipment would be enclosed within a recessed well and would not be visible from the ground. Low-flow and/or waterless fixtures would be installed throughout the building.

Construction

Construction of the project is expected to occur over nine months, anticipated to begin in 2018, and would involve an average of approximately 100 construction round trips per day, with a maximum of up to approximately 180 round trips in a single day. Construction would include three phases: (1) preliminary earthwork; (2) foundation work; and (3) building construction and exterior site work. No nighttime construction is proposed.

- Phase 1 - Preliminary earthwork is anticipated to occur over an approximately one-month period and would involve general clearing and grubbing of the site using small earth-moving equipment. Due to the existing flat topography of the site, mass grading of the site is not anticipated.
- Phase 2 - Foundation work is anticipated to be conducted over an approximately one-month period and would include construction of the pad and continuous foundations. Concrete would be placed using a boom pump and would be delivered to the site via self-contained concrete mixing transport trucks. Pre-drilled (cast-in-place) foundation piles would be installed with the use of an auger to support the foundations and would include approximately 40 individual foundation piles.
- Phase 3 - Building construction and exterior site work would occur over an approximately seven-month period and would involve the installation of the structure using large steel I-beams, open web trusses, and cold-formed metal stud framing. Equipment for this phase would include rubber-tired hydraulic cranes and man-lifts. Exterior site work during the final phase of construction would include landscaping, decking, and sidewalk installation.

Operation

Project operations would involve full-service indoor and outdoor dining activities, similar to other restaurant activities in the immediate vicinity, such as Il Fornaio. These activities include food and drink preparation for buffets or catered meals and traditional dining, seven days a week and year-round. Operations are anticipated to occur between the hours of 7:00 a.m. and 11:00 p.m., and the majority of customers are expected to patronize the restaurant in the evenings (e.g., after 4:00 p.m.). No changes to the existing lease are included, and the tenant's existing lease would remain in place until 2037. The proposed project would require issuance of an amendment to CDP-97-3, pursuant to Section 14.d of the District's CDP Regulations.

Project Reviews and Approvals

The District is the lead agency under CEQA and responsible for approval of the proposed project. It is anticipated that the following approvals would be required:

- Concept Approval
- FEIR Addendum
- Coastal Development Permit Amendment
- Real Estate Agreements

1.4 REGULATORY OVERVIEW

A subsequent EIR is not required provided that none of the conditions set forth in State CEQA Guidelines Sections 15162(a) are met. Subsection 1.5, *Determination*, below provides a discussion for each of the requirements listed in State CEQA Guidelines Section 15162(a) and how the proposed project would not meet any of the conditions that require preparation of a subsequent EIR. Moreover, Subsection 1.5, *Determination*, provides a discussion for how implementation of the proposed project would meet the conditions set forth in State CEQA Guidelines Section 15164 that must be met to prepare an addendum to a previously certified EIR.

Section 15162(a) of the State CEQA Guidelines states that no further environmental review is required for a project for which an EIR has been previously prepared, provided that none of the following conditions are present:

- 1) Substantial changes are proposed in the project that will require major revisions of the previous EIR because of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- 2) Substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- 3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable due diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following: (a) the proposed project will have one or more significant impacts not discussed in the previous EIR; (b) that significant effects in the FEIR will be more severe; (c) mitigation measures or alternatives previously found to be infeasible would substantially reduce one or more significant effect of the project; or (d) mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15164 of the State CEQA Guidelines includes additional guidance for preparing an addendum:

- a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
- b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.
- c) An addendum need not be circulated for public review but can be included in or attached to the final EIR.
- d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project.
- e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in the addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

1.5 DETERMINATION

Based on the environmental analysis included in Section 2.0 of this Addendum, the District concludes that an addendum to the FEIR is appropriate for the proposed project. The following discussion includes a response to each of the criteria identified in Sections 15162(a) and 15164 of the State CEQA Guidelines in support of this determination.

State CEQA Guidelines Section 15162(a) states that when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

- a) Substantial changes are proposed in the project which will require major revisions of the previous EIR due to new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

Discussion: As discussed in Section 2.0 of this Addendum, the proposed project would not include changes which will require major revisions of the previous FEIR due to new or substantially more severe impacts than identified in the FEIR. Changes to the proposed project when compared to the Wharf Development evaluated in the FEIR include reduced development and the installation of 40 cast-in-place piles to support the proposed building foundation (which was not identified in the FEIR). Specifically, the proposed project, when considered with the rest of the Wharf Development analyzed in the FEIR, would result in the following reductions (also see Table 2): (1) overall development (23,000 sf with the proposed project plus existing conditions versus 75,000 sf in the FEIR); (2) restaurant development (19,200 sf with the proposed project plus existing conditions versus 25,700 sf in the FEIR); and (3) building height (a one story building at 23 feet in height with the proposed project versus two story buildings up to 40 feet in height in the FEIR). The FEIR also described proposed in-water work in San Diego Bay, nighttime construction, and an underground parking garage, none of which is proposed. Due to these reductions in development, there would

also be a related reduction in construction equipment, construction duration, vehicle trips during construction and operations, energy use, and excavations, and project-related impacts would generally be reduced. As a result, the proposed project involves a similar type of development anticipated in the Wharf Development FEIR (i.e., restaurant development); however, the amount of development associated with the proposed project would be much less than the development analyzed in the FEIR and the changes to the project, including the addition of cast-in-place piles, would not require major revisions to the FEIR, nor would it result in a substantial increase in the severity of previously identified significant effects on aesthetics (Bay views) or transportation/traffic (parking).

- b) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

Discussion: Changes with respect to the circumstances from 1989 to today are discussed in greater detail throughout Section 2.0 of this Addendum. Related to physical conditions, the site has changed from a developed industrial boatyard to a vacant graded commercial site with appropriate infrastructure (utilities, storm drain, and a parking lot) to serve future commercial development, and the site was cleaned of hazardous materials. Traffic counts were also taken in 2017 and compared to the existing traffic conditions presented in the FEIR, which determined that there is less traffic congestion on roadways in Coronado, partly due to the intersection improvements and fair-share traffic contributions completed per mitigation measures in the FEIR (see Appendix A for a list of all FEIR mitigation measures and which have been completed to date). In addition, construction equipment, motor vehicles, and mechanical equipment have been subject to increasingly more stringent emissions standards and are generally cleaner and quieter than they were in 1989. Lastly, land uses and development surrounding the proposed project site are generally similar to conditions in 1989 and include the adjacent multi-family residential developments near the proposed project. Because of the improved or similar circumstances, the proposed project would not result in new significant environmental effects that were not included in the FEIR nor would it result in a substantial increase in the severity of previously identified significant effects.

- c) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was adopted, shows any of the following:

- A. The project will have one or more significant effects not discussed in the previous EIR.

Discussion: As discussed in Section 2.0 of this Addendum, there is no new information of substantial importance that indicates that the proposed project would have one or more significant effects not discussed in the FEIR.

- B. Significant effects previously examined will be substantially more severe than shown in the previous EIR.

Discussion: Significant effects identified in the FEIR included unavoidable impacts to aesthetics due to obstruction of current full or partial Bay views from private condominiums, and to transportation and traffic due to a shortfall of parking spaces. As discussed in Section 2.0 of this

Addendum, the severity of the impacts associated with the proposed project would be less than those associated with the effects presented in the FEIR, and there is no change in circumstances or new information that shows substantially more severe impacts. Specifically, the proposed project would involve a single-story building that would be 17 feet lower than the height of development anticipated in the FEIR and would not increase the significant and unavoidable aesthetics impact on Bay views. Because the proposed project would involve less development than analyzed in the FEIR, the existing 269-space parking lot would accommodate the parking demand for the existing office and restaurant development plus the proposed project, which would cumulatively demand 250 spaces per specific condition SC-1 of the FEIR, which is more strict than the District's Tidelands Parking Guidelines, and the proposed project would eliminate the significant and unavoidable parking impact in the FEIR. A detailed account of consistency with the District's Tidelands Parking Guidelines is provided in subsection XIV of Section 2.0 of this Addendum. For impacts in the FEIR that were concluded to be less than significant with mitigation measures, applicable measures would continue to apply to the proposed project and are detailed in Appendix A of this document. These impacts would similarly be reduced to less than significant with mitigation measures.

- C. Mitigation measures or alternatives previously found to not be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative.

Discussion: Significant and unavoidable effects identified in the FEIR were limited to aesthetics (Bay views) and transportation and traffic (parking). None of the mitigation measures in the FEIR were identified as infeasible and all mitigation measures from the FEIR would apply to the proposed project unless the measure has already been implemented or is no longer needed to reduce a potentially significant environmental impact as identified in the FEIR. Appendix A of this document includes a complete list of mitigation measures and specific conditions from the FEIR and identifies if they have been completed and if they would apply to the proposed project.

The alternatives analysis in the FEIR included four alternatives, including the No Project Alternative, the Bayside Pedestrian/Bicycle Path Extension Alternative, the Reduced Density Alternative, and the Access/Egress Design Alternative (Scheme A). The No Project Alternative included site improvements to the boatyard that previously existed at the proposed project site. The Bayside Pedestrian/Bicycle Path Extension Alternative considered a 400-foot long and 15-foot wide extension of an existing promenade connecting the Wharf Development to the Coronado Tidelands Park. The Reduced Density Alternative included a revised project with up to 50,000 sf of development, including 30,000 sf of restaurant and 20,000 sf of retail. The Access/Egress Design Alternative (Scheme A) included a two-lane entry and one-lane exit driveway to First Street, located opposite from the intersection with A Avenue.

While the No Project Alternative would avoid the significant and unavoidable parking impact, impacts related to aesthetics were characterized in the FEIR as reduced but not eliminated under this alternative. Adoption of this alternative would substantially reduce the significant parking impact identified in the FEIR; however, this alternative is not feasible under existing conditions because the previous boatyard has been replaced by commercial development.

The Bayside Pedestrian/Bicycle Path Extension Alternative considered connecting the Wharf Development project area to the Coronado Tidelands Park. The FEIR did not identify any

reductions to the significant aesthetics (Bay views) or transportation and traffic (parking) impacts related to the Bayside Pedestrian/Bicycle Path Extension Alternative. As such, adoption of this alternative would not substantially reduce any significant effects identified in the FEIR and its adoption is not further considered in this Addendum. Furthermore, a pedestrian/bicycle connection currently exists between the proposed project and the Coronado Tideland Park.

The FEIR identified a reduction (but not elimination) of the significant and unavoidable aesthetics impact and avoidance of the significant and unavoidable parking impact under the Reduced Density Alternative (including 30,000 sf of restaurant and 20,000 sf of retail). The proposed project, when considered with existing development within the Wharf Development project area, would include 19,200 sf of restaurant space, 6,300 sf of office, and no retail development, which is less development than considered in the Reduced Density Alternative. As such, the significant and unavoidable aesthetics and parking impacts would be further reduced under the proposed project when compared to this alternative. While this alternative would avoid the significant and unavoidable parking impact of the Wharf Development, the proposed project would involve less development and would provide adequate parking per specific condition SC-1, as further discussed in subsection XIV of Section 2.0 of this Addendum. As a result, this alternative is not necessary.

The Access/Egress Design Alternative (Scheme A) involved relocation of the entrance/exit to the Wharf Development approximately 50 feet west of A Avenue to reduce noise impacts from vehicles entering and exiting the Wharf Development project area. This alternative analysis resulted in the adoption of a mitigation measure for noise (see mitigation measure NOI-3 in Appendix A), which has been implemented. Because the relocation of the entrance/exit has been constructed, this alternative is not necessary.

In conclusion, none of the mitigation measures or alternatives in the FEIR determined not to be feasible would in fact be feasible. Furthermore, the proposed project includes less development than the Reduced Project Alternative and would similarly eliminate the significant and unavoidable parking impact identified in the FEIR. While the significant and unavoidable aesthetics impact would be reduced (but not eliminated) under the No Project Alternative and the Reduced Project Alternative, the proposed project would similarly reduce (but not eliminate) aesthetics impacts.

- D. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Discussion: The proposed project would avoid the significant and unavoidable parking impact because less development would occur than was considered in the FEIR and the proposed project would substantially reduce the significant and unavoidable aesthetics impact identified in the FEIR due to a reduction in building height. There are no other significant effects identified in the FEIR; therefore, no other mitigation measures or alternatives were considered.

State CEQA Guidelines Section 15164(a) states that the lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162(a) calling for the preparation of a subsequent EIR have occurred.

Discussion: This Addendum supports the conclusion that none of the conditions described in Section 15162(a) calling for the preparation of a subsequent EIR have occurred, as demonstrated above under items 1, 2, and 3a through 3b, above.

State CEQA Guidelines Section 15164(c) states that the decision-making body shall consider the addendum with the final EIR prior to making a decision on the project.

Discussion: This Addendum will be considered with the FEIR by the Port Board of Commissioners prior to making a decision on the project.

State CEQA Guidelines Section 15164(d) states that a brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162(a) should be included in an addendum to the EIR, the lead agency’s findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Discussion: This Addendum provides an explanation of the decision not prepare a subsequent EIR pursuant to Section 15162(a), which is summarized in Section 1.0 of this Addendum, and further detailed by environmental resource topic in Section 2.0 of this Addendum.

On the basis of this initial evaluation:

<input checked="" type="checkbox"/>	I find that the proposed project DOES NOT meet any of the conditions within State CEQA Guidelines 15162 requiring that a Subsequent EIR is necessary, and an ADDENDUM to the Final EIR will be prepared pursuant to State CEQA Guidelines Section 15164.
<input type="checkbox"/>	I find that the proposed project DOES meet the conditions within State CEQA Guidelines 15162 and that a SUPPLEMENTAL EIR to the Final EIR will be prepared to address minor additions or changes to make the previous EIR adequate.
<input type="checkbox"/>	I find that the proposed project DOES meet the conditions within State CEQA Guidelines 15162 and that a SUBSEQUENT EIR to the Final EIR will be prepared to address substantial additions or changes to make the previous EIR adequate.

Signature

Date

Printed Name:

For:

2.0 ENVIRONMENTAL CHECKLIST

- | | |
|---|---|
| 1. Project Title: | New Restaurant at Ferry Landing |
| 2. Lead Agency Name and Address: | San Diego Unified Port District
Development Services Department
3165 Pacific Highway
San Diego, CA 92101 |
| 3. Contact Person and Phone Number: | Dana Sclar, Senior Planner
San Diego Unified Port District
(619) 400-4765 |
| 4. Project Location: | 1355 First Street
Coronado, CA 92118 |
| 5. Project Sponsor's Name and Address: | George Palermo
Flagship Cruises and Events
P.O. Box 120751
San Diego, CA 92112 |
| 6. Port Master Plan Designation: | Commercial Recreation |
| 7. Zoning Designation: | Pursuant to Section 19 of the Port Act, zoning does not apply within the District's jurisdiction. See the Port Master Plan designation above. |
| 8. Description of Project: | See Chapter 2, <i>Project Description</i> |
| 9. Surrounding Land Uses and Setting: | North: San Diego Bay
South: Multi-Family Residences
East: San Diego Bay
West: Commercial |
| 10. Other Public Agencies Whose Approval is Required: | City of Coronado |

This Section 2.0 includes separate discussions for each of the 16 environmental topics considered in this Addendum. Each discussion begins with an overview of what was discussed and concluded in the FEIR, and identifies what, if any, impacts were concluded for that topic, followed by a summary of the changes in the project and changes in circumstances or new information of substantial importance as it relates to that topic. These details are then the focus of the rest of the environmental analysis, in accordance with State CEQA Guidelines Section 16162(a).

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
I. AESTHETICS Would the project:						
a) Have a substantial adverse effect on a scenic vista, including but not limited to the vista areas designated by the District in the Port Master Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of proposed project changes as they relate to aesthetics, and a summary of changes in circumstances or new information of substantial importance as it relates to aesthetics, followed by a discussion for each of the individual threshold questions I.a through I.d.

Summary of FEIR

The FEIR described the existing conditions in the Wharf Development project area as a developed industrial boatyard that was blighted, except for the administrative office building, and described portions of the site as occupied by old, dilapidated shop and storage building, machinery, and scrap metal. Views of San Diego Bay and downtown San Diego were described as highly visible across the site from the second and third stories of the two nearby multi-family developments south of the Wharf Development project area. The Wharf Development evaluated in the FEIR included one- and two-story commercial buildings of up to a total of 75,000 square feet (sf) with a maximum height of up to 40 feet.

The FEIR did not identify significant impacts related to scenic vistas or vista areas; however, the FEIR concluded that temporary visual impacts related to lighting during nighttime construction would be less than significant with mitigation and that permanent impacts related to obstruction of private Bay views

from the second and third floors of nearby multi-family residential developments would remain significant and unavoidable. The FEIR included mitigation measures AES-1, AES-2, AES-3, AES-4, and specific condition SC-7 to mitigate impacts to aesthetics, as further described and included below. Mitigation measures AES-1 and AES-2 and specific condition SC-7 would reduce aesthetics impacts to less than significant by requiring landscaping improvements, solid fences and a landscape buffer, below grade parking, a waterfront/nautical design theme, an apron wharf for public access to view of the Bay, and implementation of light spill restrictions. However, permanent impacts related to the obstruction of full or partial Bay views from multi-family residences were concluded to remain significant and unavoidable, despite the inclusion of mitigation measures AES-3 and AES-4, which discussed project redesign to preserve Bay views and offering public viewing opportunities of the San Diego Bay and skyline. All mitigation measures and specific conditions from the FEIR are included in Appendix A of this Addendum, and applicable mitigation measures and specific conditions related to aesthetics are included at the end of this section.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to aesthetics and visual quality, the proposed project includes a reduction in the overall development square footage and building height evaluated in the FEIR and would not include nighttime construction. Specifically, the project site would be developed with an approximately 7,500 sf restaurant building, and when combined with existing development, would total 25,700 sf, which is approximately one-third of the Wharf Development floor area evaluated in the FEIR (75,000 sf). Also, the proposed building would be 23 feet in height, which is 17 feet lower than the building height of 40 feet that was analyzed as part of the Wharf Development in the FEIR. No other changes to the proposed project that relate to aesthetics are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to aesthetics has occurred since the FEIR was certified. Specifically, the proposed project site is no longer a developed industrial boatyard but is instead a vacant graded commercial site. Most of the development identified in the FEIR has not yet been built, as the area currently includes approximately 18,200 sf of development, which is roughly one-quarter of the 75,000 sf of floor area analyzed as part of the Wharf Development in the FEIR. The proposed project site currently exists as a graded flat building pad, with an existing restaurant located to the west and an office to the southwest. No other change in circumstances or new information of substantial importance related to aesthetics was identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Have a substantial adverse effect on a scenic vista, including but not limited to the vista areas designated by the District in the Port Master Plan?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to scenic vistas. Due to the reduced square footage and building height, proposed project impacts on a scenic vista would be reduced compared to the impacts analyzed in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to scenic vistas. The area surrounding the proposed project site is no longer a developed industrial boatyard and is currently a partially developed commercial and office development; however, this change in existing conditions does not include changes or new designations of scenic vistas or any Port Master Plan (PMP)-designated vista areas.

The FEIR did not identify significant impacts related to scenic vistas and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to scenic vistas; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to scenic resources. Due to the reduced square footage and building height, proposed project impacts on scenic resources would be reduced compared to the impacts analyzed in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to scenic resources. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, the current development is not considered a scenic resource.

The FEIR did not identify significant impacts related to scenic resources and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to scenic vistas; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified significant and unavoidable effects related to visual character or quality of the site and its surroundings. Due to the reduced square footage and building height, proposed project impacts on views from the second and third stories of nearby multi-family residences would be reduced when compared to the Wharf Development analyzed in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the

severity of previously identified effects related to visual character or quality of the site and its surroundings. Though the area surrounding the proposed project site is no longer a developed industrial boatyard, the proposed restaurant building is consistent with the surrounding existing commercial development.

The FEIR identified significant and unavoidable impacts related to degrading the existing visual character and quality of the site and its surroundings due to obstruction of full and partial Bay views from private condominiums in the area, and identified mitigation measures AES-1, AES-3, and AES-4 to reduce potential impacts by requiring landscaping along the perimeter of the site, solid fences and a landscape buffer along the edges of the project, below grade parking, a waterfront/nautical theme, and making changes to the design of the project to reduce impacts to some private Bay views. The proposed project would be required to implement portions of mitigation measure AES-1, specifically the project Applicant would be required to provide extensive landscaping, solid fences and a landscape buffer along the edges of the project, and a waterfront/nautical theme. A component of mitigation measure AES-1, the provision of below grade parking, would not apply to the proposed project because an existing parking lot would serve the project and no additional parking is necessary. Due to the reduction in proposed development, including a reduction in developed area and building height, below grade parking is not necessary to reduce aesthetics impacts. The last part of mitigation measure AES-1, construction of the apron wharf, has been constructed and would not apply to the project. Mitigation measures AES-3 and AES-4, which require a redesign of the project with lower density and the provision of public views to the Bay, would be implemented by the project Applicant. As a result, the proposed project would result in reduced significant and unavoidable impacts identified in the FEIR related to degrading the existing visual character or quality of the site and its surroundings. Therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the creation of a new source of substantial light or glare which could adversely affect day or nighttime views in the area. Due to the change to construct the proposed project during daytime, no temporary increases in substantial light or glare during nighttime would occur during construction. Due to the reduced square footage and building height, proposed project impacts related to operational light and glare would be reduced when compared to the impacts of the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the creation of a new source of substantial light or glare. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, the proposed restaurant building is consistent with the surrounding existing commercial development, which includes some sources of light and glare.

The FEIR identified potentially significant impacts related to nighttime lighting from construction equipment and vehicles and operational lighting impacts related to passing and parked vehicles. These impacts would be reduced to less than significant with the incorporation of mitigation measure AES-2 and specific condition SC-7, which require that cowls be installed on light standards and that trees are included along the perimeter of the site to reduce night lighting and glare from vehicles. The proposed project would be required to implement mitigation measure AES-2 and specific condition SC-7 and would not result in any new or more severe significant impacts related to lighting and glare impacts; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

AES-1: The Wharf on San Diego Bay includes the following design features which mitigate impacts resulting from the visual intrusion of the project into a largely residential area: (1) extensive landscaping; (2) solid fences and landscape buffer along edges of the project; (3) below grade parking¹; (4) waterfront/nautical design theme; and (5) an apron wharf for public access to views of Bay.²

AES-2: The Applicant will use sodium vapor light bulbs during construction and shield direct night lighting away from homes. The proposed project design includes cowls on light standards to control off-site spillage of night lighting and sky glow. Trees will be used along the project perimeter to cut down the effects of night lighting and glare from passing and parked vehicles.

AES-3: None planned by the Applicant. The project could be redesigned to preserve some private Bay views. This would require a lower density development and positioning of buildings to allow view corridors. A lower density development with view corridors would only partially mitigate the impact to private adjacent residences.

AES-4: Project implementation, however, would provide a significant increase in opportunity for the public to view the bay and San Diego skyline. Public views to the bay would be provided from the piers, the bayside promenade and bicycle path, and the proposed bayside dining and commercial establishments.

There are no specific conditions from the FEIR that were identified to reduce impacts related to aesthetics.

¹ Item 3 from mitigation measure AES-1 does not apply because an existing surface parking lot adjacent to the project site includes a sufficient amount of parking spaces to serve the proposed project and the creation of parking is not part of the proposed project. For a discussion of parking requirements, see subsection XV. Transportation/Traffic, in Section 2.0 of this Addendum.

² Item 5 from mitigation measure AES-1 does not apply because an apron wharf for public access to views of San Diego Bay has been constructed at the Wharf Development site.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
II. AGRICULTURE AND FORESTRY RESOURCES						
Would the project:						
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of proposed project changes as they relate to agriculture and forestry resources, and a summary of changes in circumstances or new information of substantial importance as it relates to agriculture and forestry resources, followed by a combined discussion of the threshold questions II.a through II.e.

Summary of FEIR

When the FEIR was certified, the Wharf Development project area was an industrial boatyard and did not include any agricultural or forestry resources in the immediate or surrounding area. No temporary or permanent impacts on agricultural or forestry resources were identified in the FEIR and no mitigation measures were required.

Changes in Project

A summary of changes in the proposed project compared to the Wharf Development is provided in Table 2. There are no changes in the project that are relevant to agricultural and forestry resources.

Changes in Circumstances or New Information of Substantial Importance

No changes in circumstances or new information of substantial importance that are relevant to agricultural or forestry resources have occurred since the FEIR was certified because there have not been agricultural resources at the Wharf Development project area and there are not agricultural resources at the proposed project site currently.

Impact Analysis

Would the project:

- a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***
- b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?***
- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?***
- d. Result in the loss of forest land or conversion of forest land to non-forest use?***
- e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?***

The FEIR did not identify significant impacts related to agricultural or forestry resources and did not identify any mitigation measures or specific conditions. Because there are no changes in project circumstances or new information relevant to agricultural or forestry resources, the proposed project would not result in any new or more severe significant impacts related to the conversion of farmland, conflicts with zoning for agricultural or forestry uses, the loss of forest land, or other changes that could result in the conversion of farmland. Therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to agriculture and forestry resources.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
III. AIR QUALITY						
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:						
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to air quality, and a summary of changes in circumstances or new information of substantial importance as it relates to air quality, followed by a discussion for each of the individual threshold questions, with the exception of thresholds III.b. and III.c, which have been combined as they both address project impacts on air quality standards.

Summary of FEIR

The Wharf Development project area was described in the FEIR as a developed industrial boatyard and the predominant existing source of air pollutant emissions was attributed to motor vehicle traffic in Coronado. Other air pollution was identified related to ship and boat exhaust. The FEIR did not identify potentially significant impacts related to conflicts with air quality plans, the violation of air quality standards, or cumulative increases in criteria pollutants; however, fugitive dust impacts on sensitive receptors during construction, as well as impacts related to objectionable odors from restaurants were identified, in addition to long-term emissions resulting from energy use. Impacts on air quality were reduced to less than significant with the incorporation of mitigation measures AQ-1 through AQ-7 and specific conditions SC-5 and SC-6. All mitigation measures and specific conditions from the FEIR are included in Appendix A of this Addendum and applicable mitigation measures and specific conditions related to air quality are included at the end of this section.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to air quality, the proposed project includes a reduction in the overall development square footage and building height evaluated in the FEIR, as well as a reduction in construction equipment, vehicle trips during operation, and energy use. Specifically, the proposed project site would be developed with a 7,500 sf restaurant building, and when combined with existing development, would equal 25,700 sf, which is approximately one-third of the Wharf Development floor area evaluated in the FEIR (75,000 sf). Also, the foundation of the proposed restaurant building would include 40 individual cast-in-place piles, which were not identified in the FEIR. No other changes to the proposed project that relate to air quality are proposed.

Changes in Circumstances or New Information of Substantial Importance

Three changes in circumstances related to air quality have occurred since the FEIR was certified. The first change in circumstance is that the proposed project site is no longer a developed industrial boatyard that generates industrial air emissions but is instead a vacant graded commercial site. The second change in circumstance is that surrounding roadways include similar or less roadway congestion with vehicles than was observed during the preparation of the FEIR. See Section XV, Transportation/Traffic, of this Environmental Checklist for a discussion of existing traffic conditions compared to those in the FEIR. The third change in circumstance is that construction equipment, mechanical equipment, and vehicles have been subject to increasingly stringent air quality regulations since 1989 and generally produce less air emissions (USEPA 2016). Also, Title 24 of the California Building Code has since been updated to include energy efficiency measures in new construction, with which the proposed project would be required to comply.

While air quality regulations and plans have been adopted since the FEIR was certified in 1989, due to the reduction in the scope and size of the project, no new information of substantial importance related to air quality was identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

a. Conflict with or obstruct implementation of the applicable air quality plan?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to conflicts an air quality plan. While the proposed project would include the installation of 40 cast-in-place piles that were not analyzed in the FEIR, due to the reduced square footage, including the omission of an underground parking garage considered in the FEIR, vehicle trips and construction activities (i.e., excavation for below grade parking) associated with the proposed project would be reduced, and impacts related to conflicts with an air quality plan would also be reduced when compared to the impacts of the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to conflicts with an air quality plan. The change in circumstances from an industrial boatyard to a vacant graded commercial pad, the similar or reduced roadway congestion in the surrounding areas, and cleaner technology for construction equipment, mechanical equipment, and vehicles would not result in conflicts with an air quality plan because these changes will result in a decrease in pollutant emissions associated with the proposed project than were anticipated to occur in connection with the Wharf Development.

The FEIR did not identify significant impacts related to conflicts or obstruction of implementation of an air quality plan and did not identify mitigation measures to reduce potential impacts. The proposed project would not result in any new or more severe significant impacts related to air quality plan conflicts; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to violations of air quality standards. While the proposed project would include the installation of 40 cast-in-place piles that was not analyzed in the FEIR, due to the reduced square footage, the omission of below grade parking, and reduced vehicle trips associated with the proposed project, proposed project impacts on air quality would be reduced when compared to the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the

severity of previously identified effects related to air quality standards. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, this change in circumstances represents a cleaner condition as the previous industrial operations within the Wharf Development project area no longer exist and have been replaced by commercial and office operations. Similarly, cleaner technology including cleaner vehicles today would result in reduced air emissions compared to vehicles evaluated in the FEIR.

The FEIR identified significant impacts related to violations of air quality standards and included mitigation measures AQ-3 through AQ-5, which requires energy efficiency devices be installed, to reduce potential impacts to less than significant. The proposed project would be required to implement mitigation measures AQ-3 through AQ-5 and would not result in any new or more severe significant impacts related to air quality standards; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

d. Expose sensitive receptors to substantial pollutant concentrations?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to exposure of sensitive receptors to substantial pollutant concentrations. While the proposed project would include the installation of 40 cast-in-place piles that were not analyzed in the FEIR, due to the reduced square footage and vehicle trips associated with the proposed project size, as well as the omission of below grade parking, proposed project impacts on air quality would be reduced when compared to the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the exposure of sensitive receptors to substantial pollutant concentrations. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, this change in circumstances represents a cleaner condition as the previous industrial operations within the Wharf Development project area are not present and instead, existing commercial and office operations exist. Similarly, cleaner technology including cleaner vehicles today would result in reduced air emissions compared to vehicles evaluated in the FEIR.

The FEIR identified significant impacts related to the exposure of sensitive receptors to substantial dust concentrations during construction and included mitigation measures AQ-1 and AQ-2, as well as specific condition SC-5, which require fugitive dust controls to reduce potential impacts. The proposed project would be required to implement mitigation measures AQ-1 and AQ-2 and specific condition SC-5 and would not result in any new or more severe significant impacts related to impacts on sensitive receptors; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

e. Create objectionable odors affecting a substantial number of people?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to objectionable odors. Odors associated with the Wharf Development relate to the cooking and disposal of food and additional vehicles accessing the site. The proposed project would involve the same type of development with similar odors from cars and food preparation and disposal; however, the proposed project would be reduced in square footage, which would result in a reduction in the amount of food preparation and disposal, as well as a reduction in the number of vehicles that would access the site. As a result, the proposed project would involve less odors than what was analyzed in the FEIR. Therefore, proposed project impacts related to objectionable odors would be reduced when compared to the Wharf Development evaluated in the FEIR.

None of the listed changes in circumstances or new information of substantial importance identified above would require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the creation of objectionable odors.

The FEIR identified significant impacts related to the creation of objectionable odors and included mitigation measures AQ-6 and AQ-7 and specific condition SC-6 to reduce potential impacts. The proposed project would be required to implement mitigation measures AQ-6 and AQ-7 and specific condition SC-6 and would not result in any new or more severe significant impacts related to the creation of objectionable odors; therefore, would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

AQ-1: The Applicant will require the construction contractor to keep fugitive dust down by regular wetting of work areas.

AQ-2: To reduce short-term impacts from construction activities for the project, the Applicant will require the construction contractor to control fugitive dust by regular wetting of work areas.

AQ-3: To reduce natural gas and energy consumption, the Applicant will design structures for efficient energy use. Energy-saving devices will be installed as part of the proposed project.

AQ-4: Design the structures for efficient energy use to reduce natural gas and electrical consumption.

AQ-5: Install energy saving devices such as setback thermostats, solar lighting, and solar water heaters.

AQ-6: The lessee will require vendors to use and regularly maintain after-burners or carbon filters to reduce odorous emissions from food establishments.

AQ-7: Require vendors to use and regularly maintain afterburners or carbon filters to reduce odorous emission from food establishments

SC-5: That to minimize fugitive air emissions during construction, the Applicant will require the construction contractor to keep fugitive dust down by regular wetting of work areas.

SC-6: To minimize nuisance odors from restaurants, the lessee will require vendors to use and regularly maintain after-burners or carbon filters to reduce odorous emissions from food establishments.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
IV. BIOLOGICAL RESOURCES						
Would the project:						
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to biological resources, and a summary of changes in circumstances or new information of substantial importance as it relates to biological resources. The impact analysis below includes a combined discussion of the threshold questions IV.a through IV.e.

Summary of FEIR

The Wharf Development project area was described in the FEIR as a developed industrial boatyard with no known sensitive plant or animal species expected to inhabit the landside portion of the site. No terrestrial biological impacts were identified and no mitigation measures were required. The Wharf Development project also included construction of a marina, which was found to result in potentially significant impacts on eelgrass (BIO-1 and SC-3, respectively, see Appendix A for more information). Impacts on marine biological resources were reduced to less than significant with the incorporation of a mitigation measure and specific condition.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to biological resources, the proposed project would not involve any in-water work, such as constructing a marina. Therefore, there are no mitigation measures or specific conditions from the FEIR related to marine biological resources that apply to the proposed project because no in-water work is proposed. As such, no mitigation measures or specific conditions are included at the end of this section. No other changes to the proposed project that relate to biological resources are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to biological resources has occurred since the FEIR was certified. Specifically, the proposed project site is no longer a developed industrial boatyard and is instead a vacant graded commercial site. A HELIX biologist visited the site on March 28, 2017 to review the existing site conditions and to confirm that they have not substantially changed since the adoption of the FEIR. Prior to the March 2017 site visit, the California Natural Diversity Database (CNDDB) was

reviewed. Based on a review of the current CNDDDB list, it was estimated that no new special-status species had been added since the FEIR was certified. Based on the results of the site visit, vegetation observed within the site was non-native and included the following plants: wild radish (*Raphanus sativus*), cheeseweed (*Malva parviflora*), prickly sow-thistle (*Sonchus asper*), common sow-thistle (*Sonchus oleraceus*), Bermuda buttercup (*Oxalis pes-caprae*), black mustard (*Brassica nigra*), farmer's foxtail (*Hordeum murinum*), sweet clover (*Melilotus indicus*), red-stemmed filaree (*Erodium cicutarium*), riggut brome (*Bromus diandrus*), ice plant (*Carpobrotus edulis*), pigweed (*Chenopodium album*), century plant (*Agave americanus*), and Mexican fan palm (*Washingtonia robusta*). None of these observed plant species is identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the United States Fish and Wildlife Service. Also, none of the observed plant species onsite is considered riparian habitat or sensitive natural communities and therefore would not support sensitive animal species. No other change in circumstances or new information of substantial importance related to biological resources was identified during preparation of this Addendum to the EIR.

Impact Analysis

Would the project:

- a. ***Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***
- b. ***Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?***
- c. ***Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***
- d. ***Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***
- e. ***Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***
- f. ***Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?***

The changes to the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to biological resources because the proposed project does not involve in-water work and would not contribute to additional impacts to marine biological resources identified in the FEIR.

The change in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified impacts on marine biological resources. A CNDDDB search and site visit were conducted to confirm if the change from developed industrial boatyard to vacant graded commercial site was a substantial change that could result in new significant effects or a substantial

increase in the severity of previously identified effects related to biological resources. As discussed above, the results of the CNDDDB search and site visit by a biologist did not indicate that there was an increased potential for impacts to biological resources. Therefore, the change in circumstances is not substantial.

The FEIR identified significant impacts related to the creation of a marina that would result in impacts on eelgrass and included mitigation measure BIO-1 and specific condition SC-3 to reduce potential impacts. The proposed project would not be required to implement either because no in-water work is proposed. As a result, the proposed project would not result in any new or more severe significant impacts related to the creation of a marina and the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

While mitigation measure BIO-1 and specific condition SC-3 from the FEIR were included to reduce impacts related to in-water work; the proposed project does not involve in-water work and neither BIO-1 nor SC-3 would apply to the proposed project.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
V. CULTURAL RESOURCES						
Would the project:						
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to cultural resources, and a summary of changes in circumstances or new information of substantial importance as it relates to cultural resources, followed by an individual discussion of threshold V.a, which was identified as potentially significant in the FEIR. The responses for questions V.b through V.d have been combined as they all relate to ground disturbance and were concluded to result in less than significant impacts in the FEIR.

Summary of FEIR

The Wharf Development site was described in the FEIR as a commercial boatyard with flat topography created by the placement of fill from the San Diego Bay in the 1940s. Historically, the area was related to marine activities and included the loading and off-loading of freight and merchandise from ships until the 1940s, when the area was covered with dredged Bay fill materials. A rail spur existed at the Wharf Development site, which extended onto a wharf and pier at the foot of "A" Avenue and carried passengers along Orange Avenue to the Hotel del Coronado and Tent City. After that time, the site was used commercially as a boatyard and development in the surrounding area was minimal until the 1970s.

While no prehistoric cultural resources impacts were identified, the Wharf Development was concluded to result in potentially significant impacts on previously unidentified historical resources related to previous industrial and transportation improvements that were noted to exist at the site since the 1940s that could be discovered during project construction. Impacts on cultural resources were reduced to less than significant with the incorporation of mitigation measure CUL-1. All mitigation measures and specific conditions from the FEIR are included in Appendix A of this Addendum and applicable mitigation measures and specific conditions related to cultural resources are included at the end of this section.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to cultural resources, the proposed project includes a reduction in the proposed parking layout and building foundation construction. Specifically, the proposed project would utilize existing surface parking and would not involve the excavation of the site for an underground parking garage. Also, the foundation of the proposed restaurant building would include 40 individual cast-in-place piles, which were not identified in the FEIR. No other changes to the proposed project that relate to cultural resources are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to cultural resources has occurred since the FEIR was certified. Specifically, that the proposed project site is no longer a developed industrial boatyard but is instead a vacant graded commercial site. No new information of substantial importance related to cultural resources since the FEIR was certified was identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to causing a substantial adverse change in the significance of a historical resource. As noted above, unidentified historical resources related to previous industrial and transportation improvements at the site could be discovered during any earthwork at the site. The proposed project would not involve excavating the site to construct an underground parking garage but would install cast-in-place piles to support the proposed building foundation. The 40 cast-in-place piles would involve much less site disturbance compared to the amount of disturbance that would be necessary to construct an underground parking garage. Therefore, this change in the project would result in a reduced potential for impacts on historical resources than those analyzed in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to impacts on historical resources. Specifically, the change in circumstances from an industrial boatyard to a vacant graded commercial pad would not result in new significant or increased significant effects compared to the FEIR because much of the previous development has been removed and the potential for historical resources to exist at the project site is less when compared to the conditions at the time the FEIR was prepared. Furthermore, no historical structures or objects were known or noted to exist previously at the Wharf Development site.

The FEIR identified potentially significant impacts related to a substantial adverse change in the significance of a historical resource and identified mitigation measure CUL-1 to reduce potential impacts to less than significant by requiring that any historical resources encountered during construction would be afforded full protection until their importance can be assessed. The proposed project would be required to implement mitigation measure CUL-1 from the FEIR and would not result in any new or more severe significant impacts related to historical resources; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d. Disturb any human remains, including those interred outside of dedicated cemeteries?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to causing a substantial adverse change in the significance of an archaeological or paleontological resource, or human remains. The proposed project would not involve excavating the site

to construct an underground parking garage but would install cast-in-place piles to support the proposed building foundation. The 40 cast-in-place piles would involve much less site disturbance compared to the amount of disturbance that would be necessary to construct an underground parking garage. Therefore, this change in the project would result in a reduced potential for impacts on archaeological and paleontological resources, and human remains, than what was analyzed in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to impacts on archaeological and paleontological resources and human remains. The change in circumstances from an industrial boatyard to a vacant graded commercial pad would not result in new significant or increased significant effects compared to the FEIR because much of the previous development has been removed and the potential for these resources to exist at the project site are less when compared to the conditions at the time the FEIR was prepared.

The FEIR did not identify significant impacts related to archaeological or paleontological resources or human remains and no mitigation measures were included. The proposed project would not result in any new or more severe significant impacts related to archaeological or paleontological resources, as well as human remains; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Furthermore, should human remains be uncovered during construction for the proposed project, as specified by State Health and Safety Code Section 7050.5, no further disturbance would occur until the County Coroner has made the necessary findings as to the origin and disposition pursuant to Public Resources Code 5097.98. If such a discovery occurs, excavation or construction would halt in the area of the discovery, the area would be protected, and consultation and treatment would occur as prescribed by law. If the County Coroner recognizes the remains to be Native American, he or she would contact the Native American Heritage Commission, who would appoint the Most Likely Descendant. Additionally, if the bones are determined to be Native American, a plan would be developed regarding the treatment of human remains and associated burial objects, and the plan would be implemented under the direction of the Most Likely Descendant.

Applicable Mitigation Measures and Specific Conditions

CUL-1: Any previously unidentified historical resources discovered during project construction will be afforded full protection by the Applicant until qualified personnel can assess their importance.

There are no specific conditions from the FEIR identified to reduce impacts related to cultural and paleontological resources.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
VI. GEOLOGY AND SOILS						
Would the project:						
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:						
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to geology and soils, and a summary of changes in circumstances or new information of substantial importance as it relates to geology and soils, followed by a discussion for each of the above-listed thresholds, with the exception of thresholds VI.c and VI.d, which are combined as they both address safety conditions related to soils.

Summary of FEIR

The FEIR did not identify potentially significant impacts on geology and soils and concluded that the Wharf Development could be safely constructed given the implementation of design recommendations from the original geotechnical report prepared by Geocon. The FEIR included did not include mitigation measures or specific conditions as impacts were concluded to be less than significant.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to geology and soils, the proposed project would not involve the construction of an underground parking garage and would involve the use of 40 cast-in-place piles to support the proposed building foundation. No other changes to the proposed project that relate to geology and soils are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to geology and soils has occurred since the FEIR was adopted. Specifically, the project site has been filled with soils and prepared for future commercial development. No new information of substantial importance related to geology and soils was identified during the preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**
 - ii) Strong seismic ground shaking?**
 - iii) Seismic-related ground failure, including liquefaction?**
 - iv) Landslides?**

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the rupture of a known earthquake fault, ground shaking, ground failure, including liquefaction, or landslides. Because the proposed project includes the use of 40 cast-in-place piles and does not include the construction of an underground parking garage, impacts related to geologic impacts would be reduced when compared to the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to adverse geologic impacts. The area surrounding the proposed project site is no longer a developed industrial boatyard and currently exists as a graded commercial building pad. This change in circumstances does not suggest that adverse geologic impacts would occur under the proposed project because the proposed project site supports commercial development currently whereas the previous condition of the proposed project site included parts of a marina that would not have supported commercial development without further site preparation. In addition, the Wharf Development project and the proposed project will be constructed in compliance with current California Building Code requirements.

The FEIR did not identify significant impacts related to the risk of loss, injury, or death and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to geologic impacts; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

b. Result in substantial soil erosion or the loss of topsoil?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to substantial soil erosion or the loss of topsoil. Specifically, the use of 40 cast-in-place piles would reduce the potential for soil erosion or the loss of topsoil compared to the excavation required

for an underground parking garage because a substantially reduced amount of soil would be removed. Therefore, impacts would be reduced when compared to the Wharf Development evaluated in the FEIR. The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to soil erosion or the loss of topsoil. The proposed project site previously was a developed boatyard and the proposed project site currently exists as a graded commercial building pad; however, this change in circumstances does not suggest that substantial soil erosion or the loss of topsoil would occur under the proposed project as no grading or major site disturbance is proposed and the proposed project site is generally flat.

The FEIR did not identify significant impacts related to soil erosion or loss of topsoil, and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to soil erosion or loss of topsoil; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?***
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to unstable geology and expansive soils. Specifically, the use of 40 cast-in-place piles and the change to not include the construction of an underground parking garage would improve the stability of the proposed restaurant building, and impacts related to unstable geology or expansive soils would be similar when compared to the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to unstable geology or expansive soils. The proposed project site previously was a developed boatyard and the proposed project site currently exists as a graded commercial building pad; however, this change in circumstances does not suggest that unstable geology or expansive soils would occur under the proposed project as the proposed project site is generally flat and has been prepared for future commercial development.

The FEIR did not identify significant impacts related to unstable or expansive soils and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to geologic or expansive soil impacts; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Furthermore, a geotechnical report prepared by Geocon in 2016 (provided as Appendix B, *Geotechnical Report*) noted that the seismic design parameters in accordance with the 2013 California Building Code, as well as the use of cast-in-place foundation piles, would avoid impacts associated with liquefaction and lateral spreading. Additionally, the report indicated that no changes to geology and soils occurred since the FEIR was certified.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to adequate soils to support the use of septic tanks. Specifically, septic tanks or alternative waste water disposal systems were not included in the Wharf Development and would not be included for the proposed project.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to adequate soils to support the use of septic tanks. Specifically, the development pad on the project site has been backfilled and prepared for future construction and no other changes related to the condition of the soil have occurred since the certification of the FEIR.

The FEIR did not identify significant impacts related to soils incapable of supporting septic tanks or alternative waste water disposal and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to soils; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to geology and soils.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
VII. HAZARDS AND HAZARDOUS MATERIALS						
Would the project:						
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to hazards and hazardous materials, and a summary of changes in circumstances or new information of substantial importance as it relates to hazards and hazardous materials, followed by responses for the above-listed thresholds. Thresholds VII.a and VII.c through VII.h are combined as no potentially significant impacts were identified related to the routine use of hazardous materials, the emission of hazardous materials near a school, the potential to be located on a hazardous materials site, aircraft hazards (public and private), emergency response plans, or wildland fires in the FEIR.

Summary of FEIR

The FEIR identified potentially significant impacts on hazards and hazardous materials due to the observance of hazardous levels of arsenic, copper, mercury, and lead in soil on the project site that were identified during a preliminary site assessment. The FEIR concluded that excavation and removal of soils during construction would be required to prepare the Wharf Development site for development and that there was the potential for the introduction of hazardous waste to off-site land or water areas. To mitigate this potentially significant impact, the FEIR included mitigation measure HAZ-1 and specific condition SC-8 that would reduce temporary hazardous materials construction impacts to less than significant.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to hazards and hazardous materials, the proposed project would not involve the construction of an underground parking garage and would involve the use of 40 cast-in-place

piles to support the proposed building foundation. Other changes in the project related to hazards include the reduced height of the proposed project. No other changes to the proposed project that relate to hazards and hazardous materials are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to hazards and hazardous materials has occurred since the FEIR was adopted. Specifically, the former soils at the proposed project site have been removed and the site has been prepared for future commercial development. A case closure letter was provided from the County of San Diego Department of Environmental Health, confirming that a site investigation and remediation action has been satisfactorily completed and a permanent remedy has been accomplished (see Appendix C). No new information of substantial importance related to hazards and hazardous materials was identified during the preparation of this Addendum to the FEIR since the FEIR was certified.

Impact Analysis

Would the project:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***
- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***
- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?***
- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?***
- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***
- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the routine transport, use, or disposal of hazardous materials, including the emission or handling of hazardous materials within one-quarter mile of a school because omitting the construction of an underground parking garage and installing 40 cast-in-place piles do not involve actions that would involve more hazardous materials than what was estimated in the FEIR. Similarly, effects related to sites included on a list of hazardous materials sites or impacts related to the exposure of people or structures to wildland fires would not be further affected because the proposed project location is within the Wharf Development project area and the changes to the project do not involve additional areas that

were not evaluated in the FEIR. Effects related to projects within the vicinity of an airport or private airstrip would not be further affected by changes to the proposed project because the proposed project includes development that is lower in height than the development analyzed in the FEIR. Also, none of the proposed project changes involve modifications to site access and as such, the impairment of an emergency plan would not occur due to changes in the proposed project.

Also, the changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the thresholds listed above because the replacement of contaminated soils with non-contaminated soils has substantially reduced the severity of potential hazardous materials impacts relating to the previously existing conditions at the proposed project site.

The FEIR did not identify significant impacts related to routine transport, use, or disposal of hazardous materials, including the emission of hazardous materials within one-quarter mile of an existing or proposed school, and did not identify impacts related to sites included on a list of hazardous materials sites, hazards due to the Wharf Development's location within the vicinity of an airport or private airstrip, the impairment of an emergency plan, or the exposure of people or structures to wildland fires, and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to these hazardous materials issues; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the release of hazardous materials into the environment because omitting the construction of an underground parking garage and installing 40 cast-in-place piles would involve less hazardous materials than what was estimated in the FEIR. Also, because excavation would be much less under the proposed project due to the omission of the underground parking garage, the potential for the release of hazardous materials would also be reduced.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the release of hazardous materials into the environment. In fact, because soil remediation occurred during the initial development of the project site, which was confirmed with the receipt of a closure letter from the County of San Diego Department of Environmental Health, the change in circumstances would result in fewer contaminated soils than what was analyzed in the FEIR (Appendix C).

The FEIR identified a less than significant impact with the incorporation of mitigation measure HAZ-1 related to the release of hazardous materials into the environment associated with contaminated soils. The proposed project would not involve substantial site preparation or grading and because soil remediation per mitigation measure HAZ-1 has already occurred, the proposed project would not be required to implement mitigation measure HAZ-1 and would not result in any new or more severe

significant impacts related to the release of hazardous materials. Therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance

Applicable Mitigation Measures and Specific Conditions

Mitigation measures HAZ-1 and HAZ-2 and specific condition SC-8 from the FEIR were included to reduce impacts related to hazards by completing site remediation activities. Because the project site and surrounding areas have been remediated (see Appendix C), these measures would not apply to the proposed project.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
VIII. HYDROLOGY AND WATER QUALITY						
Would the project:						
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to hydrology and water quality, and a summary of changes in circumstances or new information of substantial importance as it relates to hydrology and water quality,

followed by responses for the above-listed thresholds. Thresholds VIII.a through VIII.j are combined as no potentially significant impacts were identified related to hydrology and water quality in the FEIR and no mitigation measures or other conditions were included in the FEIR to address hydrology or water quality impacts.

Summary of FEIR

The FEIR did not identify any potentially significant impacts on hydrology and water quality and the discussion of water quality impacts was limited to in-water work associated with the proposed wharf construction, pile driving, and dock construction in the FEIR. These potential impacts were deemed insignificant due to their temporary nature and the strong tidal currents in the area, which would rapidly disperse suspended sediments.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to hydrology and water, the proposed project would involve about one-third of the Wharf Development project area evaluated in the FEIR (75,000 sf) and would not involve in-water construction activities. No other changes to the proposed project that relate to hydrology and water quality are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to hydrology and water quality has occurred since the FEIR was certified. Specifically, that the proposed project site is no longer a developed industrial boatyard but is instead a vacant graded commercial site. No new information of substantial importance related to hydrology and water quality was identified during the preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Violate any water quality standards or waste discharge requirements?***
- b. 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)?***
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?***
- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?***
- e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***
- f. Otherwise substantially degrade water quality?***

- g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?***
- h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?***
- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?***
- j. Inundation by seiche, tsunami, or mudflow?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to hydrology or water quality. The proposed project involves a similar type of commercial development contemplated in the FEIR; however, the proposed project would be in the same location that was analyzed in the FEIR and issues related to flooding, seiche, tsunami, and mudflow would be generally the same under the proposed project as these issues are dependent on geography. The changes in the project as they relate to water quality, drainage, and runoff which are influenced by activities such as grading and creating impervious surfaces, would also be similar to those evaluated in FEIR because most of the Wharf Development project area involved impervious surfaces and most of the proposed project would involve impervious surfaces, too. Hydrology and water quality impacts would be similar compared to the Wharf Development evaluated in the FEIR. The listed change in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to impacts on hydrology and water quality because drainage infrastructure remains at the proposed project site (i.e., a catch basin and storm drains) that would result in similar conveyance of flows and runoff compared to the FEIR.

The FEIR identified less than significant impacts related to hydrology and water quality and did not include any mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to hydrology and water quality and the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to hydrology and water quality.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
IX. LAND USE AND PLANNING Would the project:						
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to land use and planning, and a summary of changes in circumstances or new information of substantial importance as it relates to land use and planning. The impact analysis below includes a combined discussion of threshold questions IX.a through IX.c.

Summary of FEIR

The Wharf Development project area was described in the FEIR was a developed industrial boatyard with a two-story office building, shop buildings, marine ways and rail system, asphalt, and concrete and crushed rock paving. Water areas were characterized by deteriorating docks and broken concrete rip-rap bank revetment. Existing landside operations included the storage and service of small buses for the owner’s transportation business. The previous existing use at the proposed project site was characterized as an alleged nuisance by many of the adjacent residents.

Development of the site was under the jurisdiction of the District and subject to the California Coastal Act, which is implemented by the District through the issuance of a Coastal Development Permit (CDP). The Wharf Development project included a proposed Commercial Recreation PMP land use designation that would be more compatible with the adjacent residential land uses. A consistency review with the PMP concluded that the Wharf Development project, as analyzed in the FEIR, would not conflict with

habitat conservation plans or other applicable land use plans were identified and no potentially significant impacts or mitigation measures were identified in the FEIR.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to land use and planning impacts, the proposed project would result in less development than the overall development analyzed in the FEIR. No other changes to the proposed project that relate to land use and planning are proposed and no change in the existing Commercial Recreation land use designation would be required.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to land use and planning has occurred since the FEIR was certified. The proposed project site is no longer a developed industrial boatyard but is instead a vacant graded commercial site. No new information of substantial importance related to land use and planning was identified during the preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Physically divide an established community?***
- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?***
- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to land use and planning. The proposed project site has been prepared for future development and does not involve a change in the existing land use designation or other actions that would conflict with an applicable land use or conservation plan.

The change in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to impacts on land use and planning because the site has been graded and prepared to accommodate future commercial development and would be consistent with the previously approved Wharf Development.

The FEIR identified less than significant impacts related to land use and planning and did not include mitigation measures to reduce potential impacts. The proposed project would not result in any new or more severe significant impacts related to land use and planning and the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

The proposed project site is located within Orange Avenue subarea of Planning District 6, Coronado Bayfront of the PMP. At the time the FEIR was certified in 1989, the Orange Avenue subarea was updated to include the project analyzed in the FEIR. The PMP allows for development including a major restaurant, recreational shopping, marine service complex, and limited waterside development including boat slips. It also requires that structures do not to exceed 40 feet in height. The PMP land use designation for the project site is Commercial Recreation. The proposed project would not result in a change in land use and would remain compatible with the existing Commercial Recreation land use designation in the PMP.

The project site also lies within the California Coastal Zone and would require an amendment to CDP-97-3 pursuant to the requirements of the California Coastal Act (Coastal Act) and the District CDP Regulations. On November 18, 1997, a CDP was issued to allow for construction of two restaurant buildings with a total of approximately 18,500 sf, approximately 6,500 sf of office space, parking for approximately 255 vehicles, rip-rap and revetment shoreline protection, extension of the bicycle path along the waterfront, and landscaping improvements at the project site (CDP-97-3). Since the proposed second restaurant was not constructed within specified two-year timeframe stated in CDP-97-3, and the proposed project would exceed the total sf when combined with construction of the first restaurant (Il Fornaio), a CDP amendment is required. Furthermore, the proposed project site is located within the SDIA Airport Land Use Compatibility Plan (ALUCP) but would not require Airport Land Use Committee (ALUC) review of the project because no increases in permitted height limits would occur and impacts related to light, glare, electromagnetic interference, dust, water, vapor, and smoke, thermal plumes, or bird attractants would be less than significant.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to land use and planning.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
X. MINERAL RESOURCES						
Would the project:						
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to mineral resources, and a summary of changes in circumstances or new information of substantial importance as it relates to mineral resources. The following impact analysis is in response to thresholds X.a and X.b and does not include separate discussions for each threshold because both thresholds are concerned with the loss of mineral resources, which do not exist at the site.

Summary of FEIR

The Wharf Development project area at the time the FEIR was certified was an industrial boatyard and did not include any mineral resources in the immediate or surrounding area. No temporary or permanent impacts on mineral resources were identified in the FEIR.

Changes in Project

A summary of changes to the proposed project compared to the Wharf Development is provided in Table 2. There are no changes to the proposed project that are relevant to mineral resources.

Changes in Circumstances or New Information of Substantial Importance

No changes in circumstances or new information of substantial importance that are relevant to mineral resources have occurred since the FEIR was certified because there have not been mineral resources at the Wharf Development project area and there continues to be a lack of mineral resources at the proposed project site.

Impact Analysis

Would the project:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**
- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

The FEIR did not identify significant impacts related to mineral resources and did not identify any mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to the loss of availability of a known mineral resource as the proposed project is located in the same geographic location as the Wharf Development project area; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to mineral resources.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or	
XI. NOISE						
Would the project:						
a) Expose persons to or generate noise levels in excess of standards established in the City of Coronado’s Noise Ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or	
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to noise, and a summary of changes in circumstances or new information of substantial importance as it relates to noise, followed by a discussion for the thresholds above. Thresholds XI.a and XI.c have been combined as they both evaluate operational noise impacts and threshold XI.e and XI.f have been combined as they both evaluate noise impacts from aircraft operations.

Summary of FEIR

The Wharf Development site was described in the FEIR as a commercial boatyard characterized by vehicular and waterborne traffic, overflying aircraft, and business activities. The nearest residence was identified approximately 30 feet from the Wharf Development site. Existing ambient noise measurements were taken at the nearby residential locations and indicated that peak daytime noise levels were about 62 A-weighted decibels (dBA) at the parking lot of the Wharf Development site as analyzed in the FEIR. The FEIR concluded that the Wharf Development could result in potentially

significant construction noise impacts related to the use of equipment, primarily related to the operation of a backhoe to construct the underground parking garage, as well as operational impacts associated with vehicle traffic, the operation of parking and boats, normal operations, and the pick-up of dumpsters and operation of trash compactors. No potentially significant ground-borne vibration impacts or conflicts with aircraft operations were identified in the FEIR.

For construction noise impacts, the FEIR does not discuss construction noise ordinance thresholds but considers a 10-dBA increase above existing ambient noise levels as the threshold for temporary increases in noise to be noticeable. Construction equipment evaluated in the FEIR included one front-end loader, one backhoe, one grader, and two dump trucks. Noise estimates based on this mix of construction equipment indicated that the loudest average noise levels would be about 85 dBA at 50 feet at the center of the Wharf Development and would be noticeable at the residences, located as close as 150 feet from the center of the Wharf Development site. The FEIR concluded that temporary noise impacts would exceed the 10-dBA threshold. Temporary impacts related to construction noise were reduced to less than significant with the incorporation of mitigation measures NOI-1 and NOI-2 and specific condition SC-4.

For operational noise impacts, the FEIR references the City of Coronado's (City) Noise Ordinance and associated community noise standards from 1980, which restricts one-hour average sound levels (dBA) in residential areas to 50 dBA during the daytime (7:00 a.m. to 7:00 p.m.), 45 dBA during the evening (7:00 p.m. to 10:00 p.m.), and 40 dBA during the nighttime (10 p.m. to 7:00 a.m.). The FEIR concluded that impacts from delivery and trash trucks, as well as nighttime noise levels related to ongoing commercial and restaurant operations (e.g., vehicles entering and exiting the parking lot), would be significant and mitigation would be required. Permanent noise impacts were reduced to less than significant with the incorporation of mitigation measures NOI-3 and NOI-4, which required relocation of the driveway to the Wharf Development site and arranging pickup of the trash during business hours, respectively. All mitigation measures and specific conditions from the FEIR are included in Appendix A of this Addendum and applicable mitigation measures and specific conditions related to noise are included at the end of this section.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to noise, the proposed project includes a reduction in the buildout of the development analyzed in the FEIR. For construction, the proposed project would not involve the construction of an underground parking garage or nighttime construction as analyzed in the FEIR. Also, the proposed project would include the use of auger cast-in-place piles to support the proposed building foundation, which were not discussed in the FEIR. No other changes to the proposed project that relate to noise are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to noise has occurred since the FEIR was certified. Specifically, the proposed project site is no longer a developed and operational industrial boatyard but is instead a vacant graded commercial site. No new information of substantial importance related to noise since the FEIR was certified was identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Expose persons to or generate noise levels in excess of standards established in the City of Coronado's Noise Ordinance?**
- c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

The operational changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects or a substantial permanent increase in ambient noise levels. The operational changes in the proposed project are not expected to result in greater impacts than those analyzed in the FEIR because reduction in development and associated visitors, vehicles, and trash service pickup would result in a commensurate reduction in noise. For example, the project would result in lower levels of mobile sources (such as visitor and service vehicles) as well as less intensive stationary sources (such as heating, ventilation, and air conditioning equipment) that would generate noise at the project site.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to impacts on noise in excess of the City of Coronado Noise Ordinance. Specifically, the change in circumstances of the proposed project site from an industrial boatyard to a vacant graded commercial pad would not result in new significant or increased significant effects compared to the FEIR because the previous noises associated with the Wharf Development project area have been removed.

The FEIR identified significant impacts related to operational noise impacts and included mitigation measures NOI-3 and NOI-4 to reduce potential impacts associated with noise from vehicles entering and exiting the site. The proposed project would result in similar operational noise impacts; however, the project would not be required to implement mitigation NOI-3, which involves the relocation of the access/egress driveway and the construction of two noise walls, as this measure was previously implemented. To mitigate potential operational noise impacts, the proposed project would be required to implement mitigation measure NOI-4, which requires the arrangement of pick-up of the dumpster between 8:00 a.m. and 5:00 p.m. and would not result in any new or more severe significant impacts related to the exposure of persons to or generation of noise levels in excess of standards established in the City of Coronado's Noise Ordinance; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

- b. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?**

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. None of the components of the FEIR or the proposed project involve excessive ground-borne vibration or excessive ground-borne noise levels, and impacts would be similar to the Wharf Development evaluated in the FEIR because no new sources of ground-borne vibration are

included in the proposed project, including the cast-in-place piles, which would not be driven but would be installed using an auger. For a discussion of excessive noise levels, including excessive ground-borne noise levels, see the discussion below in threshold d), in subsection XI of Section 2.0 of this Addendum.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. The area surrounding the project site is no longer a developed industrial boatyard and there is no generation of ground-borne vibration in the area or at the undeveloped project site.

The FEIR identified less than significant impacts related to the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels and no mitigation measures were included to reduce potential impacts. The proposed project would not result in any new or more severe significant impacts related to the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to temporary increases in ambient noise levels. Construction activities associated with the proposed project would generally involve fewer noise-related activities than what was analyzed in the FEIR because the project site has been graded and prepared for development. Some grubbing and minor grading would occur for the proposed project; however, most of the construction activities and related temporary noises would be related to preparing the building foundation and constructing the building. These activities would involve concrete trucks, an auger to install the cast-in-place piles, hydraulic cranes, and man-lifts, which produce similar noise levels as the construction equipment evaluated in the FEIR. The loudest equipment associated with the Wharf Development was reported in the FEIR to produce a noise of 85 dBA at 50 feet (see page IV-32 of the FEIR), while the loudest equipment associated with the proposed project (the auger) is estimated to produce a noise of 84 dBA at 50 feet (see Appendix D, *FHWA Roadway Construction Noise Model User's Guide*). As a result, construction equipment noise levels associated with the proposed project would be slightly reduced compared to the construction noise levels reported in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to substantial temporary increases in ambient noise levels. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, the multi-family residences near the proposed project have remain unchanged and there are no new sensitive receptors in the area that would be subjected to construction noise associated with the proposed project. As a result, the changes in circumstances would not result in a new significant effect or a substantial increase in temporary construction noise impacts.

The FEIR identified potentially significant impacts related to substantial periodic increases in ambient noise levels and included mitigation measures NOI-1 and NOI-2 and specific condition SC-4 to require the construction contractor to work between the hours of 7:00 a.m. and 7:00 p.m. on weekdays, keep construction equipment as far as possible from sensitive receptors, and to provide acoustic shielding around night-operating equipment to reduce impacts to less than significant. The proposed project would be required to implement mitigation measures NOI-1 and NOI-2 and specific condition SC-4, each of which are modified for the proposed project to require acoustic shielding around equipment regardless of the time of day (see Appendix A of this Addendum), and would not result in any new or more severe significant impacts related to substantial period increases in ambient noise levels; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

- e. Be located within an airport land use plan area, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?***
- f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?***

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to excessive noise levels associated with aircraft operations. Because the FEIR identified a restaurant at the proposed project site, and no changes to the location of the proposed project are requested, changes to the proposed project would not result in increased impacts from aircraft operations when compared to the Wharf Development evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to scenic resources. The area surrounding the proposed project site is no longer a developed industrial boatyard; however, this change in circumstances would not result in a new significant effect or a substantial increase in previously identified less-than-significant impacts.

The FEIR did not identify significant impacts related to aircraft operations and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts due to proximity to aircraft operations; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

NOI-1: The Applicant will require the construction contractor to: 1) restrict normal construction activities to the hours of 7 a.m. to 7 p.m. weekdays; 2) keep construction equipment as far as possible from sensitive receptors; and 3) provide acoustical shielding around night-operating construction equipment (10 p.m. to 7 a.m.).

NOI-2: To reduce short-term noise impacts during the construction phase of the project, the following measures will be implemented:

- a. Normal construction activities will be restricted to weekday daylight working hours (7:00 a.m. to 7:00 p.m.). During any emergency operation at nighttime, special measures, such as using less noisy equipment (based on manufacturer’s specifications and properly maintained) should be considered when possible to limit adverse noise impact on the residential areas.
- b. Construction equipment will be kept as far as possible from sensitive receptors; and
- c. Acoustic shielding (temporary walls and noise barriers) around ~~night operating (10:00 p.m. to 7:00 a.m.)~~ construction equipment will be used.

NOI-4: The lessee will arrange for a business hour (8 a.m. to 5 p.m.) pick-up of the dumpster.

SC-4: That to minimize short term noise impacts during construction, the Applicant will require the construction contractor to (1) restrict normal construction activities to the hours 7 a.m. to 7 p.m. weekdays; (2) keep construction equipment as far as possible from sensitive receptors; and (3) provide acoustical shielding around ~~night operating~~ construction equipment ~~(10 p.m. to 7 a.m.)~~.

To minimize noise levels to adjacent residents from normal operations of the development, the Applicant will relocate the access/egress driveway, as originally shown in Figure 2.3, about 50 feet to the west (not within A Avenue). A 6-foot high sound attenuation wall will be built along the fenceline of the condominium's western border. An 8-foot high sound attenuation wall will be constructed at the property line on the east side of the project site. The lessee will arrange for business hour (8 a.m. to 5 p.m.) pick-up of trash dumpsters.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
XII. POPULATION AND HOUSING						
Would the project:						
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to population and housing, and a summary of changes in circumstances or new information of substantial importance as it relates to population and housing, followed by a discussion for the thresholds above. The following impact analysis is in response to questions XII.a through XII.c and does not include separate discussions for each threshold because the Wharf Development project area at the time the FEIR was an industrial boatyard and did not include any housing.

Summary of FEIR

The Wharf Development project area at the time the FEIR was certified was an industrial boatyard and no temporary or permanent impacts on population and housing were identified in the FEIR.

Changes in Project

A summary of changes to the proposed project compared to the Wharf Development is provided in Table 2. The proposed project involves less commercial development than what was evaluated in the FEIR, No other changes to the proposed project that relate to population and housing are proposed.

Changes in Circumstances or New Information of Substantial Importance

No changes in circumstances or new information of substantial importance that are relevant to population and housing have occurred since the FEIR was certified. Approximately one-fourth of the square footage of the Wharf Development project area evaluated in the FEIR has been developed and the surrounding areas have generally been built out and have not substantially changed.

Impact Analysis

Would the project:

- a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*
- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*
- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

The FEIR did not identify significant impacts related to population and housing and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to the inducement of substantial population growth in the project area or the displacement of existing housing or people; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to population and housing.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or	
XIII. PUBIC SERVICES						
Would the project:						
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:						
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to public services, and a summary of changes in circumstances or new information of substantial importance as it relates to public services, followed by a response to the threshold above.

Summary of FEIR

The FEIR concluded that there were no known significant public services impacts as the project design met the City of Coronado Fire Department Standard of allowing fire equipment to get within 300 feet of any portion of the property. The FEIR also concluded that police protection services from Harbor Police and City of Coronado police would be able to respond to emergencies within normal, acceptable response times. As a result, the FEIR concluded that impacts on public services would remain less than significant and no mitigation was required.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to public services, the proposed project site would be developed with a 7,500-sf restaurant building, and when combined with existing development, would equal 25,700 sf, which is approximately one-third of the Wharf Development floor area evaluated in the FEIR (75,000 sf). No other changes to the proposed project that relate to public services are proposed.

Changes in Circumstances or New Information of Substantial Importance

There are no changes in circumstances related to public services that have occurred since the FEIR was adopted. While the project site was previously served by police and fire services when it was a boatyard, it would continue to be served by police and fire services as a commercial development. No new information of substantial importance related to public services was identified during the preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:***

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

The changes to the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to public services because the proposed project involves a reduction in development, which corresponds to a general reduction in the demand for public services and would not result in additional impacts to public services beyond those identified in the FEIR.

The change in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified less-than-significant impacts on public services as fire and police services would continue to be provided to the proposed project site. Therefore, the change in circumstances is not substantial.

The FEIR did not identify significant impacts related to public services and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to the provision of new or physically altered public service facilities because construction and operations would involve less development and demand for public services generally; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines

Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance. No other changes to the proposed project that relate to public services are proposed.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to public services.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or	
XIV. RECREATION						
Would the project:						
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to recreation, and a summary of changes in circumstances or new information of substantial importance as it relates to recreation, followed by a response to thresholds XIV.a. and XIV.b, above.

Summary of FEIR

The Wharf Development project area at the time the FEIR was developed was an industrial boatyard and did not include recreational facilities in the immediate or surrounding area. As a result, the FEIR concluded that impacts on recreation would remain less than significant and no mitigation was required.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to recreation, the proposed project site would be developed with a 7,500-sf restaurant building, and when combined with existing development, would equal 25,700 sf, which is approximately one-third of the Wharf Development floor area evaluated in the FEIR (75,000 sf). No other changes to the proposed project that relate to recreation are proposed.

Changes in Circumstances or New Information of Substantial Importance

There are no changes in circumstances related to recreation that has occurred since the FEIR was adopted because the areas surrounding the Wharf Development project area have generally remained developed and have not substantially changed since the FEIR was adopted. No new information of substantial importance related to recreation was identified during the preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***
- b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?***

The FEIR did not identify significant impacts related to recreation and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to increase in the use of existing parks nor does it include the construction or expansion of recreational facilities; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to recreation.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
XV. TRANSPORTATION/TRAFFIC Would the project:						
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Result in an insufficient supply of parking to meet the project demand?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of proposed project changes as they relate to traffic, and a summary of changes in circumstances or new information of substantial importance as it relates to traffic, followed by a discussion for each individual threshold question.

Summary of FEIR

The FEIR did not identify significant impacts related to conflicts with traffic plans, congestion management plans, or alternative transportation plans, changes in air traffic patterns, or emergency access; however, potential impacts related to safety hazards, parking deficiencies, and cumulative traffic impacts were identified.

The effectiveness of the circulation system was evaluated in the FEIR by considering LOS, which is established by the San Diego Traffic Engineers’ Council (SANTEC) guidelines, and ranges from LOS A (best operating conditions) to LOS F (worst operating conditions). Intersections and street segments are considered to be acceptable if operating at LOS C or better, and are considered unacceptable at LOS D, E, or F. Significant impacts are identified when a project would degrade an intersection or street segment from LOS C or better to LOS D or worse. If existing operations are at LOS D or worse, then an increase in the volume to capacity ratio of up to 0.02 for street segments and an increase in intersection delay of two seconds is considered significant. The FEIR analyzed the potential for the Wharf Development to conflict with level of service (LOS) standards at six intersections in Coronado, including the following: (1) First Street and A Avenue; (2) First Street and B Avenue; (3) First Street and Orange Avenue; (4) Third Street and A Avenue; (5) Orange Avenue and Third Street; and (6) Orange Avenue and Fourth Street.

Increases in LOS were evaluated using trip generation estimates and estimated trip distribution on the six study area intersections during the a.m. and p.m. peak hours. A total of 3,000 daily trips were estimated in the FEIR, including 80 trips during the a.m. peak hour and 260 trips during the p.m. peak

hour. These additions were not concluded to substantially increase LOS at the six study area intersections, and no significant direct traffic impacts, including impacts on mass transit or non-motorized transit, air traffic patterns, emergency access, or public transportation were identified. However, impacts from contributions to regional traffic at the intersections of Third Street/Orange Avenue and Fourth Street/Orange Avenue were identified as potentially significant.

The parking analysis included in the FEIR relied on Urban Land Institute (ULI) and District guidelines. Specifically, the ULI and District parking requirements required 610 spaces and 539 spaces, respectively, to serve the ultimate development of the Wharf Development including 75,000 sf of office, retail, and restaurant uses. A shortfall of 148 and 57 spaces were identified based on the ULI and District parking requirements, respectively, and a significant and unavoidable parking impact was identified.

The FEIR included mitigation measures TRA-1 and TRA-2 and specific condition SC-2 to provide a fair share contribution for traffic improvements at First Street and Orange Avenue, and SR-75 and SR-282,³ respectively, that would reduce impacts related to traffic congestion to less than significant. Mitigation measure TRA-3 and a part of specific condition SC-2 were included to reduce impacts related to safety to less than significant. Permanent impacts related to a deficiency in parking spaces were concluded to remain significant and unavoidable, despite the inclusion of mitigation measures TRA-4 and TRA-5 and specific condition SC-1, which includes either increasing the amount of parking spaces or reducing the amount of development at the Wharf Development site. All mitigation measures and specific conditions from the FEIR are included in Appendix A of this Addendum and applicable mitigation measures and specific conditions related to traffic are included at the end of this section.

Changes in Project

A summary of the changes from the proposed project compared to the Wharf Development is provided in Table 2. As these changes relate to traffic, the proposed project includes a reduction in the amount of square footage of the overall development considered in the FEIR, as well as a reduction in the amount of restaurant space anticipated in the FEIR. No other changes to the proposed project that relate to traffic are proposed.

No other changes to the proposed project that relate to transportation and parking are proposed.

Changes in Circumstances or New Information of Substantial Importance

A traffic impact analysis (TIA) was prepared in 2018 by LLG Engineers that included an analysis of weekday and weekend traffic and parking counts to determine if changes in the surrounding roadway network or on-site parking supply would constitute a change in circumstances (see Appendix E). The TIA was prepared to evaluate if trips generated by the proposed project would result in significant impacts based on current traffic conditions in the area because even though the reduction in the project size as noted above would not exceed the trip generation totals in the FEIR, if traffic congestion in the area has increased since the FEIR was adopted, then this could qualify as a change in circumstances that could result in new impacts and potentially new mitigation measures. The results of the TIA indicated that existing traffic conditions are similar to those in the FEIR, and in some cases, traffic conditions have improved as the surrounding area has not experienced much development since the FEIR was certified,

³ SR-75 includes Orange Avenue, and SR-282 includes Third and Fourth streets.

and traffic improvements in the area, including those required of the FEIR that were implemented in the late 1990s, have improved conditions in some instances.

Regarding changes in circumstances to parking, 269 parking spaces have been constructed to serve an existing office building and restaurant within the Wharf Development project area, which is a reduction of 193 spaces from the 462 parking spaces identified to be included on-site in the FEIR. No new information of substantial importance related to traffic and parking has been identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

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

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to conflicts with the effectiveness of a circulation system. While changes in the proposed project did not suggest that additional trips would exceed those that were estimated in the FEIR (due to a reduction in buildout from the FEIR), an additional trip generation analysis was conducted for the proposed project. To compare the average daily trips and a.m./p.m. peak hour trips from the FEIR to the proposed project, the existing development (18,200 sf, including 11,700 sf of restaurant and 6,5000 sf of office) within the Wharf Development was estimated to generate 1,300 daily trips based on current trip generation rates (e.g., 100 trips/1,000 sf for restaurant and 20 trips/1,000 for retail and office uses⁴). The proposed project trip generation analysis indicated there would be an additional 750 daily trips with the proposed project, resulting in a combined total of 2,050 daily trips, which would not exceed the 3,000 trips that were analyzed in the FEIR. Also, the existing plus project a.m. and p.m. peak hours trips would total 38 and 171 trips, respectively, which would not exceed the 80 and 260 peak hour trips reported in the FEIR. As a result, the project-related traffic would not exceed the number of daily or a.m./p.m. peak hour trips evaluated in the FEIR.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to traffic impacts. The functioning of the roadway network surrounding the proposed project site is similar or better than it was in 1989 and would not result in a new significant effect or a substantial increase in previously identified less-than-significant impacts.

The FEIR identified significant impacts on the effectiveness of a circulation system that could be reduced to less than significant with the incorporation of mitigation measure TRA-2 and a component of specific

⁴ Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

condition SC-2, both of which include fair-share payments for future improvements at the intersection of SR-75 and SR-282, which is also Orange Avenue and its intersection with Third and Fourth Streets.

Fair-share payments for improvements at the intersection of SR-75 and STR-282 (or Orange Avenue and Third and Fourth Streets) were identified in the FEIR because this intersection operated at a deficient LOS during the p.m. peak hour (LOS F), and the incremental contribution of the Wharf Development was concluded to be potentially significant. Under existing conditions and existing plus cumulative conditions, the intersection of SR-75 and SR-282 operates at an acceptable LOS in the p.m. peak hour (LOS B or C). As shown below in Table 3, *Existing Plus Project Intersection Operations*, the intersections of Orange Avenue with Third and Fourth Streets would experience a change of 0.2 seconds or less, which does not meet or exceed the threshold of 2 seconds of delay at LOS D, E, or F. Because conditions have improved, and the project would generate fewer trips, the proposed project would not be required to implement mitigation measure TRA-2 and would not result in any new or more severe significant impacts related to conflicts with applicable plans measuring the effectiveness of the circulation system. Therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Furthermore, as shown below in Tables 3, 4, and 5, all study area intersections and street segments would operate at LOS C or better with operation of the proposed project, and no significant project-related traffic impacts would occur. As a result, the proposed project would result in fewer trips than what were analyzed in the FEIR. The surrounding roadway network has improved, resulting in reduced congestion, and the proposed project would not result in a conflict with LOS standards. Impacts associated with the proposed project on conflicts with applicable measurements of the transportation network would be less than significant.

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

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to conflicts with a congestion management program. The proposed project would involve less development than what was analyzed in the FEIR and would result in a reduction in construction and operational trips.

The changes in circumstances or new information of substantial importance identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to traffic impacts. The roadway network surrounding the proposed project site is similarly or less congested than it was in 1989 and the proposed project would result in a reduction in construction and operational trips.

The FEIR did not identify potentially significant impacts related to conflicts with a congestion management plan, and no mitigation measures were identified. The proposed project would not result in any new or more severe significant impacts related to congestion management plan conflicts; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the

conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

**Table 3
EXISTING PLUS PROJECT INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing		Existing Plus Project		
			Delay ^a	LOS ^b	Delay	LOS	Change
Orange Avenue / 4 th Street	Signal	Weekend	27.1	C	27.2	C	0.1
		Saturday	15.0	B	15.2	B	0.2
Orange Avenue / 3 rd Street	Signal	Weekend	17.3	B	17.5	B	0.2
		Saturday	17.2	B	17.4	B	0.2
Orange Avenue / 1 st Street	Signal	Weekend	7.7	A	8.0	A	0.3
		Saturday	6.9	A	7.2	A	0.3
B Avenue / 1 st Street	MSSC ^c	Weekend	12.0	B	12.4	B	0.4
		Saturday	16.1	C	17.0	C	0.9
Project Driveway / 1 st Street	MSSC	Weekend	10.4	B	10.8	B	0.4
		Saturday	10.8	B	11.2	B	0.4
A Avenue / 1 st Street	MSSC	Weekend	9.8	A	9.8	A	0.0
		Saturday	10.4	B	10.5	B	0.1
A Avenue / 3 rd Street	MSSC	Weekend	9.3	A	9.3	A	0.0
		Saturday	9.3	A	9.3	A	0.0

Source: LLG 2017.

a. Average delay expressed in seconds per vehicle.

b. Level of Service

c. Minor-Street Stop Controlled intersection. Minor street left turn delay is reported.

**Table 4
EXISTING PLUS PROJECT WEEKDAY STREET SEGMENT OPERATIONS**

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing Plus Project			Change
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	
Orange Avenue								
4 th Street to 3 rd Street	39,000	28,440	C	0.729	28,778	C	0.738	0.009
3 rd Street to 1 st Street	39,000	20,680	B	0.530	21,055	B	0.540	0.010
1 st Street								
Orange Avenue to Project Driveway	9,750	6,270	C	0.643	6,795	C	0.697	0.054

Source: LLG 2017.

a. Capacities based on City of Coronado Roadway Classifications and LOS Table.

b. Average Daily Traffic

c. Level of Service

d. Volume to capacity ratio

**Table 5
EXISTING PLUS PROJECT SATURDAY STREET SEGMENT OPERATIONS**

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing Plus Project			Change
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	
Orange Avenue								
4 th Street to 3 rd Street	39,000	21,830	B	0.560	22,168	B	0.568	0.008
3 rd Street to 1 st Street	39,000	10,500	A	0.269	10,875	A	0.279	0.010
1 st Street								
Orange Avenue to Project Driveway	9,750	5,420	B	0.556	5,945	B	0.610	0.054

Source: LLG 2017.

a. Capacities based on City of Coronado Roadway Classifications and LOS Table.

b. Average Daily Traffic

c. Level of Service

d. Volume to capacity ratio

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to changes in air traffic patterns because the proposed project would involve less development than what was analyzed in the FEIR and would result in a reduction in construction and operational trips.

The changes in circumstances associated with similar and slightly improved traffic conditions identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to air traffic patterns.

The FEIR did not identify potentially significant impacts related to changes in air traffic patterns, and no mitigation measures were identified. The proposed project would not result in any new or more severe significant impacts related to changes in air traffic patterns; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified effects related to substantial increases in hazards due to a design feature or incompatible use. The proposed project would involve less development and does not include a proposal to modify or change the existing site access driveway or other design features that would result in substantial increases in hazards.

The changes in circumstances associated with similar and improved traffic conditions identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase

in the severity of previously identified effects related to substantial increases in hazards due to a design feature or incompatible use. Specifically, mitigation measure TRA-1, which mitigates potential safety concerns related to transportation improvements with the signalization of First Street and Orange Avenue, has been completed and has improved safety conditions in the area.

Mitigation measure TRA-3 included two improvements to improve safety conditions at the site, including installation of a left-turn lane into the project site from eastbound First Street and a right-turn lane from eastbound First Street onto "A" Street. The right-turn lane has been constructed within First Street per mitigation measure TRA-3 and would not apply to the proposed project; however, a dedicated left-turn lane has not been installed within First Street into the project driveway. Due to a decrease in the amount of development anticipated in the FEIR and the reduced traffic congestion on surrounding roadways and intersections, a dedicated left-turn lane is not necessary to achieve safe site access from First Street. To further support this conclusion, LLG conducted a non-signalized intersection evaluation at the intersection of the project driveway with First Street, with the purpose of determining if cars would have the potential to line up within First Street while waiting to turn left into the project site, thereby creating congestion and potential safety issues. The results of the non-signalized intersection analysis concluded that with and without the proposed project, LOS at the project driveway and First Street would remain at LOS B, which is an acceptable LOS, and potential safety issues were not anticipated (see Appendix E). As a result, due to changes in circumstances which included improved traffic circulation in the area, and due to a reduction in the intensity of the proposed project, potentially significant safety issues would be less than significant, and the portion of mitigation measure TRA-3 that identified a dedicated left-turn lane from First Street into the project site is not needed to reduce the potentially significant traffic safety impact identified in the FEIR. As a result, the proposed project would not result in any new or more severe significant impacts related to hazards due to a design feature or incompatible use; therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

e. Result in inadequate emergency access?

The FEIR did not identify significant impacts related to emergency access and did not identify mitigation measures or specific conditions. There are no changes to the project described in the FEIR as they relate to emergency access and because the surrounding roadway network is similar or improved in terms of congestion, access to the site is somewhat better, and no new or more severe significant impacts related to emergency access would occur. As a result, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The FEIR did not identify significant impacts related to conflicts with public transit, bicycle, or pedestrian facilities and did not identify mitigation measures or specific conditions. There are no changes to the project described in the FEIR as they relate to public transit, bicycle, or pedestrian facilities, and no new or more severe significant impacts related to public transit, bicycle, or pedestrian facilities would occur.

As a result, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

g. Result in an insufficient supply of parking to meet the project demand?

The changes in the proposed project identified above would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified significant and unavoidable effects related to parking. The proposed project involves less development than what was evaluated in the FEIR and would therefore have a reduced demand for parking.

The changes in circumstances associated with parking would not require major revisions to the FEIR or result in new significant effects or a substantial increase in the severity of previously identified significant and unavoidable impacts related to insufficient parking supply. To determine if the construction of an office building, restaurant, and 269 surface parking spaces (instead of within an underground parking garage) constitutes a change in circumstances that could result in greater or new environmental impacts, the parking requirements included in SC-1 of the FEIR were reviewed to determine the required parking spaces for the existing plus the proposed project. As shown below in Table 6, *Existing Plus Project Parking Requirements*, 127 spaces are required to serve the existing office and restaurant, and an addition 70 spaces would be required to serve the proposed project. Together, a total of 197 spaces are required to serve the existing plus proposed project, which would be satisfied by the existing 269 spaces. As a result no resulting parking deficiencies were identified based on the changes in circumstances and new information. The significant and unavoidable parking impacts identified in the FEIR would be avoided.

The FEIR identified significant and unavoidable impacts related to a deficiency in parking and identified mitigation measures TRA-4 and TRA-5, which included consideration of public transportation as a means to reduce parking demand (TRA-4), and reducing the amount of development or increasing the amount of parking spaces so that a parking deficiency does not exist (TRA-5). The FEIR also determined that these mitigation measures would not reduce potential impacts to less than significant. However, the proposed project would not be required to implement mitigation measures TRA-4 and TRA-5 from the FEIR because no parking deficiencies would occur; therefore, the significant and unavoidable parking impacts identified in the FEIR would be avoided and the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

**Table 6
EXISTING PLUS PROJECT PARKING REQUIREMENTS**

Land Use	Size	Parking Requirement ^a	
		Rate	Spaces
<i>Existing</i>			
Office	6,500	5 spaces/1,000 sf	33
Restaurant	11,700 (120 seats)	10 spaces/1,000 sf	117
<i>Proposed</i>			
Restaurant	7,500(300 seats)	1 space/3 seats	100
<i>Existing + Proposed Required Parking Spaces</i>			250
<i>Existing Parking Spaces</i>			269
<i>Net Required Spaces</i>			-19

a. Per specific condition SC-1 of the FEIR.

Applicable Mitigation Measures and Specific Conditions

TRA-3: To insure safe access, the Applicant will install a left-turn lane on east-bound First Street. Concurrently, a right-turn lane will be installed from eastbound First Street onto southbound "A" [Avenue]. Both turn lanes will be installed within the existing street width.

TRA-4: Ferry, water taxi, bus and shuttle service connect the project to Coronado and other points on San Diego Bay. The traffic consultant estimates a potential reduction in demand for parking of 12 to 15 percent. Onsite parking would still be less than the estimated demand between 6 p.m. and 9 p.m. of up to 57 spaces.

TRA-5: To eliminate a parking shortfall, either the number of parking spaces would need to be increased, the mix of restaurant use decreased in favor of retail, or the overall density of the project decreased.

SC-1: That any subsequent commercial recreation development will meet the District's on-site parking requirements as set forth in the Final EIR as follows: retail and associated office: 1 parking space per 200 square feet; restaurants: 1 parking space per 3 seats or 1 space per 100 square feet, whichever is greater; accommodation docks: 1 space per slip.

SC-2: That as mitigation for the incremental increase in traffic generated by the project and cumulative effects upon SR-75/SR-282, the District will require as a condition of any subsequent project approval of a commercial recreation development that the Applicant shall make appropriate; and reasonable monetary contributions for controls and improvements at the intersections of Fourth Street and Orange Avenue, if and when constructed and implemented by the responsible jurisdictions (CALTRANS and/or City of Coronado).

To improve access, the Applicant will install a left east-bound First Street. Concurrently, a right-turn installed from east-bound First Street onto southbound "A" Street. Both turn lanes will be installed within the existing; street width.

The implementation of the traffic circulation mitigation measures are within the purview of Coronado and CALTRANS. They have been recommended for implementation in the Memorandum of /Agreement among the City of Coronado, San Diego Association of Governments, California Department of Transportation District 11, NAS North Island, and the San Diego Branch, Western Division,

NAVFACENGCOM, dated July 20, 1984 and made part of the NAS North Island-Coronado Commuter Access Plan (July 1984), prepared by the San Diego Association of Governments.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
XVI. UTILITIES AND SERVICE SYSTEMS						
Would the project:						
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following impact analysis includes an overview of what was analyzed in the FEIR, a summary of project changes as they relate to utilities and service systems, and a summary of changes in circumstances or new information of substantial importance as it relates to utilities and service systems. The following impact analysis is in response to questions XVI.a. through XVI.g. and does not include separate discussions for each threshold because the thresholds are concerned with the provision of adequate utilities and services, which were not concluded to result in any potentially significant impacts in the FEIR and do not warrant separate impact discussions.

Summary of FEIR

No temporary or permanent impacts on utilities and service systems were identified in the FEIR.

Changes in Project

A summary of changes to the proposed project compared to the Wharf Development is provided in Table 2. The proposed project involves less commercial development than was evaluated in the FEIR. No other changes to the proposed project that relate to utilities and service systems are proposed.

Changes in Circumstances or New Information of Substantial Importance

One change in circumstances related to utilities and service systems has occurred since the FEIR was certified. Specifically, the proposed project site is no longer a developed industrial boatyard, but is instead a vacant graded commercial site with existing utilities, including infrastructure for stormwater, potable water, sewer, irrigation, and natural gas. Most of the development evaluated in the FEIR has not yet been built, as the area currently includes approximately 18,200 sf of development, which is approximately one-quarter of the 75,000 sf of floor area of the Wharf Development analyzed in the FEIR. The proposed project site currently exists as a graded flat building pad, with an existing restaurant located to the west and an office to the southwest. No other change in circumstances or new information of substantial importance related to utilities and service systems was identified during preparation of this Addendum to the FEIR.

Impact Analysis

Would the project:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**
- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**
- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**
- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**
- e. 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?**
- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**
- g. Comply with federal, state, and local statutes and regulations related to solid waste?**

The FEIR did not identify significant impacts related to utilities and service systems and did not identify mitigation measures or specific conditions. The proposed project would not result in any new or more severe significant impacts related to utilities and service systems because project-related generation of waste, as well as demand for utility services including stormwater, wastewater, and potable water, would be reduced as the proposed project involves less development than was anticipated in the FEIR. As a result, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

Applicable Mitigation Measures and Specific Conditions

There are no mitigation measures or specific conditions from the FEIR identified to reduce impacts related to utilities and service systems.

	Revision to FEIR Required Due to a New or More Severe Significant Impact Caused by a Substantial Change in:		New Information, Not Previously Known Resulting in:			Less Than Significant Impact/ No Substantial Change From Previous Analysis
	The project	Circumstances	New Significant Impacts	More Severe Impacts	New Feasible Mitigation Measures or Alternatives	
XVII. MANDATORY FINDINGS OF SIGNIFICANCE						
Would the project:						
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Analysis

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

The FEIR identified less than significant impacts with mitigation related to biological and cultural resources. As discussed above under Sections IV and V, the proposed project would not result in any new or more severe significant impacts related to biological and cultural resources and mitigation measure CUL-1 from the FEIR would apply. While a mitigation measure and specific condition were identified for impacts to marine biological resources, they would not be required to be implemented related to the proposed project because no in-water work is proposed. As a result, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance related to degrading the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

The FEIR did not identify potentially significant cumulative impacts and no mitigation measures for cumulative impacts or specific conditions were identified for any environmental resources. As discussed throughout the environmental analysis above for the 16 environmental resource topics, there are no changes to the project that indicate or suggest that a new or more severe significant environmental impact, including cumulative impacts on traffic, would occur. Likewise, there are no changes in circumstances or new information that would suggest a new or more severe significant environmental impact would occur. Therefore, the proposed project would not meet the conditions outlined in State CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR, and the proposed project would meet the conditions outlined in State CEQA Guidelines Section 15164, which allows the preparation of an addendum to a previously certified EIR to achieve CEQA compliance.

- c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

The FEIR identified potentially significant impacts related to aesthetics, air quality, marine biological resources, cultural resources, hazards and hazardous materials, noise, and traffic, most of which were concluded to be reduced to less than significant with the incorporation of mitigation measures and/or specific conditions. Significant and unavoidable impacts related to aesthetics (obstruction of full or partial Bay views from multi-family residences) and parking (providing 462 spaces when 539 spaces

were required by the District's parking requirements in 1989) were identified in the FEIR, despite the inclusion of mitigation measures and specific conditions.

As discussed throughout the environmental analysis above for the 16 environmental resource topics, there are no changes to the proposed project that indicate or suggest that a new or more severe significant environmental impact would occur. As discussed in Section XV, due to changes in circumstances, which include an existing surface parking lot within the Wharf Development project area and updated parking requirements from the District, the significant and unavoidable parking impact would be reduced to less than significant under the proposed project. Also, the significant and unavoidable aesthetics impact would be reduced to less than significant under the proposed project because the proposed project would include less development in total area and in building height and would not preclude second and third story views from nearby multi-family residences. Therefore, the proposed project would result in reduced substantial adverse effects on human beings and would not increase any of the environmental impacts identified in the FEIR.

3.0 REFERENCES AND LIST OF PREPARERS

3.1 REFERENCES

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3.2 LIST OF PREPARERS

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Appendix A

Mitigation, Monitoring, and Reporting Program

New Restaurant at Ferry Landing

Mitigation, Monitoring, and Reporting Program

Prepared for:



San Diego Unified Port District
3165 Pacific Highway
San Diego, CA 92101

July 2018

1.0 Mitigation, Monitoring, and Reporting Program

1.1 Purpose

This Mitigation Monitoring and Reporting Program (MMRP) was prepared for the proposed New Restaurant at Ferry Landing Project (project or proposed project) to comply with Section 15097 of the California Environmental Quality Act (CEQA) and Public Resources Code Section 21081.6. Public Resources Code Section 21081.6 requires the Lead Agency for each project subject to CEQA to adopt a reporting or monitoring program for changes made to the project or conditions of approval adopted in order to mitigate or avoid significant effects on the environment. The Lead Agency must also monitor performance of the mitigation measure included in any environmental document to ensure that implementation takes place. The Lead Agency is responsible for review of all monitoring reports, enforcement actions, and document disposition. The Lead Agency will rely on information provided by a monitor as accurate and up to date and will field check mitigation measure status as required.

The purpose of the MMRP is to ensure that the mitigation measures, required by the Final Environmental Impact Report (FEIR), are properly implemented. As the Lead Agency for the project under CEQA, the San Diego Unified Port District (District) will monitor the mitigation measures for construction and operation of the proposed project. The District may modify how it will implement a mitigation measure, as long as the alternative means of implementing the mitigation still achieves the same or greater impact reduction. An effective reporting system shall be established prior to any monitoring efforts. Copies of the measures shall be distributed to the participants of the mitigation monitoring measures adopted. The MMRP includes specific conditions and mitigation measures listed in the FEIR for the Wharf Development, several of which have been completed in prior to previous development at the Wharf Development project area.

1.2 Mitigation Monitoring Checklist

The Mitigation Monitoring Checklist (Table MMRP-1) provides a mechanism for monitoring the mitigation measures in compliance with the FEIR. The Mitigation Monitoring Checklist is organized by categories of environmental impacts. Numbering has been added to the mitigation measures, which were not numbered in the FEIR, and the specific conditions are numbered similar to how they are presented in the FEIR. Potential impacts identified in the FEIR are summarized for each impact area and the required mitigation measures are listed. The checklist identifies the implementation schedule, who is responsible for implementing the measure, and required monitoring and reporting frequency, and who is responsible for verification of implementation. A description of these items is provided below.

Mitigation Measure or Specific Condition. The specific mitigation measure or specific condition language as described in the FEIR is listed in this category.

Monitoring Requirement. Specific requirements are provided for use by District staff to ensure that measures and specific conditions are appropriately implemented.

Responsible Party for Mitigation Implementation. This column explains who will ensure that the mitigation measure or specific condition is properly implemented. The District shall be responsible for either monitoring each measure or specific condition, or may delegate an agency or party at their discretion.

Completion Requirement. The mitigation measure or specific condition required for the project will be implemented at various times as construction proceeds and during operations.

Agency Responsible for Verification. This column describes who will be ultimately responsible for ensuring that each mitigation measure or specific condition is monitored and who will coordinate the final reporting program.

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
<p>SC-1: That any subsequent commercial recreation development will meet the District's on-site parking requirements as set forth in the Final EIR as follows: retail and associated office: 1 parking space per 200 square feet; restaurants: 1 parking space per 3 seats or 1 space per 100 square feet, whichever is greater; accommodation docks: 1 space per slip.</p>	Prior to operation	Applicant	Prior to operation	District
<p>SC-2: That as mitigation for the incremental increase in traffic generated by the project and cumulative effects upon State Route 75/State Route 282, the District will require as a condition of any subsequent project approval of a commercial recreation development that the Applicant shall make appropriate; and reasonable monetary contributions for controls and improvements at the intersections of Fourth Street and Orange Avenue, if and when constructed and implemented by the responsible jurisdictions (CALTRANS and/or City of Coronado).</p> <p>To improve access, the Applicant will install a left east-bound First Street. Concurrently, a right-turn installed from east-bound First Street onto southbound "A" Street. Both turn lanes will be installed within the existing; street width.</p> <p>The implementation of the traffic circulation mitigation measures is within the purview of Coronado and CALTRANS. They have been recommended for implementation in the Memorandum of /Agreement among the City of Coronado, San Diego Association of Governments, California Department of Transportation District 11, \NAS North Island, and the San Diego Branch, Western Division, NAVFACENGCOM, dated July 20, 1984 and made part of the NAS North Island-Coronado Commuter Access Plan (July 1984), prepared by the San Diego Association of Governments.</p>				<p>Due to a reduction in development and improved surrounding traffic conditions, the proportional contribution of traffic has been reduced and would avoid a significant impact. Further implementation and monitoring is not warranted.</p> <hr/> <p>The right-turn lane from eastbound First Street onto southbound "A" Street has been completed. Due to a reduction in development, site access impacts have been avoided and the left-turn lane on east-bound First Street into the project site is not necessary to reduce impacts to less than significant. Further monitoring and verification is not warranted.</p>

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
<p>SC-3: That a mitigation plan for the transplantation of eelgrass on one-to-one area replacement basis for any that is impacted by in-water construction or development, including provisions for regular monitoring and subsequent transplantation over a three year period, shall be submitted by the Applicant for approval by the Department of Fish and Game, National Marine Fisheries Service, and the District.</p>	No in-water work is proposed and further monitoring and verification is not warranted.			
<p>SC-4: That to minimize short term noise impacts during construction, the Applicant will require the construction contractor to (1) restrict normal construction activities to the hours 7 a.m. to 7 p.m. weekdays; (2) keep construction equipment as far as possible from sensitive receptors; and (3) provide acoustical shielding around night operating construction equipment (10 p.m. to 7 a.m.).</p>	During construction	Applicant/Contractor	At the end of construction	District
<p>To minimize noise levels to adjacent residents from normal operations of the development, the Applicant will relocate the access/egress driveway, as originally shown in Figure 2.3, about 50 feet to the west (not within A Avenue).</p>	This specific condition has been implemented and further monitoring and verification is not warranted.			
<p>A 6-foot high sound attenuation wall will be built along the fenceline of the condominium's western border.</p>	This specific condition has been implemented and further monitoring and verification is not warranted.			
<p>An 8-foot high sound attenuation wall will be constructed at the property line on the east side of the project site.</p>	This specific condition was not implemented due to objections by residents and would not be required for the proposed project.			
<p>The lessee will arrange for business hour (8 a.m. to 5 p.m.) pick-up of trash dumpsters.</p>	During operations	Applicant	Ongoing	District
<p>SC-5: That to minimize fugitive air emissions during construction, the Applicant will require the construction contractor to keep fugitive dust down by regular wetting of work areas.</p>	During construction	Applicant/Contractor	At the end of construction	District
<p>SC-6: To minimize nuisance odors from restaurants, the lessee will require vendors to use and regularly maintain after-burners or carbon filters to reduce odorous emissions from food establishments.</p>	During operations	Applicant	Ongoing	District

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
SC-7: That to minimize nuisance effects from light or glare, the contractor will use sodium vapor lights during construction, and shield and direct night lighting away from residences. The proposed project design includes cowls on light standards to control off-site spillage of night lighting and sky glow. Landscaping will be used along the project perimeter to cut down the effects of night lighting and glare from passing and parked vehicles.	During construction	Applicant/Contractor	At the end of construction	District
SC-8: As the existing site is contaminated with hazardous wastes and to determine the extent of subsurface contamination and alternatives for site remediation, the Applicant will prepare a Site Assessment and Remediation Plan to the satisfaction of the County Department of Health Services, Regional Water Quality Control Board, Air Pollution Control District, and District. Site remediation shall be required to be implemented prior to or concurrent with construction of the development.	This specific condition has been implemented and further monitoring and verification is not warranted.			
AES-1: The Wharf on San Diego Bay includes the following design features which mitigate impacts resulting from the visual intrusion of the project into a largely residential area: 1) extensive landscaping;	During project review	Applicant	During project review	District
2) solid fences and landscape buffer along edges of the project;	During project review	Applicant	During project review	District
3) below grade parking;	A surface parking lot has been constructed at the project site and no additional parking is proposed. Further monitoring and verification is not warranted.			
4) waterfront/nautical design theme; and	During project review	Applicant	During project review	District
5) an apron wharf for public access to view of the Bay.	The apron wharf has been implemented and further monitoring and verification is not warranted.			
AES-2: The Applicant will use sodium vapor light bulbs during construction and shield direct night lighting away from homes. The proposed project design includes cowls on light standards to control	Upon completion of landscaping improvements	Applicant	Prior to occupancy	District

Addendum to the Wharf Development FEIR
Mitigation, Monitoring, and Reporting Program

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
off-site spillage of night lighting and sky glow. Trees will be used along the project perimeter to cut down the effects of night lighting and glare from passing and parked vehicles.				
AES-3: None planned by the Applicant. The project could be redesigned to preserve some private Bay views. This would require a lower density development and positioning of buildings to allow view corridors. A lower density development with view corridors would only partially mitigate the impact to private adjacent residences.	The proposed project has been redesigned to include a single-story building that is reduced in height and no further implementation or monitoring of this measure is necessary.			
AES-4: Project implementation, however, would provide a significant increase in opportunity for the public to view the bay and San Diego skyline. Public views to the bay would be provided from the piers, the bayside promenade and bicycle path, and the proposed bayside dining and commercial establishments.	Previous development of the Ferry Landing site has included increased public views of the Bay from the piers, the bayside promenade, and existing restaurants, and no further implementation or monitoring of this measure is necessary.			
AQ-1: The Applicant will require the construction contractor to keep fugitive dust down by regular wetting of work areas.	During construction	Applicant/Contractor	At the end of construction	District
AQ-2: To reduce short-term impacts from construction activities for the project, the Applicant will require the construction contractor to control fugitive dust by regular wetting of work areas.	During construction	Applicant/Contractor	At the end of construction	District
AQ-3: To reduce natural gas and energy consumption, the Applicant will design structures for efficient energy use. Energy-saving devices will be installed as part of the proposed project.	During project review	Applicant	During project review	District
AQ-4: Design the structures for efficient energy use to reduce natural gas and electrical consumption.	During construction	Applicant	Prior to issuance of occupancy permits	District
AQ-5: Install energy saving devices such as setback thermostats, solar lighting, and solar water heaters.	During construction	Applicant	Prior to issuance of occupancy permits	District
AQ-6: The lessee will require vendors to use and regularly maintain after-burners or carbon filters to reduce odorous emissions from food establishments.	During operations	Applicant	Ongoing	District

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
AQ-7: Require vendors to use and regularly maintain afterburners or carbon filters to reduce odorous emission from food establishments	During operations	Applicant	Ongoing	District
BIO-1: The Applicant will relocate or replace lost eelgrass to the sandy bottom area at the northern-most end of the site where the planned "L" dock is set from the project boundary. Alternatively, the Applicant will join in off-site transplant program, as approved by appropriate resource agencies.	No in-water work is proposed and further monitoring and verification is not warranted.			
CUL-1: Any previously unidentified historical resources discovered during project construction will be afforded full protection by the Applicant until qualified personnel can assess their importance.	During construction	Applicant/Contractor	At the end of construction	District
HAZ-1: To determine the extent of subsurface contamination and alternatives for site remediation, the Applicant will prepare a site Assessment and Remediation Report. Site remediation recommendation(s) contained in this document will be implemented.	This mitigation measure has been implemented and further monitoring and verification is not warranted.			
HAZ-2: A Site Assessment and Remediation report will be prepared to determine the extent of subsurface contamination and alternatives for site remediation. Specific tasks to be undertaken as part of the Site Assessment and Remediation analysis would include the following: a. Preparation of a thorough site history review to target additional areas of potential waste accumulation. b. Additional subsurface investigations which may include drilling, soil and groundwater sampling, geophysical exploration, and monitoring. c. Laboratory analysis of selected samples; and d. Preparation of site remediation alternatives.	This mitigation measure has been implemented and further monitoring and verification is not warranted.			
NOI-1: The Applicant will require the construction contractor to: 1) restrict normal construction activities to the hours of 7 a.m. to 7 p.m. weekdays; 2) keep construction equipment as far as possible from	During construction	Applicant/Contractor	At the end of construction	District

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
sensitive receptors; and 3) provide acoustical shielding around night operating construction equipment (10 p.m. to 7 a.m.) .				
<p>NOI-2: To reduce short-term noise impacts during the construction phase of the project, the following measures will be implemented:</p> <p>a. Normal construction activities will be restricted to weekday daylight working hours (7:00 a.m. to 7:00 p.m.). During any emergency operation at nighttime, special measures, such as using less noisy equipment (based on manufacturer's specifications and properly maintained) should be considered when possible to limit adverse noise impact on the residential areas.</p> <p>b. Construction equipment will be kept as far as possible from sensitive receptors; and</p> <p>c. Acoustic shielding (temporary walls and noise barriers) around night operating (10:00 p.m. to 7:00 a.m.) construction equipment will be used.</p>	During construction	Applicant/Contractor	At the end of construction	District
<p>NOI-3: The Applicant will relocate the access/egress driveway as originally shown in Figure 2.3, about 50 feet to the west. A 6-foot sound wall will be built along the fence line of the condominium's western border. An 8-foot noise wall will be constructed at the property line on the south and east side of the proposed project site.</p>	This mitigation measure has been implemented and further monitoring and verification is not warranted.			
<p>NOI-4: The lessee will arrange for a business hour (8 a.m. to 5 p.m.) pick-up of the dumpster.</p>	During operations	Applicant	Ongoing	District
<p>TRA-1: The Applicant will contribute a fair share to the cost of recommended improvements, if and when the City of Coronado decides to signalize this intersection [First Street and Orange Avenue]. The Applicant's share is expected to be based upon no more than their proportional contribution to the total traffic at the impacted intersection.</p>	This mitigation measure has been implemented and further monitoring and verification is not warranted.			

**Table MMRP-1
NEW RESTAURANT AT FERRY LANDING PROJECT
ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT MITIGATION MONITORING AND REPORTING PROGRAM**

FEIR Mitigation Measure or Specific Condition	Monitoring Requirement	Responsible Party for Mitigation Implementation	Completion Requirement	Agency Responsible for Verification
TRA-2: The Applicant will contribute a fair share to the cost of recommended improvements, if and when CALTRANS decides to improve the junction of SR75 and 282. The Applicant's share is expected to be based upon no more than their proportional contribution to the total traffic at the impacted intersection.				
TRA-3: To insure safe access, the Applicant will install a left-turn lane on east-bound First Street. Concurrently, a right-turn lane will be installed from eastbound First Street onto southbound "A" Street. Both turn lanes will be installed within the existing street width.				
TRA-4: Ferry, water taxi, bus and shuttle service connect the project to Coronado and other points on San Diego Bay. The traffic consultant estimates a potential reduction in demand for parking of 12 to 15%. Onsite parking would still be less than the estimated demand between 6 p.m. and 9 p.m. of up to 57 spaces.				
TRA-5: To eliminate a parking shortfall, either the number of parking spaces would need to be increased, the mix of restaurant use decreased in favor of retail, or the overall density of the project decreased.				

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Appendix B

Geotechnical Report

**UPDATE
GEOTECHNICAL INVESTIGATION**

**FERRY LANDING EXPANSION
CORONADO, CALIFORNIA**



GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

**FERRY LANDING ASSOCIATES LLC
SAN DIEGO, CALIFORNIA**

**MARCH 30, 2016
PROJECT NO. 06032-52-03**



Project No. 06032-52-03
March 30, 2016

Ferry Landing Associates LLC
990 North Harbor Drive
San Diego, California 92101

Attention: Mr. George Palermo

Subject: UPDATE GEOTECHNICAL REPORT
FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

Reference: *Geotechnical Investigation, Ferry Landing Expansion, Coronado Steakhouse, Coronado, California*, prepared by Geocon Incorporated, dated May 6, 2008 (Project No. 06032-52-02).

Dear Mr. Palermo:

In accordance with your request, we are pleased to submit this update geotechnical report. The conclusions and recommendations presented in the referenced report remain applicable for the design and construction of the planned improvements. However, this letter provides updated seismic design parameters in accordance with the 2013 California Building Code (CBC), liquefaction evaluation, and recommendations for deep foundations and retaining walls.

SEISMIC DESIGN CRITERIA

We used the computer program *U.S. Seismic Design Maps*, provided by the USGS. Table 1 summarizes site-specific design criteria obtained from the 2013 California Building Code (CBC; Based on the 2012 International Building Code [IBC] and ASCE 7-10), Chapter 16 Structural Design, Section 1613 Earthquake Loads. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.3.2 of the 2013 CBC and Table 20.3-1 of ASCE 7-10. The site is classified as a Site Class F in accordance with the 2013 CBC Section 1613. However, we expect the period of the structure is less than 0.5 seconds and a Site Class E can be used to design the planned structure in accordance with ASCE 7-10 Section 20.3.1. We should perform a site-specific seismic analysis if the planned structures possess a period of greater than 0.5. The values presented in Table 1 are for the risk-targeted maximum considered earthquake (MCE_R).

**TABLE 1
2013 CBC SEISMIC DESIGN PARAMETERS**

Parameter	Value	2013 CBC Reference
Soil Site Class	E	Table 1613.3.2
MCE _R Ground Motion Spectral Response Acceleration – Class B (short), S _S	1.228g	Figure 1613.3.1(1)
MCE _R Ground Motion Spectral Response Acceleration – Class B (1 sec), S ₁	0.472g	Figure 1613.3.1(2)
Site Coefficient, F _A	0.900	Table 1613.3.3(1)
Site Coefficient, F _V	2.400	Table 1613.3.3(2)
Site Class Modified MCE _R Spectral Response Acceleration (short), S _{MS}	1.106g	Section 1613.3.3 (Eqn 16-37)
Site Class Modified MCE _R Spectral Response Acceleration (1 sec), S _{M1}	1.133g	Section 1613.3.3 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (short), S _{DS}	0.737g	Section 1613.3.4 (Eqn 16-39)
5% Damped Design Spectral Response Acceleration (1 sec), S _{D1}	0.755g	Section 1613.3.4 (Eqn 16-40)

Table 2 presents additional seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-10 for the mapped maximum considered geometric mean (MCE_G).

**TABLE 2
2013 CBC SEISMIC DESIGN PARAMETERS**

Parameter	Value	ASCE 7-10 Reference
Site Class	E	CBC Table 1613.3.2
Mapped MCE _G Peak Ground Acceleration, PGA	0.551g	Figure 22-7
Site Coefficient, F _{PGA}	0.900	Table 11.8-1
Site Class Modified MCE _G Peak Ground Acceleration, PGA _M	0.496g	Section 11.8.3 (Eqn 11.8-1)

Conformance to the criteria in Tables 1 and 2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

SOIL LIQUEFACTION AND LATERAL SPREAD POTENTIAL

Liquefaction typically occurs when a site is located in a zone with seismic activity, onsite soil is cohesionless/silt or clay with low plasticity, groundwater is encountered within 50 feet of the surface, and soil relative densities are less than about 70 percent. If the four previous criteria are met, a seismic event could result in a rapid pore-water pressure increase from the earthquake-generated ground accelerations. A potential for liquefaction exists at the site due to existing surficial soil and a shallow groundwater depth of approximately 9 feet.

We used the methods presented in the Journal of Geotechnical Engineering and NCEER (Youd, *et al*, 2001) to perform a liquefaction evaluation. We used a design-level seismic event with a magnitude of 7.5 and the peak site acceleration PGA_m of 0.496g calculated from ASCE 7-10 Section 11.8.3 and a deaggregated modal magnitude of 6.64 corresponding to a 50-year exposure with a 10 percent exceedance or a 475-year return period. We performed the liquefaction analysis using the data from the exploratory borings performed during our field investigation.

We used the blow counts for the liquefaction analysis based on the sampling operations in the field. In addition, we adjusted blow counts using a modified California sampler by two-thirds to obtain equivalent Standard Penetration Test (SPT) values. The blow counts were also adjusted for boring diameter, sampling method, rod length, overburden pressure, and energy delivered to the sampler corresponding to a driving-energy of 60 percent ($N_{1|60}$). We further adjusted the blow counts for estimated fines content and calculated a factor of safety. A site is considered to be susceptible to liquefaction when the computed factor of safety is less than 1.0. The results of our liquefaction analysis indicate factors of safety ranging from approximately 0.31 to 0.75 within the liquefiable soil layers below the groundwater table.

Based on our analysis, a potential for liquefaction exists within the loose, granular portions of the hydraulic fill and bay deposits below groundwater level. The zone of liquefiable soil beneath the site generally ranges from approximately groundwater level at 9 feet to a depth of 29 feet. Manifestation of liquefaction at the ground surface is expected to be approximately 4 to 4½ inches of settlement. Appendix A presents the output of the spreadsheets used and the adjusted profile of the blow count data prior to the adjustment for fines.

Lateral spreading occurs when liquefiable soil is in the immediate vicinity of a free face such as a slope. Factors controlling lateral displacement include earthquake magnitude, distance from the earthquake epicenter, thickness of liquefiable soil layer, grain size characteristics, fines content of the soil and SPT blow counts. Bartlett and Youd (1995) have concluded that lateral spreading is restricted to sediments with corrected SPT blowcounts of 15 or less for earthquake magnitudes less than or equal to 8.0. The potential of lateral spreading in the liquefiable soil below the groundwater table is

on the order of a few feet along the shoreline. The displacement would likely drop to few inches at a distance of 50 feet from the crest of the shoreline.

Surface manifestation due to liquefaction may consist of surface rupture and/or sand boils, and surface settlement. Sand boils occur where liquefiable soil is extruded upward through the soil deposit to the ground surface. Providing an increase in overburden pressure and a compacted fill mat can mitigate surface manifestation. Research presented by Ishihara (1985) indicates that the presence of a non-liquefiable surface layer typically results in the effects of at-depth liquefaction from reaching the surface. Modifications to Ishihara's chart have been made to include higher ground accelerations (Ishihara's 1985 chart was based on a 0.25 ground acceleration) by Youd and Garris (1995). Based on Youd's modified curves and the thickness of the non-liquefiable soil layer (layer above the assumed groundwater table), the potential for surface manifestation may be possible.

DEEP FOUNDATIONS

A deep foundation system should be used to support the proposed building and to mitigate potential soil movement from soil liquefaction and lateral spreading due to an earthquake under the structure. Because groundwater exists at a relatively shallow depth, drilled piers would require water- or slurry-displacement methods of construction and would likely not be cost effective. Therefore, driven pre-cast concrete piles (PCCPs) will likely be the most economical. Recommendations for the other types of piles such as driven steel H piles or auger cast-in-place piles can be provided if required.

Piles can develop support by both friction and by end bearing in the Old Paralic Deposits (formerly named Bay Point Formation). The piles should be embedded at least 10 feet into the formational materials. The Old Paralic Deposits are located at a depth of about 29 feet; therefore, the minimum pile depths should be at least 39 feet. Capacities are commonly limited to 70 tons for 12-inch-square piles and 100 tons for 14-inch-square piles due to structural and drivability concerns.

Figures 1 and 2 present the calculated allowable end bearing, allowable skin friction, and total allowable bearing (skin friction plus end bearing) axial pile capacities for driven 12-inch and 14-inch square pre-cast concrete piles. A factor of safety of 2 was used for end bearing and side friction for the driven piles.

Single pile uplift capacity can be taken as 60 percent of the allowable downward skin friction capacity.

If pile spacing is at least three times the maximum dimension of the pile, a reduction in axial capacity for group effects is not considered necessary. If piles are spaced between 2 and 3 pile diameters (center to center), the single pile axial capacity should be reduced by 25 percent. Geocoin

Incorporated should be contacted to provide single-pile capacity if piles are spaced closer than 2 diameters.

Pile settlement is expected to be on the order of ½-inch for PCCPs. Settlement should be essentially complete shortly after completion of the structure.

The design tip elevation of the driven piles should be determined by the project structural engineer based on the elevation of the pile cap or grade beam and Figure 2. Some variation should be expected during drilling and driving operations.

Negative skin friction (downdrag) occurs when the settlement of the surrounding soil exceeds the downward movement of the pile shaft. Should liquefaction occur in the site subsurface soils, negative skin friction could result due to settlement of the liquefiable soil. The allowable capacities provided on Figures 1 and 2 have been reduced to account for negative skin friction. Negative skin friction should be accounted for when determining allowable capacities based on static or dynamic loads tests. Due to the potential for liquefaction, the allowable bearing material should not begin until a depth of about 35 feet below existing grade. Table 3 presents the estimated downdrag loads for the planned pile types and sizes.

**TABLE 3
DOWNDRAG LOAD ON PILES**

Pile Type	Downdrag Load on Piles (kips)
12-inch Square Precast Concrete	38
14-inch Square Precast Concrete	44

The allowable downward capacity and allowable uplift capacity may be increased by one-third when considering transient wind or seismic loads.

The geotechnical engineer (a representative of Geocon Incorporated) should observe pile driving to evaluate if adequate capacity has been attained. If unexpected soil and driving conditions are encountered, foundation modification may be required.

A pile hammer that develops a minimum energy of 40,000 foot-pounds per blow should be used. Pre-drilling or jetting should not be used during the pile installation, if possible. Jetting could be used to a depth of about 5 feet above the Old Paralic Deposits or 24 feet.

On-site soils are considered corrosive with respect to steel and concrete. The groundwater is saltwater and is considered a brackish environment. The structural engineer should take this into account when selecting cement quantities and types for piles. Adequate concrete cover over reinforcing steel should be provided in accordance with applicable construction practices and design standards.

Due to the relatively uniform subsurface condition and limited number of piles planned for the project, a static pile load testing program to evaluate pile axial capacity is not considered necessary. However, a dynamic pile load testing program based on the wave equation analyses and CAPWAP to evaluate whether specified tip elevations are appropriate to meet design capacities is recommended. At least 4 piles should be tested and the tests should be performed in accordance with Caltrans criteria and/or ASTM procedures, as appropriate. Both end of driving (EOD) and beginning of re-strike (BOR) data should be collected to assess how much soil setup or relaxation occurred after initial driving.

Based on discussions with the structural engineer, we performed the lateral pile analyses for 12-inch-square PCCPs using the LPILE computer program. The lateral loads at the ground surface that would produce a deflection at the pile cap on a 12-inch square PCCP for a free head condition for both static and liquefied conditions are presented in Table 4. We assumed an axial load of 100 kips and a 45-foot-long pile. We assumed concrete with a modulus of elasticity of 4,415 kips per square inch (ksi). If greater capacities than those shown in Table 4 are needed, if different pile types are chosen, or if additional data are needed, Geocon Incorporated should be contacted. Shear, moment, and deflection diagrams from our analyses are located in Appendix B of this report.

**TABLE 4
LATERAL LOAD/DEFLECTION FOR 12-INCH SQUARE PCCP
FREE HEAD CONDITION**

Min. Pile Length (feet)	Condition	Axial Load (kips)	Deflection (inches)	Lateral Load (kips)	Maximum Moment (in-kips)
45	Static	100	¼	12	316
			½	23	632
			1	36	1,210
45	Liquefied	100	¼	11	288
			½	22	577
			1	34	1,107

RETAINING WALLS

The recommendations herein for retaining walls (except for the seawall) are provided based on our experience with similar site and soil conditions. Modifications may be required depending on actual site conditions.

Retaining walls not restrained at the top and having a level backfill surface should be designed for an active soil pressure equivalent to the pressure exerted by a fluid density of 35 pounds per cubic foot (pcf). Where the backfill will be inclined at 2:1 (horizontal:vertical), an active soil pressure of 50 pcf is recommended. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls.

Unrestrained walls are those that are allowed to rotate more than $0.001H$ (where H equals the height of the retaining portion of the wall) at the top of the wall. Where walls are restrained from movement at the top, an additional uniform pressure of $7H$ psf should be added to the active soil pressure. For retaining walls subject to vehicular loads within a horizontal distance equal to two-thirds the wall height, a surcharge equivalent to 2 feet of fill soil should be added.

The use of drainage openings through the base of the wall (weep holes) is not recommended where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 50 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. Figure 3 presents a typical retaining wall drainage detail. If conditions different than those described are expected, or if specific drainage details are desired, Geocon Incorporated should be contacted for additional recommendations.

The structural engineer should determine the seismic design category for the project. If the project possesses a seismic design category of D, E, or F, the proposed retaining walls should be designed with seismic lateral pressure. A seismic load of $14H$ should be used for design on walls that support more than 6 feet of backfill in accordance with Section 1803.5.12 of the 2013 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall. We used the peak site acceleration, PGA_M , of 0.496g calculated from ASCE 7-10 Section 11.8.3 and applied a pseudo-static coefficient of 0.3.

Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 8 feet. In the event that walls higher than 8 feet or other types of walls are planned, such as crib-type walls, Geocon Incorporated should be consulted for additional recommendations.

In general, wall foundations having a minimum depth and width of 1 foot and founded on a minimum of 2 feet of properly compacted fill may be designed for an allowable soil bearing pressure of 2,000 psf. Retaining walls that are structurally tied into the planned restaurant should be supported on a pile foundation. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, retaining wall foundations should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

Soil contemplated for use as retaining wall backfill, including import materials, should be identified in the field prior to backfill. At that time, Geocon Incorporated should obtain samples for laboratory testing to evaluate its suitability. Modified lateral earth pressures may be necessary if the backfill soil does not meet the required expansion index or shear strength. City or regional standard wall designs, if used, are based on a specific active lateral earth pressure and/or soil friction angle. In this regard, on-site soil to be used as backfill may or may not meet the values for standard wall designs. Geocon Incorporated should be consulted to assess the suitability of the on-site soil for use as wall backfill if standard wall designs will be used.

Should you have questions regarding this letter, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

Kelli A. James

Kelli A. James
RCE 79438



Shawn Foy Weedon

Shawn Foy Weedon
GE 2714



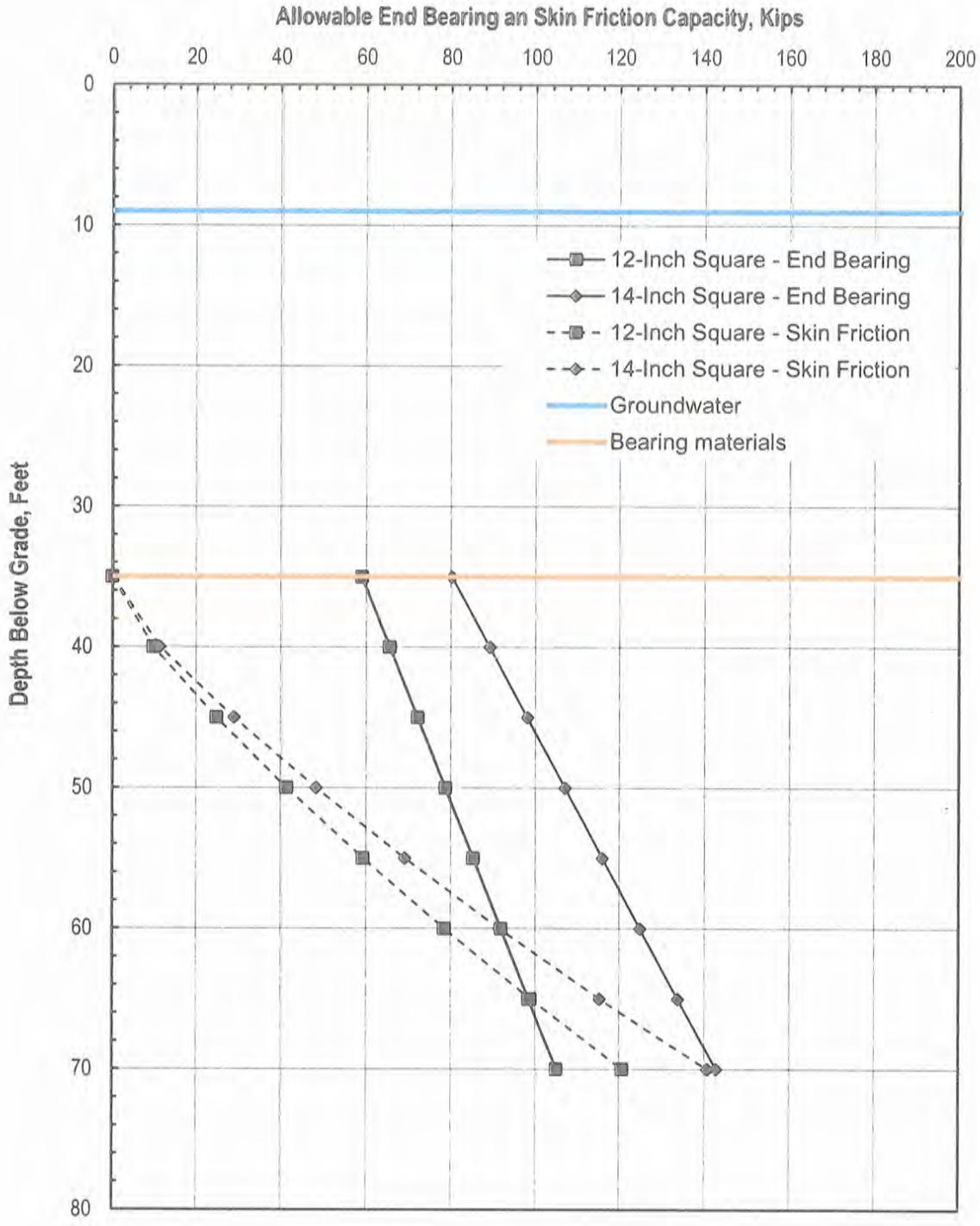
Ali Sadr

Ali Sadr
CEG 1778



KAJ:SFW:AS:dmc

(2) Addressee
(e-mail) Wiseman and Rohy Structural Engineers
Attention: Mr. Jim Wiseman



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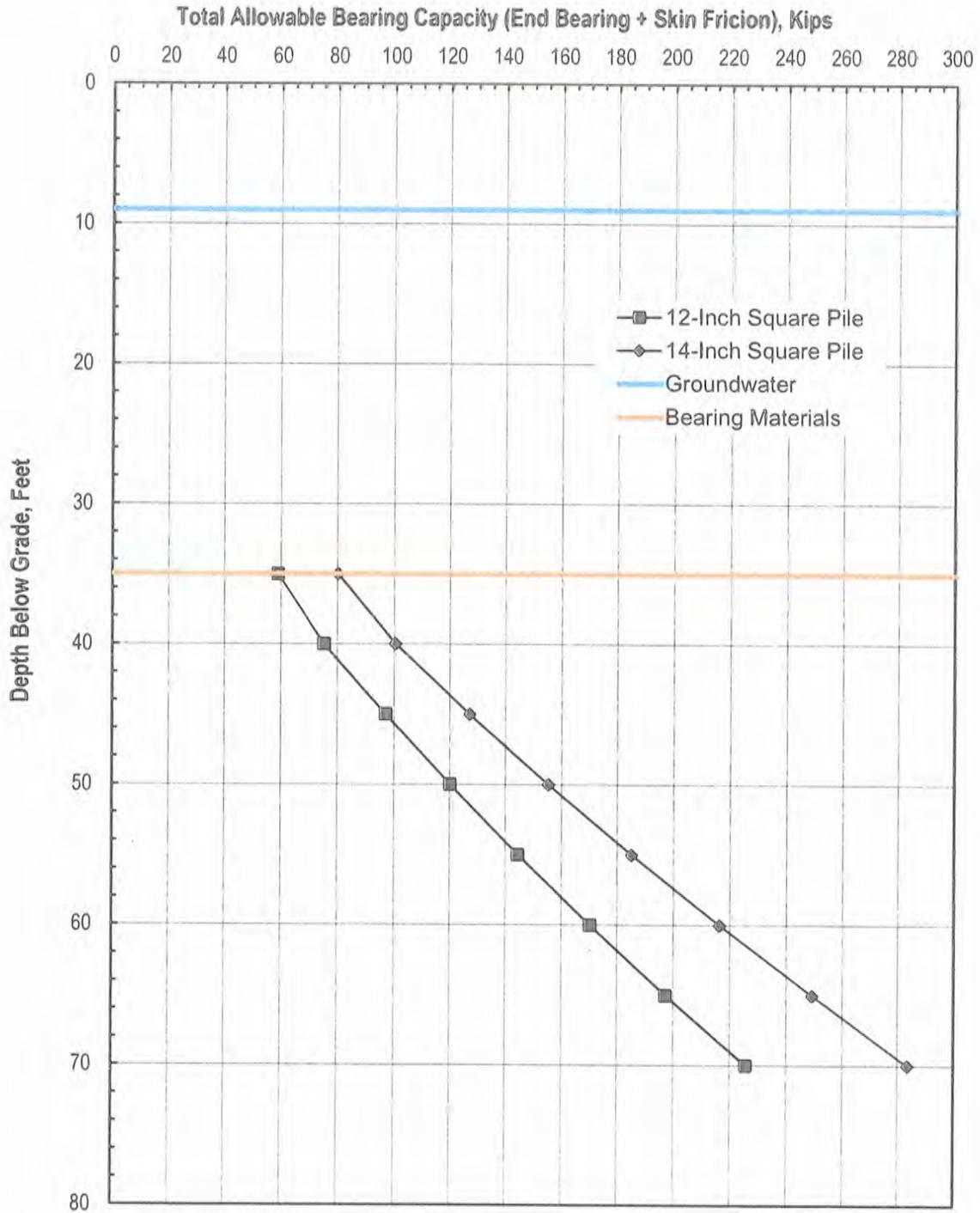
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KJ / SW

ALLOWABLE END BEARING/SKIN FRICTION CAPACITY -
DRIVEN PILES

FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

DATE 3-30-2016	PROJECT NO. 06032-52-03	FIG. 1
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ALLOWABLE BEARING CAPACITY - DRIVEN PILES

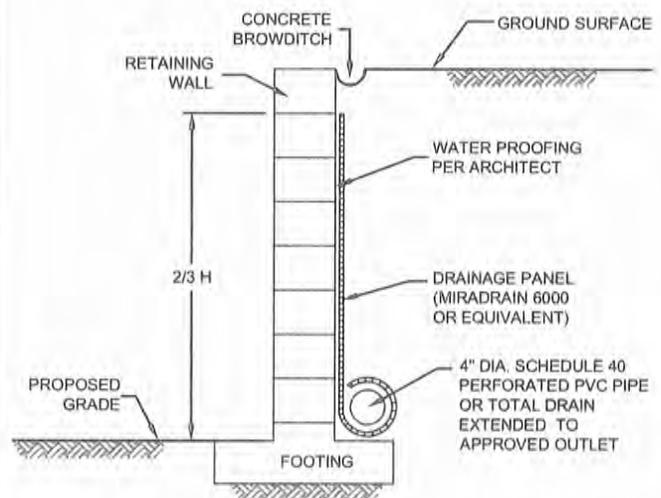
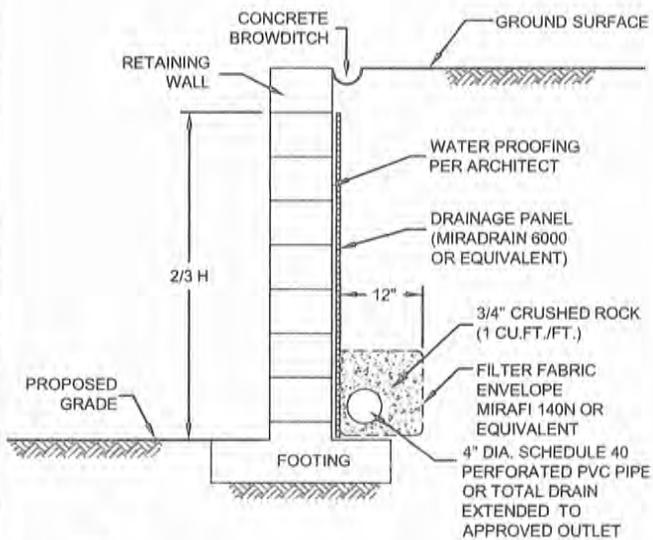
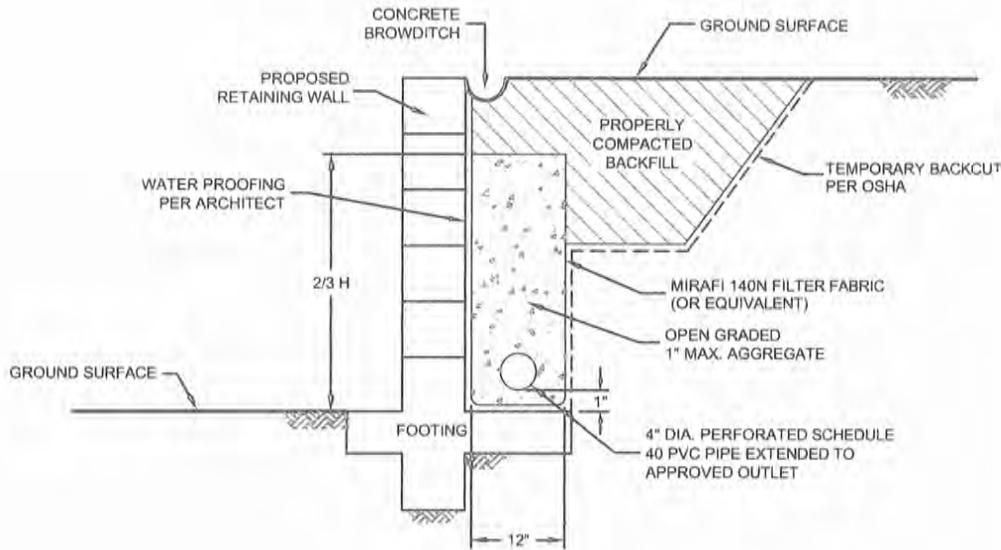
FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

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DATE 3-30-2016

PROJECT NO. 06032-52-03

FIG. 2



NOTE :

DRAIN SHOULD BE UNIFORMLY SLOPED TO GRAVITY OUTLET OR TO A SUMP WHERE WATER CAN BE REMOVED BY PUMPING

NO SCALE

TYPICAL RETAINING WALL DRAIN DETAIL

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FIG. 3

APPENDIX



A

APPENDIX A
LIQUEFACTION ANALYSES
FOR
FERRY LANDING EXPANSION
CORONADO, CALIFORNIA
PROJECT NO. 06032-52-03



Hammer Energy Correction Factors

Reference: Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10

Project Name: FERRY LANDING EXPANSION

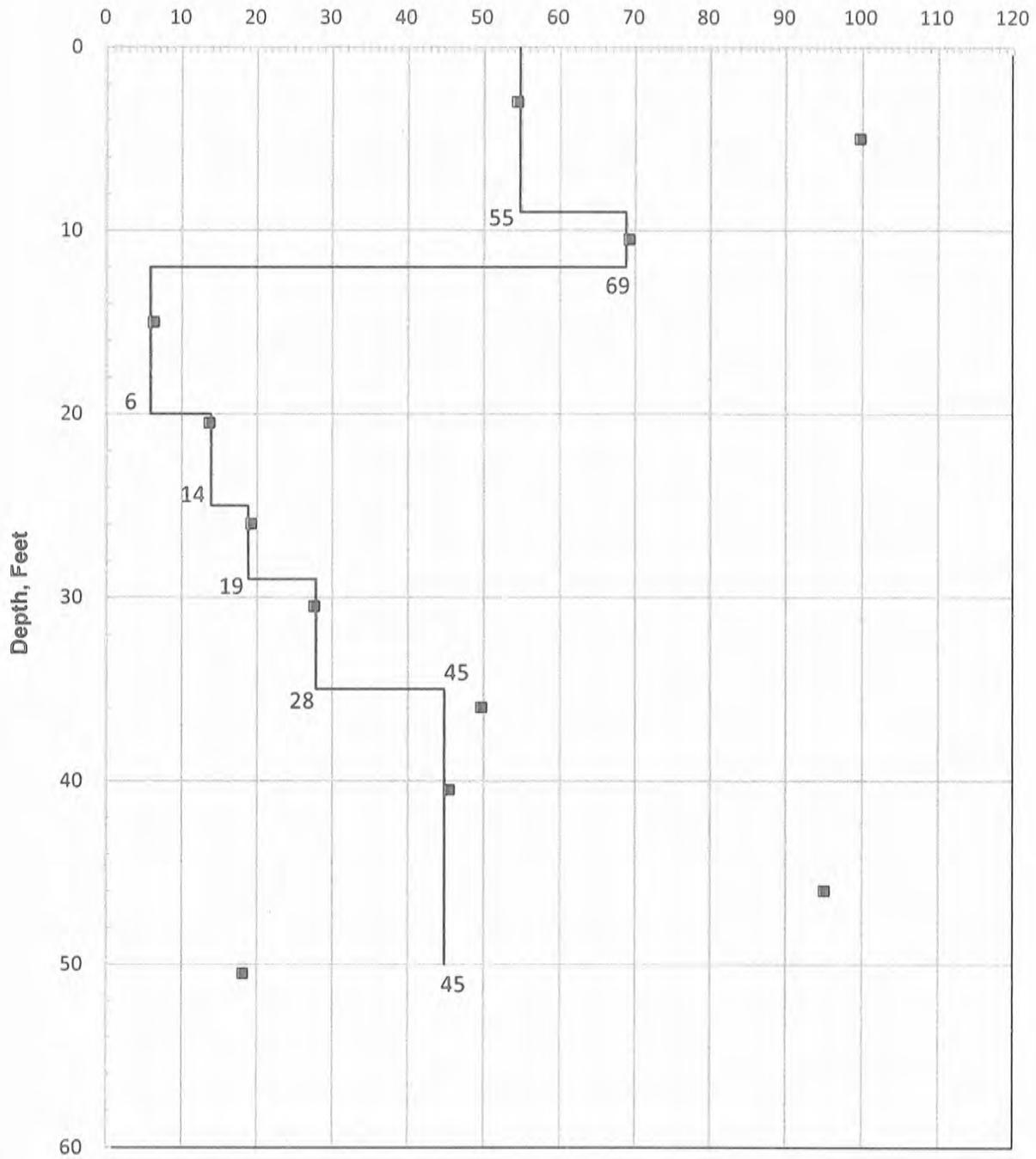
Date: 3/10/2016

Project Number: 06032-52-03

Hole Diameter, Inches:	8	Hole Diameter Correction, C_D :	1.15
Average Unit Weight, γ (pcf):	125		
Adjustment Factor for 350 LB Hammer Above Groundwater	1.00	<- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples	
Adjustment Factor for 350 LB Hammer Below Groundwater	1.00	<- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples	
Approximate Depth to Groundwater in Boring B-1	9		
Approximate Depth to Groundwater in Boring B-2	9	*Auto, Cathead, or Downhole Hammer	

Sample	Depth, Feet	Field Blow Count (per Foot)	Type of Sampler (MC or SPT)	Hammer Type* (A/C/D)	Adjust for each GWT Level		Energy Correction, C_E (1.0 Safe-T-Driver/Cathead, 1.3 Automatic)				
					Equiv. SPT Blow Count, N	σ'_v , psf	Overburden Pressure Correction, C_N	Energy Ratio Correction, C_E	Rod Length Correction, C_R	Sampling Correction, C_S	N1/60 Blowcounts (Prior to Fines)
B1-2	3.0	43	MC	A	28.7	375.0	1.70	1.3	0.75	1.00	54.64
B1-3	5.0	110	MC	A	73.3	625.0	1.70	1.3	0.75	1.00	100.00
B1-4	10.5	64	MC	A	42.7	1218.9	1.28	1.3	0.85	1.00	69.45
B1-5	15.0	4	SPT	A	4.0	1500.6	1.15	1.3	0.85	1.10	6.45
B1-6	20.5	14	MC	A	9.3	1844.9	1.04	1.3	0.95	1.00	13.80
B1-7	26.0	13	SPT	A	13.0	2189.2	0.96	1.3	0.95	1.10	19.41
B1-8	30.5	31	MC	A	20.7	2470.9	0.90	1.3	1.00	1.00	27.80
B1-9	36.0	36	SPT	A	36.0	2815.2	0.84	1.3	1.00	1.10	49.90
B1-10	40.5	57	MC	A	38.0	3096.9	0.80	1.3	1.00	1.00	45.65
B1-11	46.0	76	SPT	A	76.0	3441.2	0.76	1.3	1.00	1.10	95.28
B1-12	50.5	25	MC	A	16.7	3722.9	0.73	1.3	1.00	1.00	18.26
B2-2	3.0	42	MC	A	28.0	375.0	1.70	1.3	0.75	1.00	53.37
B2-3	5.0	120	MC	A	80.0	625.0	1.70	1.3	0.75	1.00	100.00
B2-4	11.0	72	SPT	A	72.0	1250.2	1.26	1.3	0.85	1.10	100.00
No. #	15.5	16	MC	A	10.7	1531.9	1.14	1.3	0.85	1.00	15.49
B2-5	21.0	4	SPT	A	4.0	1876.2	1.03	1.3	0.95	1.10	6.45
B2-6	25.5	16	MC	A	10.7	2157.9	0.96	1.3	0.95	1.00	14.58
B2-7	30.0	23	SPT	A	23.0	2439.6	0.91	1.3	1.00	1.10	34.25
B2-8	35.5	52	MC	A	34.7	2783.9	0.85	1.3	1.00	1.00	43.93
B2-9	41.0	34	SPT	A	34.0	3128.2	0.80	1.3	1.00	1.10	44.71
B2-10	45.5	68	MC	A	45.3	3409.9	0.77	1.3	1.00	1.00	51.90
B2-11	51.0	84	SPT	A	84.0	3754.2	0.73	1.3	1.00	1.10	100.00

Boring B-1 N1|60 Blowcounts



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N1|60 BLOWCOUNT DATA

FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

PROJECT NO. 06032-52-03



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils. Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils. Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10
 2. Seed, et al. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, 2003.

Project Name: Ferry Landing Expansion
 Project Number: 06032-52-03
 Boring: B-1

PGA_{max}: 0.496
 Magnitude: 6.64
 Groundwater Depth, Ft: 9.0
 Reference Pressure, P_a: 2000
 Unit Weight of Water: 62.4
 Soil Unit Weight, pcf: 130

Include K_σ (Y/N) N
 Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
 Minimum Factor of Safety for Liquefaction 1.1

Enter for Fine-Grained Materials

Depth, ft	N ₁₆₀	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₆₀ Adj. for Fines	σ _v , psf	σ' _v , psf	r _d	K _c	NCEER CRR _{7.5}	RAUCH CRR _{7.5}	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	55	3	8.0	-	-	-	55.0	130.0	130.0	1.00	1.00	0.800	0.800	0.236	-	Above GWT	3.390		
2	55	3	8.0	-	-	-	55.0	260.0	260.0	1.00	1.00	0.800	0.800	0.235	-	Above GWT	3.397		
3	55	3	8.0	-	-	-	55.0	390.0	390.0	0.99	1.00	0.800	0.800	0.235	-	Above GWT	3.405		
4	55	3	6.0	-	-	-	55.0	520.0	520.0	0.99	1.00	0.800	0.800	0.234	-	Above GWT	3.413		
5	55	3	6.0	-	-	-	55.0	650.0	650.0	0.99	1.00	0.800	0.800	0.234	-	Above GWT	3.421		
6	55	3	6.0	-	-	-	55.0	780.0	780.0	0.99	1.00	0.800	0.800	0.233	-	Above GWT	3.429		
7	55	3	6.0	-	-	-	55.0	910.0	910.0	0.99	1.00	0.800	0.800	0.233	-	Above GWT	3.437		
8	55	3	6.0	-	-	-	55.0	1040.0	1040.0	0.98	1.00	0.800	0.800	0.232	-	Above GWT	3.445		
9	55	3	17.0	-	-	-	55.0	1170.0	1170.0	0.98	1.00	0.800	0.800	0.232	-	NL	3.453		
10	69	3	17.0	-	-	-	69.0	1300.0	1237.6	0.98	1.00	0.800	0.800	0.243	-	NL	3.294		
11	69	3	17.0	-	-	-	69.0	1430.0	1305.2	0.98	1.00	0.800	0.800	0.253	-	NL	3.165		
12	69	3	17.0	-	-	-	69.0	1560.0	1372.8	0.97	1.00	0.800	0.800	0.262	-	NL	3.058		
13	6	26	17.0	-	-	-	7.9	1690.0	1440.4	0.97	1.00	0.089	0.095	0.270	-	LIQUEFIABLE	0.354	2.9	0.348
14	6	26	25.0	-	-	-	7.9	1820.0	1508.0	0.97	1.00	0.089	0.095	0.277	-	LIQUEFIABLE	0.344	2.9	0.348
15	6	26	25.0	-	-	-	7.9	1950.0	1575.6	0.97	1.00	0.089	0.095	0.283	-	LIQUEFIABLE	0.337	2.9	0.348
16	6	26	25.0	-	-	-	7.9	2080.0	1643.2	0.97	1.00	0.089	0.095	0.289	-	LIQUEFIABLE	0.330	2.9	0.348
17	6	26	25.0	-	-	-	7.9	2210.0	1710.8	0.96	1.00	0.089	0.095	0.294	-	LIQUEFIABLE	0.324	2.9	0.348
18	6	26	25.0	-	-	-	7.9	2340.0	1778.4	0.96	1.00	0.089	0.095	0.299	-	LIQUEFIABLE	0.319	2.9	0.348
19	6	26	25.0	-	-	-	7.9	2470.0	1846.0	0.96	1.00	0.089	0.095	0.303	-	LIQUEFIABLE	0.314	2.9	0.348
20	6	26	22.0	-	-	-	7.9	2600.0	1913.6	0.96	1.00	0.089	0.095	0.307	-	LIQUEFIABLE	0.310	2.9	0.348
21	14	12	22.0	-	-	-	15.3	2730.0	1981.2	0.95	1.00	0.166	0.163	0.310	-	LIQUEFIABLE	0.524	1.8	0.216
22	14	12	22.0	-	-	-	15.3	2860.0	2048.8	0.95	1.00	0.166	0.163	0.314	-	LIQUEFIABLE	0.519	1.8	0.216
23	14	12	22.0	-	-	-	15.3	2990.0	2116.4	0.95	1.00	0.166	0.163	0.316	-	LIQUEFIABLE	0.515	1.8	0.216
24	14	12	22.0	-	-	-	15.3	3120.0	2184.0	0.95	1.00	0.166	0.163	0.319	-	LIQUEFIABLE	0.511	1.8	0.216

From Graph



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils. *Journal of Geotechnical and Environmental Engineering*, October, 2001, Vol. 127, No. 10
 2. Seed, et al. *Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework*, 2003.

Project Name: Ferry Landing Expansion
 Project Number: 06032-52-03
 Boring: B-1

PGA_m: 0.496
 Magnitude: 6.64
 Groundwater Depth, Ft: 9.0
 Reference Pressure, P_a: 2000
 Unit Weight of Water: 62.4
 Soil Unit Weight, pcf: 130

Include K_G (Y/N) N
 Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
 Minimum Factor of Safety for Liquefaction: 1.1

Enter for Fine-Grained Materials MWF Idress(1997) = (M')^{2.5s}/10^{2.24}

Depth, ft	N ₁₍₆₀₎	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₍₆₀₎ Adj. for Fines	σ, psf	σ', psf	r _d	K _c	NCEER CRR _{7.5}	RAUCH CRR _{7.5}	CSR #1=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
25	14	12	22.0	-	-	-	15.3	3250.0	2251.6	0.94	1.00	0.166	0.163	0.321	-	LIQUEFIABLE	0.507	1.8	0.216
26	19	19	22.0	-	-	-	21.4	3380.0	2319.2	0.94	1.00	0.234	0.234	0.323	-	LIQUEFIABLE	0.723	1.4	0.168
27	19	19	22.0	-	-	-	21.4	3510.0	2386.8	0.93	1.00	0.234	0.234	0.324	-	LIQUEFIABLE	0.720	1.4	0.168
28	19	19	22.0	-	-	-	21.4	3640.0	2454.4	0.93	1.00	0.234	0.234	0.326	-	LIQUEFIABLE	0.717	1.4	0.168
29	19	19	22.0	-	-	-	21.4	3770.0	2522.0	0.92	1.00	0.234	0.234	0.327	-	LIQUEFIABLE	0.715	1.4	0.168
30	28	28	26.2	-	-	-	32.5	3900.0	2589.6	0.92	1.00	0.800	0.800	0.327	-	NL	2.444	-	-
31	28	28	26.2	-	-	-	32.5	4030.0	2657.2	0.92	1.00	0.800	0.800	0.328	-	NL	2.441	-	-
32	28	28	26.2	-	-	-	32.5	4160.0	2724.8	0.91	1.00	0.800	0.800	0.328	-	NL	2.440	-	-
33	28	28	26.2	-	-	-	32.5	4290.0	2792.4	0.90	1.00	0.800	0.800	0.328	-	NL	2.440	-	-
34	28	28	26.2	-	-	-	32.5	4420.0	2860.0	0.90	1.00	0.800	0.800	0.327	-	NL	2.443	-	-
35	28	28	25.2	-	-	-	32.5	4550.0	2927.6	0.89	1.00	0.800	0.800	0.327	-	NL	2.448	-	-
36	45	45	25.2	-	-	-	51.0	4680.0	2995.2	0.88	1.00	0.800	0.800	0.326	-	NL	2.455	-	-
37	45	45	25.2	-	-	-	51.0	4810.0	3062.8	0.88	1.00	0.800	0.800	0.325	-	NL	2.464	-	-
38	45	45	25.2	-	-	-	51.0	4940.0	3130.4	0.87	1.00	0.800	0.800	0.323	-	NL	2.474	-	-
39	45	45	25.2	-	-	-	51.0	5070.0	3198.0	0.86	1.00	0.800	0.800	0.322	-	NL	2.487	-	-
40	45	45	22.0	-	-	-	51.0	5200.0	3265.6	0.85	1.00	0.800	0.800	0.320	-	NL	2.501	-	-
41	45	45	22.0	-	-	-	51.0	5330.0	3333.2	0.84	1.00	0.800	0.800	0.318	-	NL	2.517	-	-
42	45	45	22.0	-	-	-	51.0	5460.0	3400.8	0.83	1.00	0.800	0.800	0.316	-	NL	2.535	-	-
43	45	45	22.0	-	-	-	51.0	5590.0	3468.4	0.82	1.00	0.800	0.800	0.313	-	NL	2.554	-	-
44	45	45	22.0	-	-	-	51.0	5720.0	3536.0	0.81	1.00	0.800	0.800	0.311	-	NL	2.575	-	-
45	45	45	22.0	-	-	-	51.0	5850.0	3603.6	0.80	1.00	0.800	0.800	0.308	-	NL	2.598	-	-
46	45	45	22.0	-	-	-	51.0	5980.0	3671.2	0.79	1.00	0.800	0.800	0.305	-	NL	2.622	-	-
47	45	45	22.0	-	-	-	51.0	6110.0	3738.8	0.78	1.00	0.800	0.800	0.302	-	NL	2.647	-	-
48	45	45	22.0	-	-	-	51.0	6240.0	3806.4	0.77	1.00	0.800	0.800	0.299	-	NL	2.674	-	-

From Graph



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10
 2. Seed, et al. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, 2003.

Project Name: Ferry Landing Expansion

Project Number: 06032-52-03

Boring: B-1

PGA_w: 0.49g

Magnitude: 6.64

Groundwater Depth, Ft: 9.0

Reference Pressure, P_a: 2000

Unit Weight of Water: 62.4

Soil Unit Weight, pcf: 130

Include K_σ (Y/N) N
 Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
 Minimum Factor of Safety for Liquefaction: 1.1

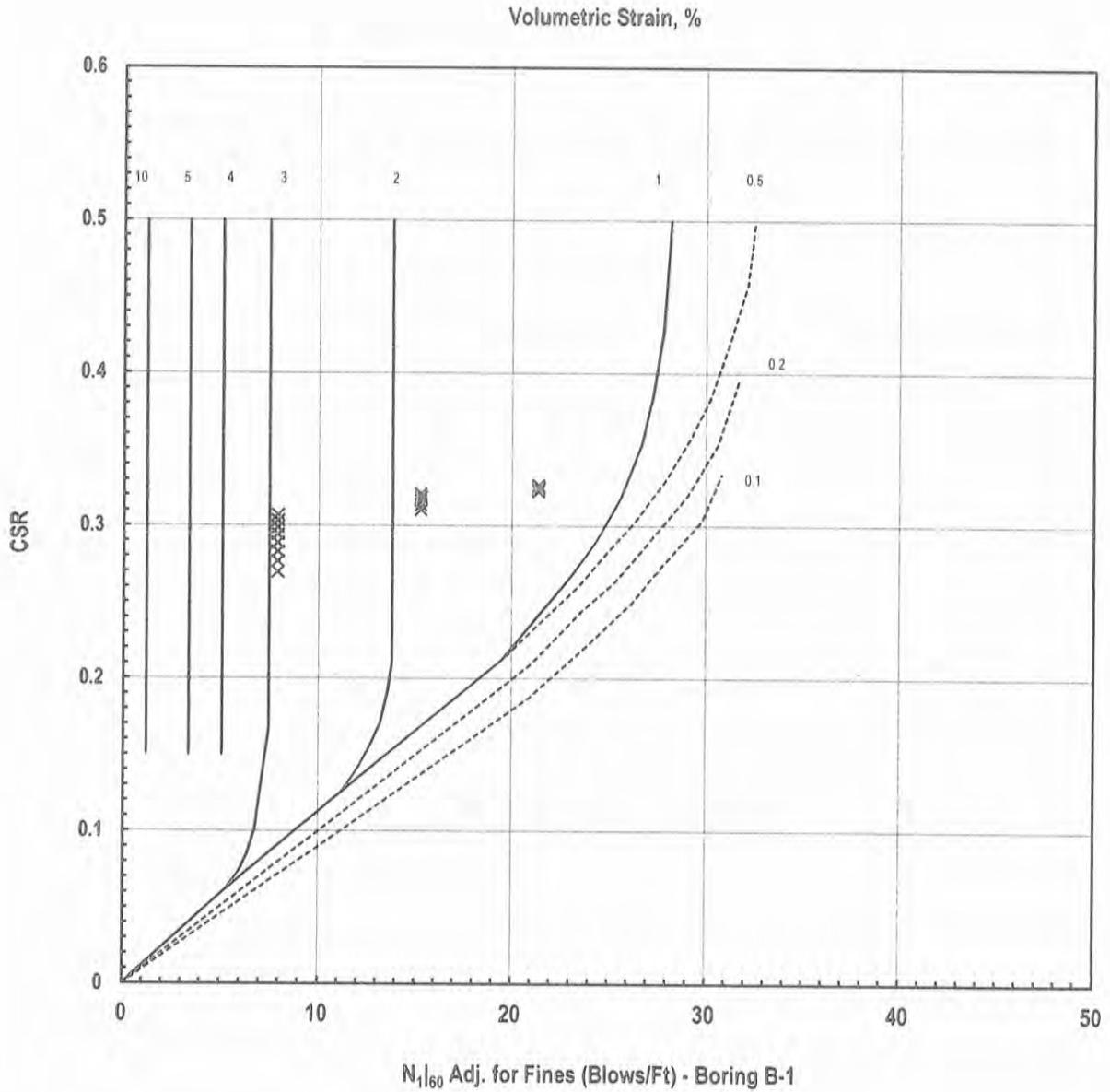
$$MMWF_{Ibriess(1997)} = (M)^{2.5} \cdot 10^{2.34}$$

Enter for Fine-Grained Materials New

Depth, ft	N ₁₆₀	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₆₀ Adj. for Fines	σ', psf	σ _v , psf	r _d	K _σ	NCEER CRR _{7.5}	RAUCH CRR _{7.5}	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
49	45	45	22.0	--	--	--	51.0	6370.0	3874.0	0.76	1.00	0.800	0.800	0.296	--	NL	2.702		
50	45	45	22.0	--	--	--	51.0	6500.0	3941.6	0.75	1.00	0.800	0.800	0.293	--	NL	2.731		
51	45	45	22.0	--	--	--	51.0	6630.0	4009.2	0.74	1.00	0.800	0.800	0.290	--	NL	2.760		

Total Settlement, S₁₀ (in.) = 4.538
 Total Liquefiable Layers = 17

From Graph



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6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

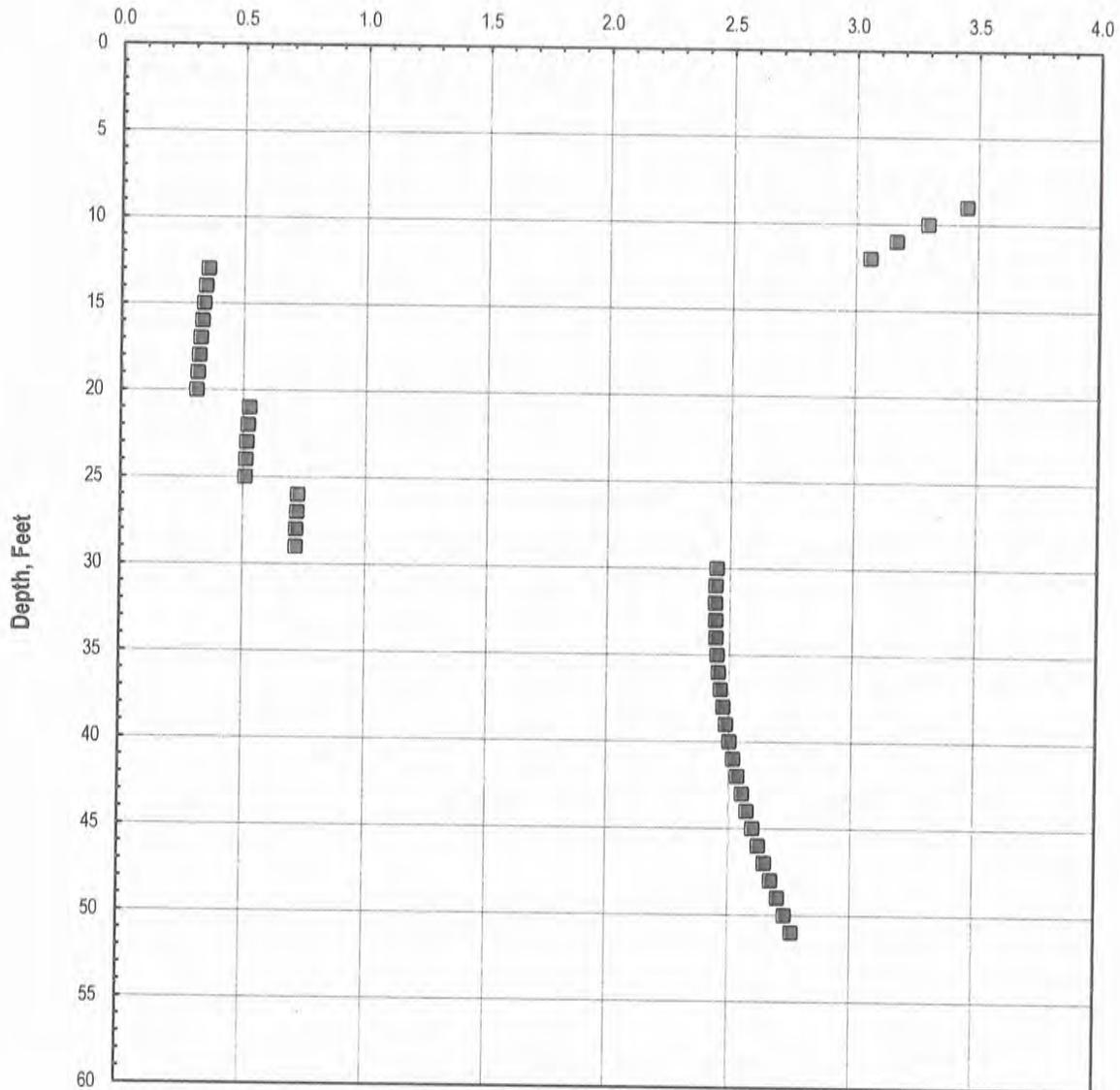
KJ / SW		
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LIQUEFACTION - VOLUMETRIC STRAIN

FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

	PROJECT NO. 06032-52-03
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Factor of Safety - Boring B-1



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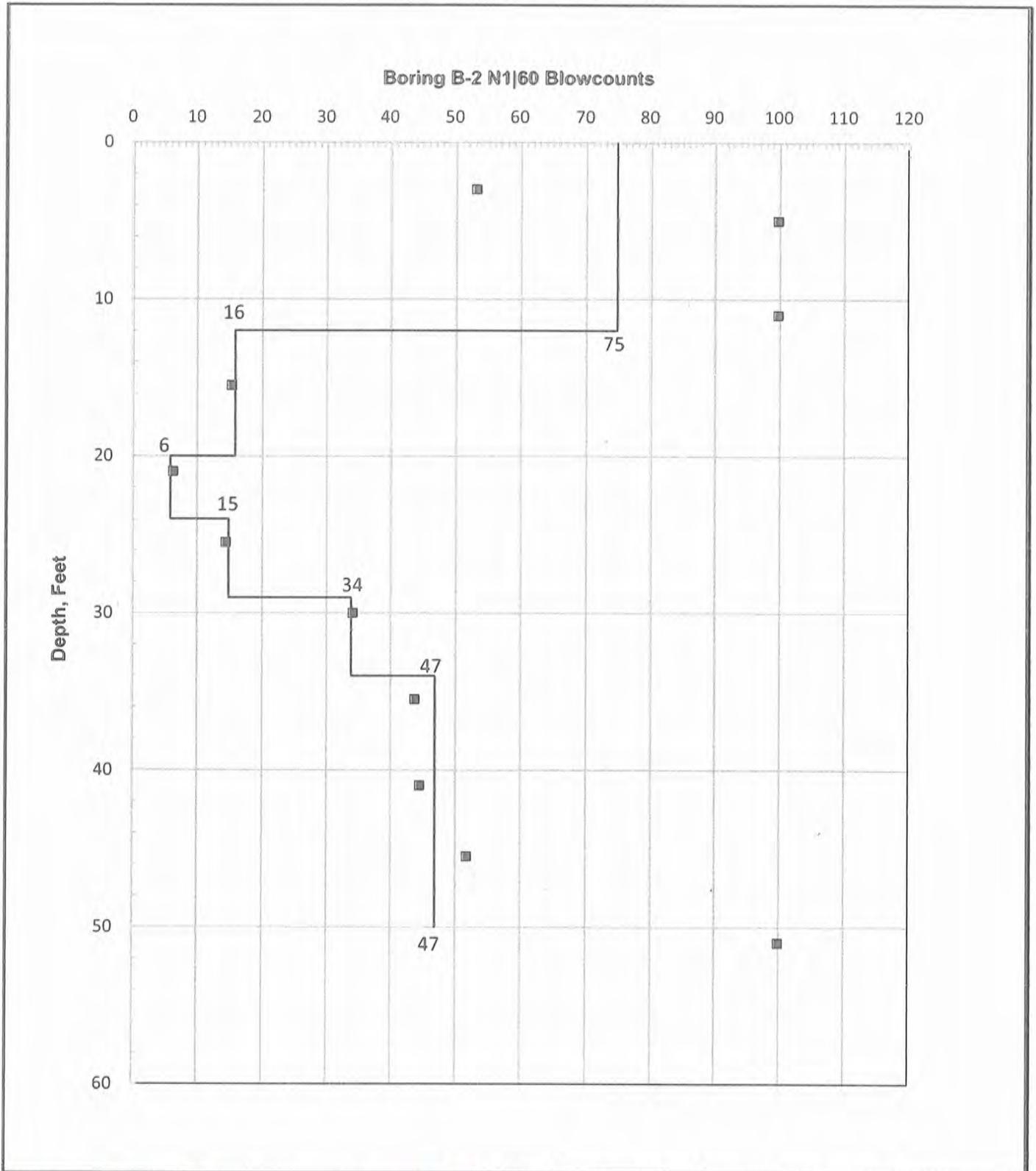
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

kj / SW		
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LIQUEFACTION - FACTOR OF SAFETY

FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

	PROJECT NO. 06032-52-03
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 INCORPORATED



GEOTECHNICAL CONSULTANTS
 6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
 PHONE 858 558-6900 - FAX 858 558-6159

KJ / SW

N1|60 BLOWCOUNT DATA

FERRY LANDING EXPANSION
 CORONADO, CALIFORNIA

PROJECT NO. 06032-52-03



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils. *Journal of Geotechnical and Environmental Engineering*, October, 2001, Vol. 127, No. 10
 2. Seed, et al. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, 2003.

Project Name: Ferry Landing Expansion

Project Number: 06032-52-03

Boring: B-2

PGA_{in}: 0.496

Magnitude: 6.64

Groundwater Depth, Ft: 9.0

Reference Pressure, P_v: 2000

Unit Weight of Water: 62.4

Soil Unit Weight, pcf: 130

Include K_σ (Y/N): N

Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2): 2

Minimum Factor of Safety for Liquefaction: 1.1

Enter for Fine-Grained Materials

New

MMWF (Idriss(1997)) = (M)^{2.5}/10^{2.24}

From Graph

Depth, ft	N ₁₆₀	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₆₀ Adj. for Fines	σ _v , psf	σ' _v , psf	τ _s	K _σ	NCEER CRR7.5	RAUCH CRR7.5	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	75	16	9.0	--	--	--	80.6	1300.0	1300.0	1.00	1.00	0.800	0.800	0.236	--	Above GWT	3.390		
2	75	16	9.0	--	--	--	80.6	2600.0	2600.0	1.00	1.00	0.800	0.800	0.235	--	Above GWT	3.397		
3	75	16	9.0	--	--	--	80.6	3900.0	3900.0	0.99	1.00	0.800	0.800	0.235	--	Above GWT	3.405		
4	75	16	6.0	--	--	--	80.6	5200.0	5200.0	0.99	1.00	0.800	0.800	0.234	--	Above GWT	3.413		
5	75	16	6.0	--	--	--	80.6	6500.0	6500.0	0.99	1.00	0.800	0.800	0.234	--	Above GWT	3.421		
6	75	16	6.0	--	--	--	80.6	7800.0	7800.0	0.99	1.00	0.800	0.800	0.233	--	Above GWT	3.429		
7	75	16	6.0	--	--	--	80.6	9100.0	9100.0	0.99	1.00	0.800	0.800	0.233	--	Above GWT	3.437		
8	75	16	6.0	--	--	--	80.6	10400.0	10400.0	0.98	1.00	0.800	0.800	0.232	--	Above GWT	3.445		
9	75	16	6.0	--	--	--	80.6	11700.0	11700.0	0.98	1.00	0.800	0.800	0.232	--	NL	3.453		
10	75	16	21.0	--	--	--	80.6	13000.0	12376.0	0.98	1.00	0.800	0.800	0.243	--	NL	3.294		
11	16	16	21.0	--	--	--	17.8	14300.0	1305.2	0.98	1.00	0.194	0.190	0.253	--	LIQUEFIABLE	0.751	1.6	0.192
12	16	16	21.0	--	--	--	17.8	15600.0	1372.8	0.97	1.00	0.194	0.190	0.262	--	LIQUEFIABLE	0.726	1.6	0.192
13	16	16	21.0	--	--	--	17.8	16900.0	1440.4	0.97	1.00	0.194	0.190	0.270	--	LIQUEFIABLE	0.704	1.6	0.192
14	16	16	21.0	--	--	--	17.8	18200.0	1508.0	0.97	1.00	0.194	0.190	0.277	--	LIQUEFIABLE	0.686	1.6	0.192
15	16	16	21.0	--	--	--	17.8	19500.0	1575.6	0.97	1.00	0.194	0.190	0.283	--	LIQUEFIABLE	0.671	1.6	0.192
16	16	16	21.0	--	--	--	17.8	20800.0	1643.2	0.97	1.00	0.194	0.190	0.289	--	LIQUEFIABLE	0.657	1.6	0.192
17	16	16	21.0	--	--	--	17.8	22100.0	1710.8	0.96	1.00	0.194	0.190	0.294	--	LIQUEFIABLE	0.646	1.6	0.192
18	16	16	21.0	--	--	--	17.8	23400.0	1778.4	0.96	1.00	0.194	0.190	0.299	--	LIQUEFIABLE	0.635	1.6	0.192
19	16	16	21.0	--	--	--	17.8	24700.0	1846.0	0.96	1.00	0.194	0.190	0.303	--	LIQUEFIABLE	0.626	1.6	0.192
20	6	37	30.0	--	--	--	12.0	26000.0	1913.6	0.96	1.00	0.131	0.131	0.307	--	LIQUEFIABLE	0.427	2.3	0.276
21	6	37	30.0	--	--	--	12.0	27300.0	1981.2	0.95	1.00	0.131	0.131	0.310	--	LIQUEFIABLE	0.423	2.3	0.276
22	6	37	30.0	--	--	--	12.0	28600.0	2048.8	0.95	1.00	0.131	0.131	0.314	--	LIQUEFIABLE	0.418	2.3	0.276
23	6	37	30.0	--	--	--	12.0	29900.0	2116.4	0.95	1.00	0.131	0.131	0.316	--	LIQUEFIABLE	0.415	2.3	0.276
24	6	37	30.0	--	--	--	12.0	31200.0	2184.0	0.95	1.00	0.131	0.131	0.319	--	LIQUEFIABLE	0.411	2.3	0.276



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils. *Journal of Geotechnical and Environmental Engineering*, October, 2001, Vol. 127, No. 10
 2. Seed, et al. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, 2003.

Project Name: Ferry Landing Expansion

Project Number: 06032-52-03

Boring: B-2

PGA_{max}: 0.486

Magnitude: 5.64

Groundwater Depth, Ft: 9.0

Reference Pressure, p_a: 2000

Unit Weight of Water: 62.4

Soil Unit Weight, pcf: 130

Include K_σ (Y/N): N
 Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2): 2
 Minimum Factor of Safety for Liquefaction: 1.1

MWF (Ibriss(1997)) = (M)^{1.56} / 10^{2.24}

From Graph

Enter for Fine-Grained Materials

New

Depth, ft	N ₁₆₀	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₆₀ Adj. for Fines	σ', psf	σ', psf	r _d	K _σ	NCEER CRR _{7.5}	RAUCH CRR _{7.5}	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
25	15	11	19.0	--	--	--	16.2	3250.0	2251.6	0.94	1.00	0.176	0.172	0.321	--	LIQUEFIABLE	0.537	1.8	0.216
26	15	11	19.0	--	--	--	16.2	3380.0	2319.2	0.94	1.00	0.176	0.172	0.323	--	LIQUEFIABLE	0.534	1.8	0.216
27	15	11	19.0	--	--	--	16.2	3510.0	2386.8	0.93	1.00	0.176	0.172	0.324	--	LIQUEFIABLE	0.532	1.8	0.216
28	15	11	19.0	--	--	--	16.2	3640.0	2454.4	0.93	1.00	0.176	0.172	0.326	--	LIQUEFIABLE	0.530	1.8	0.216
29	34	8	24.0	--	--	--	35.5	3770.0	2522.0	0.93	1.00	0.800	0.800	0.327	--	NL	2.449		
30	34	8	24.0	--	--	--	35.5	3900.0	2589.6	0.92	1.00	0.800	0.800	0.327	--	NL	2.444		
31	34	8	24.0	--	--	--	35.5	4030.0	2657.2	0.92	1.00	0.800	0.800	0.328	--	NL	2.441		
32	34	8	24.0	--	--	--	35.5	4160.0	2724.8	0.91	1.00	0.800	0.800	0.328	--	NL	2.440		
33	34	8	24.0	--	--	--	35.5	4290.0	2792.4	0.90	1.00	0.800	0.800	0.328	--	NL	2.440		
34	34	8	24.0	--	--	--	35.5	4420.0	2860.0	0.90	1.00	0.800	0.800	0.327	--	NL	2.443		
35	47	8	25.1	--	--	--	48.9	4550.0	2927.6	0.89	1.00	0.800	0.800	0.327	--	NL	2.448		
36	47	8	25.1	--	--	--	48.9	4680.0	2995.2	0.88	1.00	0.800	0.800	0.326	--	NL	2.455		
37	47	8	25.1	--	--	--	48.9	4810.0	3062.8	0.88	1.00	0.800	0.800	0.325	--	NL	2.464		
38	47	8	25.1	--	--	--	48.9	4940.0	3130.4	0.87	1.00	0.800	0.800	0.323	--	NL	2.474		
39	47	8	25.1	--	--	--	48.9	5070.0	3198.0	0.86	1.00	0.800	0.800	0.322	--	NL	2.487		
40	47	8	20.0	--	--	--	48.9	5200.0	3265.6	0.85	1.00	0.800	0.800	0.320	--	NL	2.501		
41	47	8	20.0	--	--	--	48.9	5330.0	3333.2	0.84	1.00	0.800	0.800	0.318	--	NL	2.517		
42	47	8	20.0	--	--	--	48.9	5460.0	3400.8	0.83	1.00	0.800	0.800	0.316	--	NL	2.535		
43	47	8	20.0	--	--	--	48.9	5590.0	3468.4	0.82	1.00	0.800	0.800	0.313	--	NL	2.554		
44	47	8	20.0	--	--	--	48.9	5720.0	3536.0	0.81	1.00	0.800	0.800	0.311	--	NL	2.575		
45	47	8	25.0	--	--	--	48.9	5850.0	3603.6	0.80	1.00	0.800	0.800	0.308	--	NL	2.598		
46	47	8	25.0	--	--	--	48.9	5980.0	3671.2	0.79	1.00	0.800	0.800	0.305	--	NL	2.622		
47	47	8	25.0	--	--	--	48.9	6110.0	3738.8	0.78	1.00	0.800	0.800	0.302	--	NL	2.647		
48	47	8	25.0	--	--	--	48.9	6240.0	3806.4	0.77	1.00	0.800	0.800	0.299	--	NL	2.674		



Liquefaction Analysis Using SPT

- References
1. Youd, et al. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, *Journal of Geotechnical and Environmental Engineering*, October, 2001, Vol. 127, No. 10.
 2. Seed, et al. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, 2003.

Project Name: Ferry Landing Expansion
 Project Number: 06032-52-03
 Boring: B-2
 PGA_w: 0.496
 Magnitude: 6.64
 Groundwater Depth, Ft: 9.0
 Reference Pressure, p_a: 2000
 Unit Weight of Water: 62.4
 Soil Unit Weight, pcf: 130

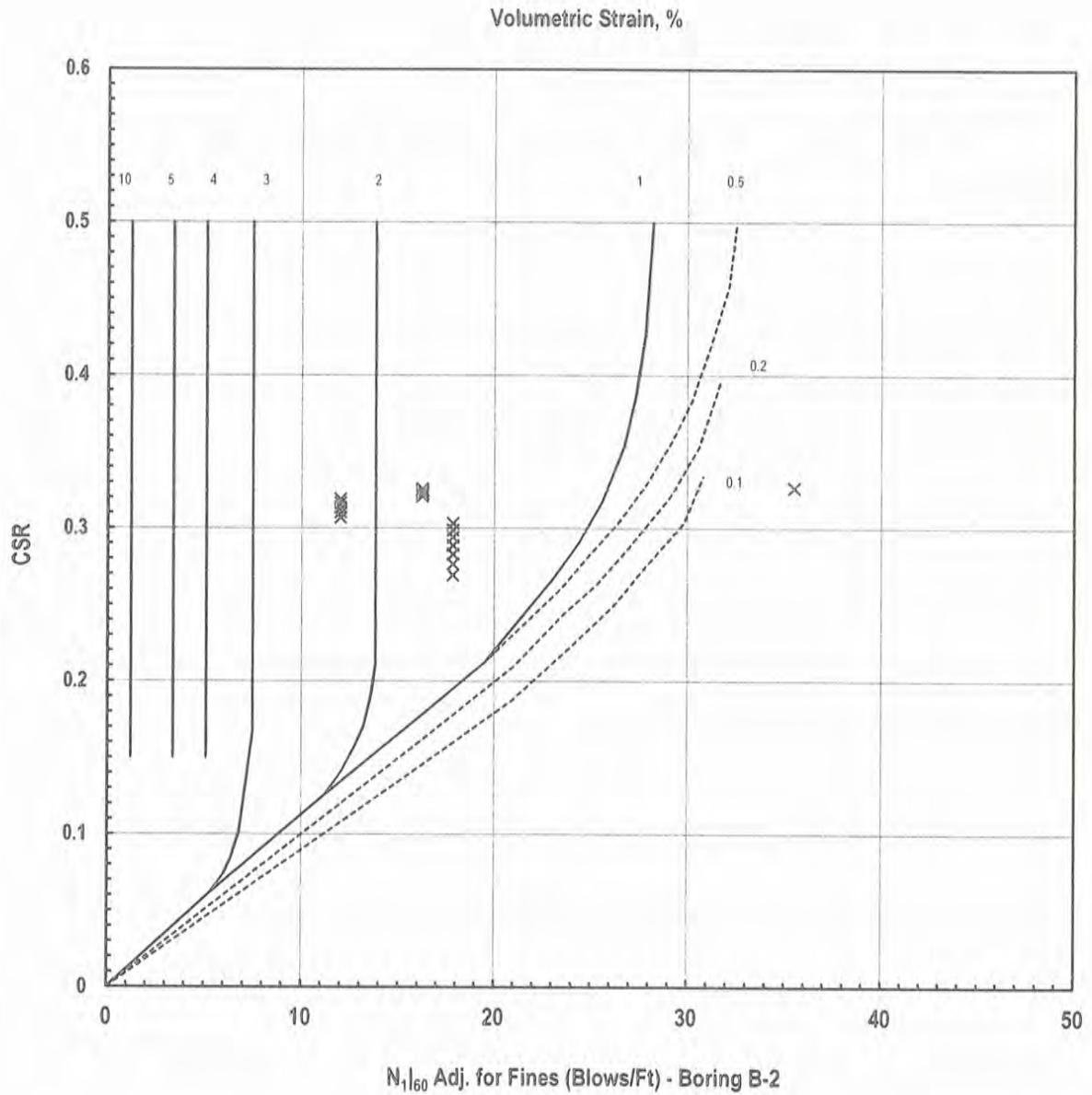
Include K_G (Y/N) N
 Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
 Minimum Factor of Safety for Liquefaction 1.1

Enter for Fine-Grained Materials From Graph

$$MMF_{driss}(1997) = (M')^{2.5} / 10^{2.24}$$

Depth, ft	N ₁₅₀	Fines Content, FC (%)	Water Content, w _c (%)	Liquid Limit	Plastic Limit	Plasticity Index	N ₁₅₀ Adj. for Fines	σ', psf	σ' p _s	r _d	K _c	NCEER CRR _{7.5}	RAUCH CRR _{7.5}	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
49	47	8	25.0	--	--	--	48.9	6370.0	3874.0	0.76	1.00	0.800	0.800	0.296	--	NL	2.702		
50	47	8	25.0	--	--	--	48.9	6500.0	3941.6	0.75	1.00	0.800	0.800	0.293	--	NL	2.731		
51	47	8	25.0	--	--	--	48.9	6630.0	4009.2	0.74	1.00	0.800	0.800	0.290	--	NL	2.760		

Total Settlement, S_{LD} (in.) = 3.972
 Total Liquefiable Layers = 18



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6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

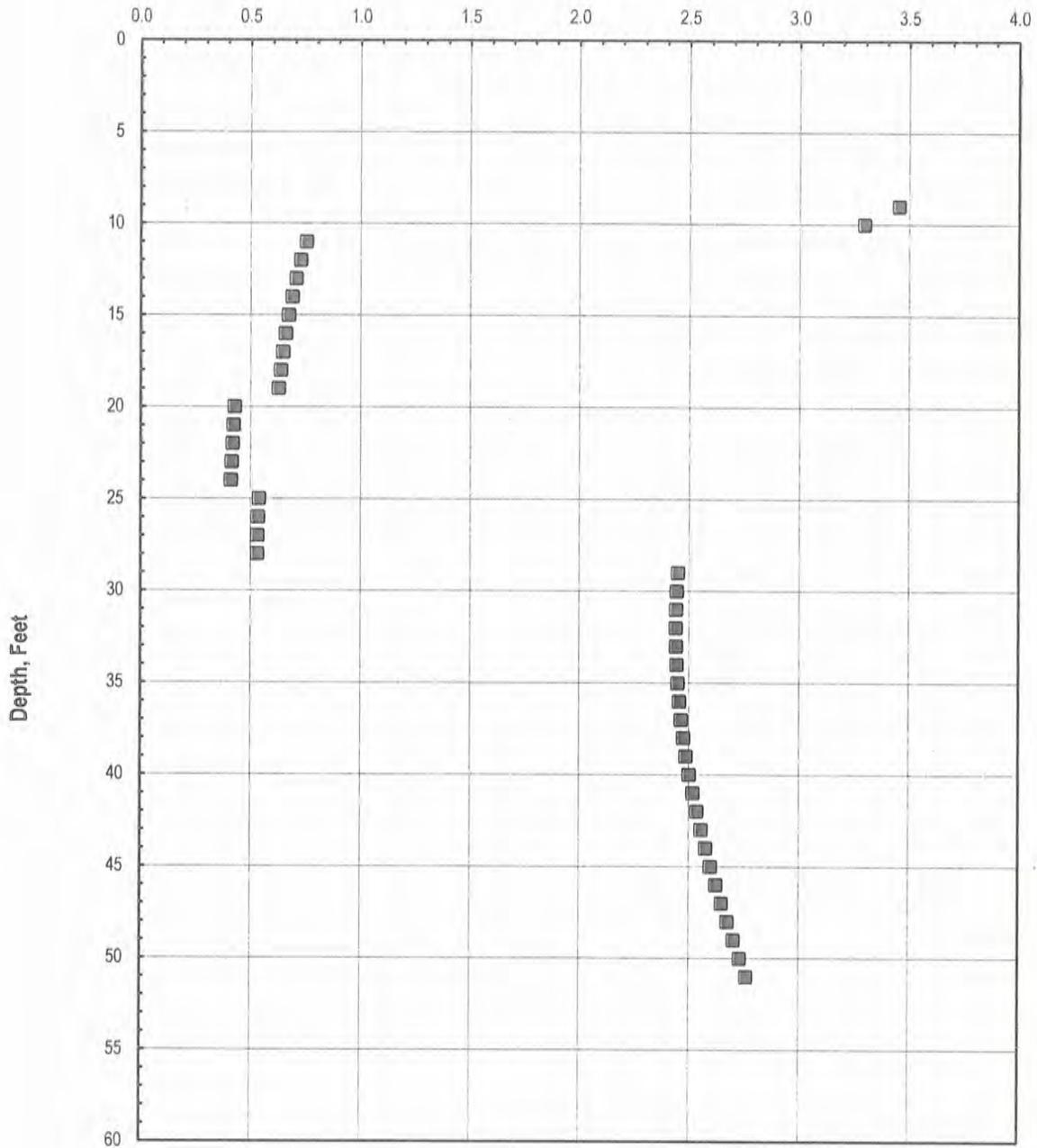
KJ / SW

LIQUEFACTION - VOLUMETRIC STRAIN

FERRY LANDING EXPANSION
CORONADO, CALIFORNIA

PROJECT NO. 06032-52-03

Factor of Safety - Boring B-2



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kj / SW		
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LIQUEFACTION - FACTOR OF SAFETY

FERRY LANDING EXPANSION
 CORONADO, CALIFORNIA

	PROJECT NO. 06032-52-03
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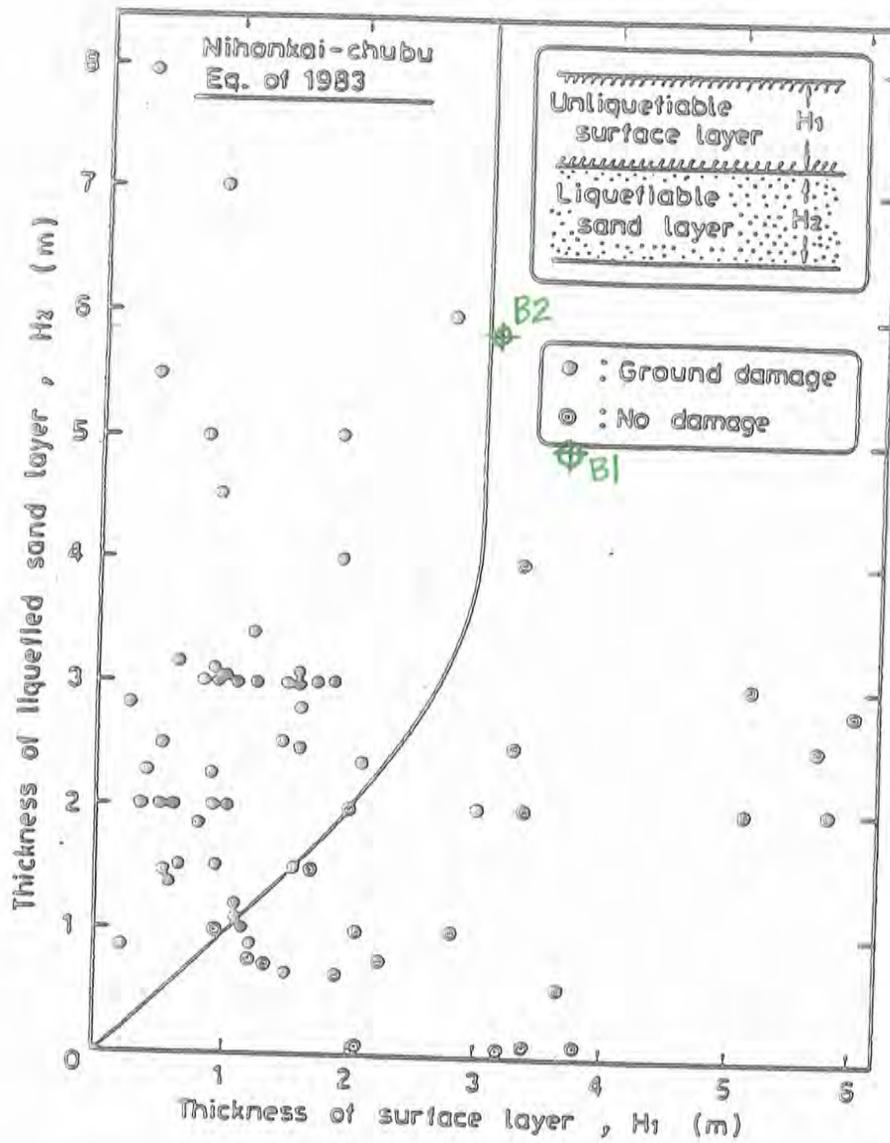
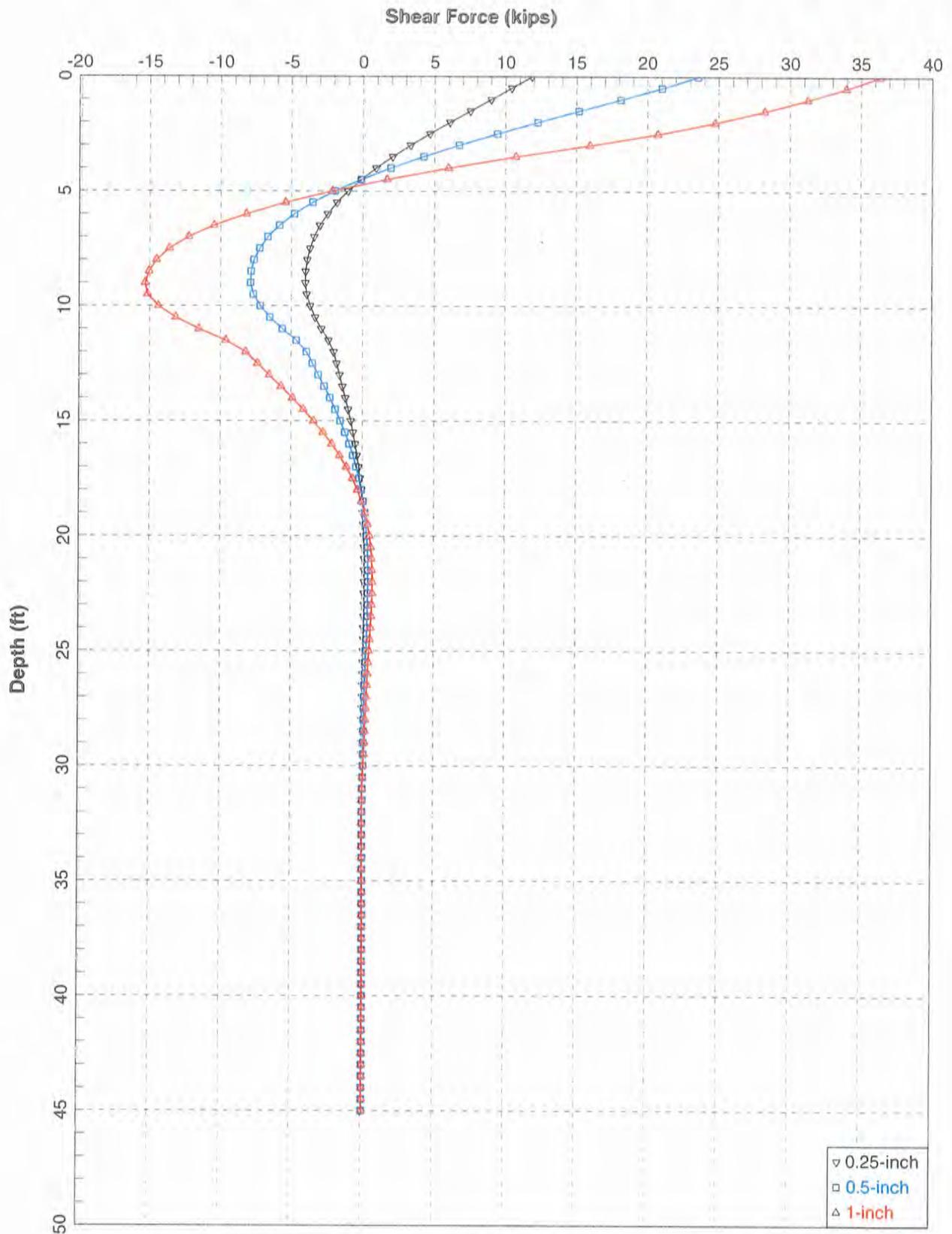


Fig.1 Conditions of subsurface soil stratification discriminating conditions causing or not causing ground rupturing due to liquefaction

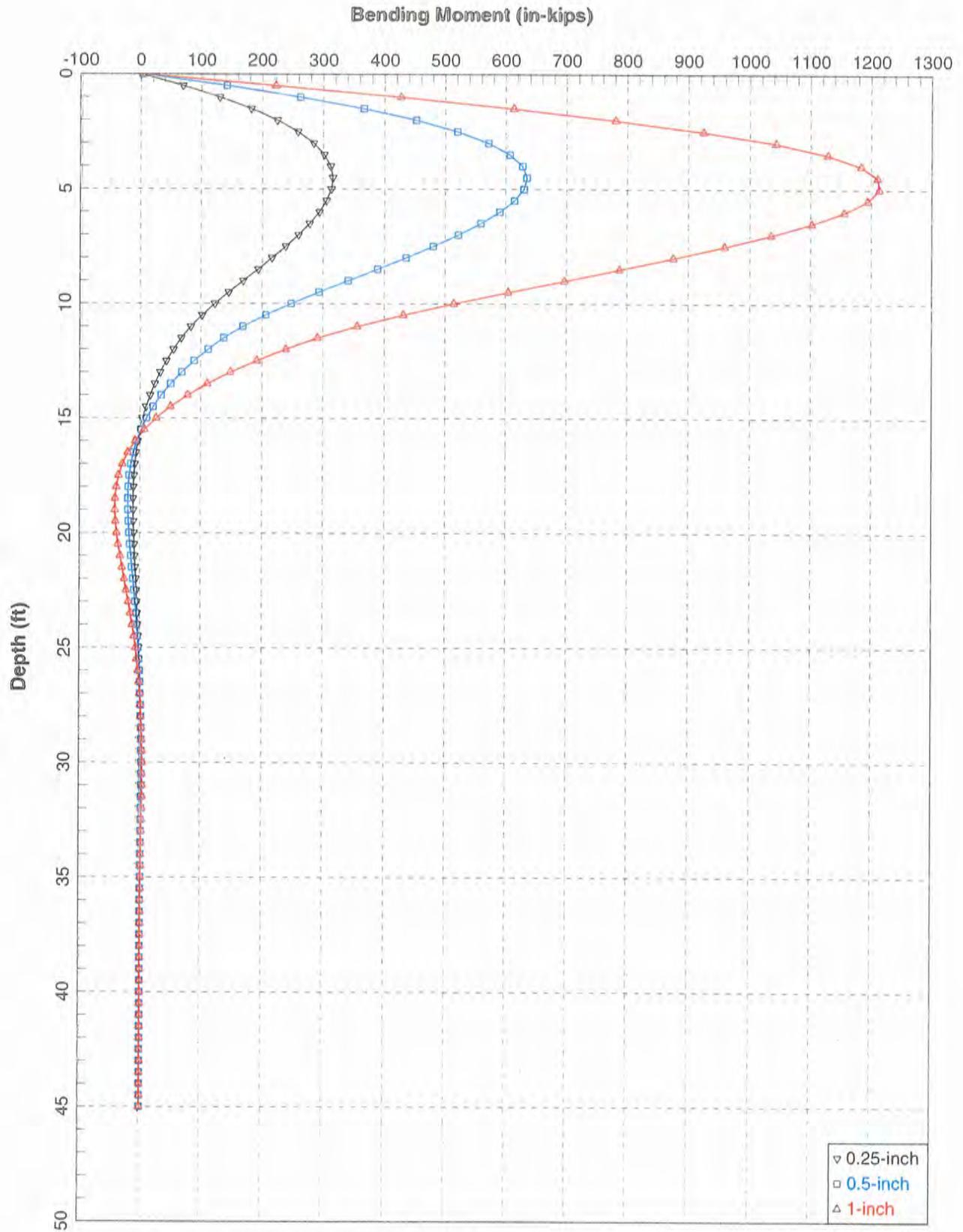
APPENDIX



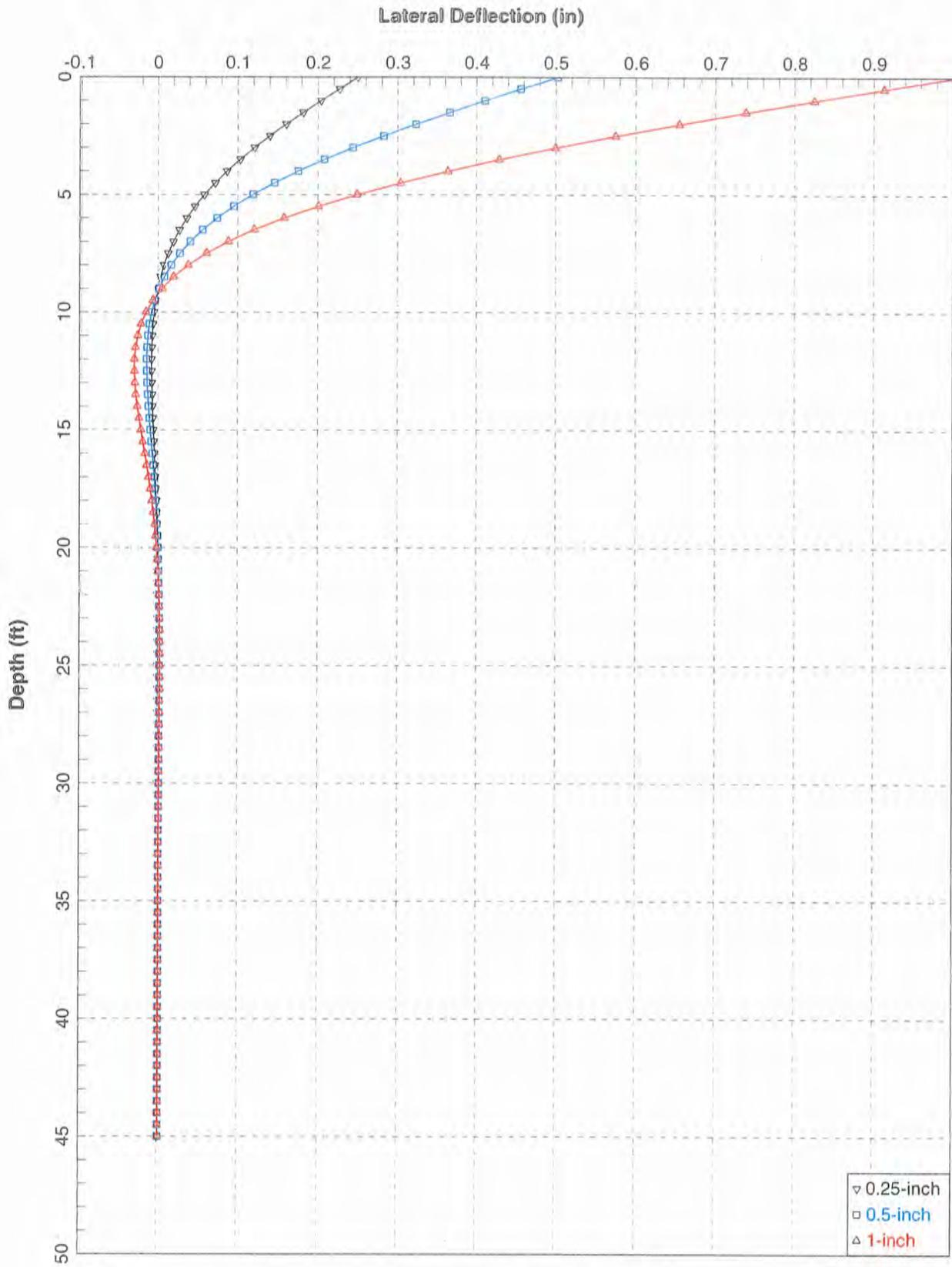
APPENDIX B
LATERAL PILE ANALYSES
FOR
FERRY LANDING EXPANSION
CORONADO, CALIFORNIA
PROJECT NO. 06032-52-03



Static Condition, 45 ft. long, 12-inch Square Driven Concrete Pile



Static Condition, 45 ft. long, 12-inch Square Driven Concrete Pile



Static Condition, 45 ft. long, 12-inch Square Driven Concrete Pile

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo

=====

LPILE Plus for windows, Version 5.0 (5.0.35)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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This program is licensed to:

Engineering Machine
Geocon, Inc.

Path to file locations: X:\Engineering and Geology\ENGINEER PROGRAMS, GUIDES,
ETC\EngrgPrg\LPile\06032-52-03\
Name of input data file: 06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpd
Name of output file: 06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo
Name of plot output file: 06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpp
Name of runtime file: 06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpr

Time and Date of Analysis

Date: March 21, 2016 Time: 14:22:24

Problem Title

Ferry Landing Expansion

Program Options

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:

- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:

- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:

- Number of pile increments = 90
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:

- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 540.00 in

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo
 Depth of ground surface below top of pile = -36.00 in

Slope angle of ground surface = .00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	13.50000000	1728.0000	144.0000	4415000.
2	540.0000	13.50000000	1728.0000	144.0000	4415000.

 Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is silt with cohesion and friction
 Distance from top of pile to top of layer = -36.000 in
 Distance from top of pile to bottom of layer = 108.000 in
 p-y subgrade modulus k for top of soil layer = 25.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 25.000 lbs/in**3

Layer 2 is silt with cohesion and friction
 Distance from top of pile to top of layer = 108.000 in
 Distance from top of pile to bottom of layer = 144.000 in
 p-y subgrade modulus k for top of soil layer = 60.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 60.000 lbs/in**3

Layer 3 is silt with cohesion and friction
 Distance from top of pile to top of layer = 144.000 in
 Distance from top of pile to bottom of layer = 360.000 in
 p-y subgrade modulus k for top of soil layer = 20.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 20.000 lbs/in**3

Layer 4 is silt with cohesion and friction
 Distance from top of pile to top of layer = 360.000 in
 Distance from top of pile to bottom of layer = 720.000 in
 p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

(Depth of lowest layer extends 180.00 in below pile tip)

 Effective Unit weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 8 points

Point No.	Depth X in	Eff. Unit weight lbs/in**3
1	-36.00	.06800
2	108.00	.06800
3	108.00	.03800
4	144.00	.03800
5	144.00	.03800
6	360.00	.03800
7	360.00	.03800
8	720.00	.03800

 Shear Strength of Soils

Shear strength parameters with depth defined using 8 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-36.000	1.39000	28.00	.00700	.0
2	108.000	1.39000	28.00	.00700	.0

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo					
3	108.000	1.39000	28.00	.00700	.0
4	144.000	1.39000	28.00	.00700	.0
5	144.000	1.04000	24.00	.02000	.0
6	360.000	1.04000	24.00	.02000	.0
7	360.000	2.08000	40.00	.00400	.0
8	720.000	2.08000	40.00	.00400	.0

Notes:

- (1) cohesion = uniaxial compressive strength for rock materials.
- (2) Values of E50 are reported for clay strata.
- (3) Default values will be generated for E50 when input values are 0.
- (4) RQD and k_{rm} are reported only for weak rock strata.

 Loading Type

static loading criteria was used for computation of p-y curves.

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 3

Load Case Number 1

Pile-head boundary conditions are Displacement and Moment (BC Type 4)

Deflection at pile head = .250 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

Load Case Number 2

Pile-head boundary conditions are Displacement and Moment (BC Type 4)

Deflection at pile head = .500 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

Load Case Number 3

Pile-head boundary conditions are Displacement and Moment (BC Type 4)

Deflection at pile head = 1.000 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

 Computed values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Displacement and Moment (BC Type 4)

Specified deflection at pile head = .250000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*H F/L lbs/in
0.000	.250000	0.0000	11828.6582	-.0038642	694.4444	-225.0000	2700.0000
6.000	.226815	69240.4561	10439.1912	-.0038370	964.9150	-238.1557	6300.0000
12.000	.203957	129875.	8990.4804	-.0037587	1201.7672	-244.7479	7200.0000
18.000	.181711	181637.	7520.3067	-.0036362	1403.9624	-245.3100	8100.0000
24.000	.160323	224482.	6062.9246	-.0034765	1571.3261	-240.4841	9000.0000
30.000	.139994	258563.	4648.5042	-.0032865	1704.4579	-230.9894	9900.0000
36.000	.120885	284208.	3302.7594	-.0030731	1804.6303	-217.5922	10800.0000
42.000	.103117	301884.	2046.7503	-.0028426	1873.6798	-201.0775	11700.0000
48.000	.086773	312180.	896.8463	-.0026011	1913.8964	-182.2239	12600.0000
54.000	.071903	315768.	-135.1704	-.0023542	1927.9123	-161.7817	13500.0000
60.000	.058523	313383.	-1041.8790	-.0021068	1918.5957	-140.4545	14400.0000

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo							
66.000	.046621	305793.	-1819.8951	-.0018633	1888.9499	-118.8842	15300.0000
72.000	.036163	293780.	-2469.4657	-.0016276	1842.0225	-97.6394	16200.0000
78.000	.027090	278113.	-2994.0076	-.0014027	1780.8229	-77.2079	17100.0000
84.000	.019331	259535.	-3399.6068	-.0011913	1708.2534	-57.9918	18000.0000
90.000	.012795	238747.	-3694.4989	-.0009953	1627.0504	-40.3055	18900.0000
96.000	.007387	216395.	-3888.5448	-.0008163	1539.7393	-24.3764	19800.0000
102.000	.002999	193064.	-3992.7169	-.0006553	1448.6014	-10.3476	20700.0000
108.000	-.000477	169269.	-4010.7822	-.0005128	1355.6526	4.3259	54395.0523
114.000	-.003155	145550.	-3908.5922	-.0003891	1263.0000	29.7375	56555.0523
120.000	-.005146	122833.	-3668.3119	-.0002835	1174.2610	50.3560	58715.0523
126.000	-.006557	101871.	-3317.6626	-.0001952	1092.3769	66.5272	60875.0523
132.000	-.007488	83255.2722	-2882.0882	-.0001224	1019.6604	78.6643	63035.0523
138.000	-.008025	67432.4726	-2384.4873	-6.3104E-05	957.8525	87.2027	65195.0523
144.000	-.008245	54717.1500	-2019.8636	-1.5071E-05	908.1833	34.3385	24988.8629
150.000	-.008206	43212.1952	-1811.3613	2.3437E-05	863.2421	35.1622	25708.8629
156.000	-.007964	32952.6899	-1600.6391	5.3388E-05	823.1659	35.0785	26428.8629
162.000	-.007566	23940.4601	-1392.7050	7.5760E-05	787.9619	34.2329	27148.8629
168.000	-.007055	16149.3177	-1191.7051	9.1524E-05	757.5277	32.7671	27868.8629
174.000	-.006467	9530.1693	-1000.9575	.0001016	731.6717	30.8155	28588.8629
180.000	-.005835	4015.8814	-823.0011	.0001069	710.1315	28.5033	29308.8629
186.000	-.005184	-474.1831	-659.6577	.0001083	696.2967	25.9445	30028.8629
192.000	-.004535	-4030.0210	-512.1013	.0001066	710.1867	23.2409	30748.8629
198.000	-.003905	-6747.2835	-380.9344	.0001023	720.8010	20.4814	31468.8629
204.000	-.003307	-8242.0334	-266.2662	9.6249E-05	728.5227	17.7414	32188.8629
210.000	-.002750	-10057.9765	-167.7909	8.8863E-05	733.7334	15.0837	32908.8629
216.000	-.002241	-10844.1606	-84.8649	8.0644E-05	736.8044	12.5583	33628.8629
222.000	-.001782	-11173.1274	-16.5789	7.1986E-05	738.0895	10.2037	34348.8629
228.000	-.001377	-11129.4901	38.1736	6.3216E-05	737.9190	8.0472	35068.8629
234.000	-.001024	-10790.9033	80.6348	5.4596E-05	736.5964	6.1066	35788.8629
240.000	-.000722	-10227.3877	112.1279	4.6331E-05	734.3952	4.3911	36508.8629
246.000	-.000468	-9500.9663	134.0089	3.8573E-05	731.5576	2.9026	37228.8629
252.000	-.000259	-8665.5691	147.6266	3.1430E-05	728.2943	1.6367	37948.8629
258.000	-9.06E-05	-7767.1625	154.2891	2.4968E-05	724.7849	.5841408	38668.8629
264.000	4.08E-05	-6844.0617	155.2371	1.9222E-05	721.1791	-.2681336	39388.8629
270.000	.000140	-5927.3842	151.6245	1.4200E-05	717.5983	-.9360742	40108.8629
276.000	.000211	-5041.6084	144.5038	9.8868E-06	714.1382	-1.4375	40828.8629
282.000	.000259	-4205.2031	134.8175	6.2507E-06	710.8710	-1.7913	41548.8629
288.000	.000286	-3431.2987	123.3939	3.2478E-06	707.8480	-2.0166	42268.8629
294.000	.000298	-2728.3731	110.9464	8.2563E-07	705.1022	-2.1326	42988.8629
300.000	.000296	-2100.9327	98.0762	-1.0734E-06	702.6512	-2.1575	43708.8629
306.000	.000285	-1550.1704	85.2779	-2.5091E-06	700.4998	-2.1086	44428.8629
312.000	.000266	-1074.5872	72.9460	-3.5413E-06	698.6421	-2.0020	45148.8629
318.000	.000242	-670.5688	61.3837	-4.2275E-06	697.0639	-1.8521	45868.8629
324.000	.000215	-332.9099	50.8116	-4.6221E-06	695.7449	-1.6719	46588.8629
330.000	.000187	-55.2837	41.3770	-4.7747E-06	694.6604	-1.4729	47308.8629
336.000	.000158	169.3435	33.1633	-4.7299E-06	695.1059	-1.2650	48028.8629
342.000	.000130	348.3520	26.1986	-4.5263E-06	695.8052	-1.0566	48748.8629
348.000	.000104	489.1587	20.4636	-4.1970E-06	696.3552	-.8550677	49468.8629
354.000	7.97E-05	598.9520	15.8989	-3.7691E-06	696.7841	-.6665247	50188.8629
360.000	5.85E-05	684.4679	8.2508	-3.2644E-06	697.1181	-1.8828	193176.
366.000	4.05E-05	701.8784	-1.4016	-2.7193E-06	697.1862	-1.3346	197676.
372.000	2.58E-05	670.9120	-8.0184	-2.1795E-06	697.0652	-.8710139	202176.
378.000	1.44E-05	608.2725	-12.1149	-1.6764E-06	696.8205	-.4944845	206676.
384.000	5.73E-06	527.5446	-14.2036	-1.2298E-06	696.5052	-.2017376	211176.
390.000	-4.02E-07	439.3051	-14.7654	-8.4961E-07	696.1605	.0144621	215676.
396.000	-4.46E-06	351.3790	-14.2307	-5.3869E-07	695.8170	.1637929	220176.
402.000	-6.87E-06	269.1836	-12.9679	-2.9467E-07	695.4959	.2571271	224676.
408.000	-8.00E-06	196.1178	-11.2799	-1.1169E-07	695.2105	.3055489	229176.
414.000	-8.21E-06	133.9591	-9.4043	1.8101E-08	694.9677	.3196280	233676.
420.000	-7.78E-06	83.2439	-7.5187	1.0351E-07	694.7696	.3089256	238176.
426.000	-6.96E-06	43.6107	-5.7468	1.5340E-07	694.6148	.2816986	242676.
432.000	-5.94E-06	14.0981	-4.1674	1.7609E-07	694.4995	.2447677	247176.
438.000	-4.85E-06	-6.6095	-2.8226	1.7903E-07	694.4703	.2035114	251676.
444.000	-3.79E-06	-19.9876	-1.7262	1.6857E-07	694.5225	.1619521	256176.
450.000	-2.83E-06	-27.5260	-.8716183	1.4989E-07	694.5520	.1229026	260676.
456.000	-1.99E-06	-30.6269	-.2384692	1.2702E-07	694.5641	.0881472	265176.
462.000	-1.30E-06	-30.5400	.2018797	1.0297E-07	694.5637	.0586358	269676.
468.000	-7.59E-07	-28.3279	.4818119	7.9821E-08	694.5551	.0346749	274176.
474.000	-3.47E-07	-24.8541	.6341487	5.8909E-08	694.5415	.0161040	278676.
480.000	-5.19E-08	-20.7888	.6898109	4.0961E-08	694.5257	.0024501	283176.
486.000	1.45E-07	-16.6255	.6763331	2.6248E-08	694.5094	-.0069427	287676.
492.000	2.63E-07	-12.7043	.6170745	1.4715E-08	694.4941	-.0128102	292176.
498.000	3.21E-07	-9.2383	.5309712	6.0863E-09	694.4805	-.0158909	296676.
504.000	3.36E-07	-6.3399	.4326858	-3.9534E-11	694.4692	-.0168709	301176.
510.000	3.21E-07	-4.0460	.3330268	-4.1236E-09	694.4602	-.0163488	305676.
516.000	2.87E-07	-2.3387	.2395295	-6.6342E-09	694.4536	-.0148170	310176.
522.000	2.41E-07	-1.1637	.1571139	-8.0114E-09	694.4490	-.0126549	314676.
528.000	1.90E-07	-.4436833	.0887510	-8.6435E-09	694.4462	-.0101328	319176.
534.000	1.38E-07	-.0882764	.0360883	-8.8527E-09	694.4448	-.0074214	323676.

540.000 8.42E-08 06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo
 0.0000 0.0000 -8.8874E-09 694.4444 -.0046080 164088.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

Pile-head deflection = .25000000 in
 Computed slope at pile head = -.00386418
 Maximum bending moment = 315767.77968 lbs-in
 Maximum shear force = 11828.65818 lbs
 Depth of maximum bending moment = 54.00000000 in
 Depth of maximum shear force = 0.000000 in
 Number of iterations = 5
 Number of zero deflection points = 4

 Computed Values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Specified deflection at pile head = .500000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	.500000	0.0000	23435.4045	-.0077284	694.4444	-376.0294	2256.1763
6.000	.453630	138481.	20878.3823	-.0076739	1235.3855	-476.3114	6300.0000
12.000	.407913	259749.	17980.9608	-.0075173	1709.0900	-489.4958	7200.0000
18.000	.363422	363273.	15040.6135	-.0072723	2113.4804	-490.6200	8100.0000
24.000	.320645	448963.	12125.8493	-.0069529	2448.2078	-480.9681	9000.0000
30.000	.279987	517127.	9297.0085	-.0065730	2714.4714	-461.9788	9900.0000
36.000	.241769	568415.	6605.5187	-.0061462	2914.8161	-435.1844	10800.0000
42.000	.206233	603769.	4093.5005	-.0056852	3052.9152	-402.1550	11700.0000
48.000	.173547	624359.	1793.6925	-.0052023	3133.3484	-364.4477	12600.0000
54.000	.143806	631536.	-270.3408	-.0047084	3161.3802	-323.5634	13500.0000
60.000	.117045	626765.	-2083.7581	-.0042136	3142.7469	-280.9091	14400.0000
66.000	.093242	611587.	-3639.7902	-.0037267	3083.4554	-237.7683	15300.0000
72.000	.072325	587560.	-4938.9314	-.0032551	2989.6005	-195.2787	16200.0000
78.000	.054181	556226.	-5988.0151	-.0028054	2867.2014	-154.4158	17100.0000
84.000	.038661	519070.	-6799.2136	-.0023825	2722.0623	-115.9837	18000.0000
90.000	.025591	477494.	-7388.9978	-.0019906	2559.6563	-80.6111	18900.0000
96.000	.014774	432791.	-7777.0896	-.0016327	2385.0342	-48.7529	19800.0000
102.000	.005999	386128.	-7985.4339	-.0013107	2202.7584	-20.6952	20700.0000
108.000	-.000954	338539.	-8021.5644	-.0010257	2016.8607	8.6517	54395.0523
114.000	-.006310	291100.	-7817.1844	-.0007781	1831.5556	59.4749	56555.0523
120.000	-.010292	245666.	-7336.6239	-.0005670	1654.0775	100.7119	58715.0523
126.000	-.013114	203741.	-6635.3252	-.0003903	1490.3093	133.0543	60875.0523
132.000	-.014975	166511.	-5764.1765	-.0002447	1344.8763	157.3286	63035.0523
138.000	-.016051	134865.	-4768.9745	-.0001262	1221.2606	174.4054	65195.0523
144.000	-.016490	109434.	-4039.7272	-3.0143E-05	1121.9222	68.6771	24988.8629
150.000	-.016413	86424.3903	-3622.7225	4.6875E-05	1032.0397	70.3245	25708.8629
156.000	-.015927	65905.3799	-3201.2783	.0001068	951.8873	70.1569	26428.8629
162.000	-.015131	47880.9202	-2785.4101	.0001515	881.4793	68.4658	27148.8629
168.000	-.014109	32298.6355	-2383.4102	.0001830	820.6110	65.5341	27868.8629
174.000	-.012935	19060.3387	-2001.9149	.0002032	768.8989	61.6310	28588.8629
180.000	-.011670	8031.7628	-1646.0023	.0002139	725.8185	57.0066	29308.8629
186.000	-.010368	-948.3662	-1319.3154	.0002167	698.1490	51.8890	30028.8629
192.000	-.009070	-8060.0421	-1024.2026	.0002131	725.9290	46.4819	30748.8629
198.000	-.007810	-13494.5670	-761.8689	.0002047	747.1576	40.9627	31468.8629
204.000	-.006614	-17448.0668	-532.5324	.0001925	762.6010	35.4828	32188.8629
210.000	-.005500	-20115.9529	-335.5819	.0001777	773.0224	30.1674	32908.8629
216.000	-.004481	-21688.3211	-169.7297	.0001613	779.1644	25.1167	33628.8629
222.000	-.003565	-22346.2548	-33.1577	.0001440	781.7345	20.4073	34348.8629
228.000	-.002754	-22258.9801	76.3472	.0001264	781.3936	16.0943	35068.8629
234.000	-.002048	-21581.8066	161.2696	.0001092	778.7484	12.2132	35788.8629
240.000	-.001443	-20454.7755	224.2557	9.2662E-05	774.3459	8.7822	36508.8629
246.000	-.000936	-19001.9327	268.0178	7.7147E-05	768.6707	5.8051	37228.8629
252.000	-.000518	-17331.1381	295.2532	6.2859E-05	762.1442	3.2733	37948.8629
258.000	-.000181	-15534.3250	308.5781	4.9936E-05	755.1254	1.1683	38668.8629

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo							
264.000	8.17E-05	-13688.1234	310.4742	3.8445E-05	747.9137	-.5362671	39388.8629
270.000	.000280	-11854.7684	303.2489	2.8400E-05	740.7521	-1.8721	40108.8629
276.000	.000422	-10083.2167	289.0075	1.9774E-05	733.8320	-2.8750	40828.8629
282.000	.000517	-8410.4063	269.6351	1.2501E-05	727.2976	-3.5825	41548.8629
288.000	.000573	-6862.5975	246.7879	6.4956E-06	721.2515	-4.0332	42268.8629
294.000	.000595	-5456.7462	221.8928	1.6513E-06	715.7599	-4.2651	42988.8629
300.000	.000592	-4201.8654	196.1524	-2.1468E-06	710.8580	-4.3150	43708.8629
306.000	.000570	-3100.3407	170.5558	-5.0182E-06	706.5552	-4.2173	44428.8629
312.000	.000532	-2149.1744	145.8920	-7.0825E-06	702.8397	-4.0040	45148.8629
318.000	.000485	-1341.1377	122.7674	-8.4550E-06	699.6833	-3.7042	45868.8629
324.000	.000431	-665.8198	101.6231	-9.2442E-06	697.0453	-3.3439	46588.8629
330.000	.000374	-110.5674	82.7540	-9.5495E-06	694.8763	-2.9458	47308.8629
336.000	.000316	338.6870	66.3266	-9.4598E-06	695.7674	-2.5299	48028.8629
342.000	.000260	696.7041	52.3973	-9.0526E-06	697.1659	-2.1132	48748.8629
348.000	.000207	978.3173	40.9273	-8.3940E-06	698.2660	-1.7101	49468.8629
354.000	.000159	1197.9040	31.7977	-7.5382E-06	699.1238	-1.3330	50188.8629
360.000	.000117	1368.9357	16.5015	-6.5289E-06	699.7918	-3.7657	193176.
366.000	8.10E-05	1403.7569	-2.8032	-5.4386E-06	699.9279	-2.6692	197676.
372.000	5.17E-05	1341.8241	-16.0369	-4.3589E-06	699.6859	-1.7420	202176.
378.000	2.87E-05	1216.5451	-24.2299	-3.3529E-06	699.1966	-.9889691	206676.
384.000	1.15E-05	1055.0891	-28.4072	-2.4596E-06	698.5659	-.4034751	211176.
390.000	-8.05E-07	878.6102	-29.5309	-1.6992E-06	697.8765	.0289242	215676.
396.000	-8.93E-06	702.7579	-28.4613	-1.0774E-06	697.1896	.3275858	220176.
402.000	-1.37E-05	538.3672	-25.9358	-5.8933E-07	696.5474	.5142543	224676.
408.000	-1.60E-05	392.2355	-22.5597	-2.2339E-07	695.9766	.6110978	229176.
414.000	-1.64E-05	267.9183	-18.8087	-3.6202E-08	695.4910	.6392560	233676.
420.000	-1.56E-05	166.4878	-15.0374	2.0702E-07	695.0948	.6178511	238176.
426.000	-1.39E-05	87.2215	-11.4936	3.0679E-07	694.7852	.5633972	242676.
432.000	-1.19E-05	28.1963	-8.3348	3.5218E-07	694.5546	.4895354	247176.
438.000	-9.70E-06	-13.2190	-5.6451	3.5807E-07	694.4961	.4070229	251676.
444.000	-7.59E-06	-39.9752	-3.4524	3.3715E-07	694.6006	.3239042	256176.
450.000	-5.66E-06	-55.0519	-1.7432	2.9978E-07	694.6595	.2458051	260676.
456.000	-3.99E-06	-61.2537	-.4769383	2.5405E-07	694.6837	.1762943	265176.
462.000	-2.61E-06	-61.0801	.4037594	2.0594E-07	694.6830	.1172716	269676.
468.000	-1.52E-06	-56.6558	.9636239	1.5964E-07	694.6658	.0693499	274176.
474.000	-6.93E-07	-49.7081	1.2683	1.1782E-07	694.6386	.0322080	278676.
480.000	-1.04E-07	-41.5776	1.3796	8.1921E-08	694.6069	.0049002	283176.
486.000	2.90E-07	-33.2510	1.3527	5.2496E-08	694.5743	-.0138853	287676.
492.000	5.26E-07	-25.4086	1.2341	2.9429E-08	694.5437	-.0256204	292176.
498.000	6.43E-07	-18.4765	1.0619	1.2173E-08	694.5166	-.0317818	296676.
504.000	6.72E-07	-12.6799	.8653717	-7.9068E-11	694.4940	-.0337418	301176.
510.000	6.42E-07	-8.0919	.6660535	-8.2472E-09	694.4761	-.0326976	305676.
516.000	5.73E-07	-4.6773	.4790590	-1.3268E-08	694.4627	-.0296339	310176.
522.000	4.83E-07	-2.3273	.3142278	-1.6023E-08	694.4535	-.0253098	314676.
528.000	3.81E-07	-.8873666	.1775019	-1.7287E-08	694.4479	-.0202655	319176.
534.000	2.75E-07	-.1765528	.0721767	-1.7705E-08	694.4451	-.0148429	323676.
540.000	1.68E-07	0.0000	0.0000	-1.7775E-08	694.4444	-.0092160	164088.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

Pile-head deflection = .50000000 in
 Computed slope at pile head = -.00772836
 Maximum bending moment = 631535.55936 lbs-in
 Maximum shear force = 23435.40449 lbs
 Depth of maximum bending moment = 54.00000000 in
 Depth of maximum shear force = 0.00000 in
 Number of iterations = 5
 Number of zero deflection points = 4

 Computed values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 3

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Specified deflection at pile head = 1.000000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth X	Deflect. y	Moment M	Shear V	Slope S	Total Stress	Soil Res. p	Es*h F/L
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06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo							
in	in	lbs-in	lbs	Rad.	lbs/in**2	lbs/in	lbs/in
0.000	1.000000	0.0000	36184.2865	-.0149125	694.4444	-373.1575	1119.4726
6.000	.910525	219336.	33802.4250	-.0148262	1551.2271	-420.7963	2772.8810
12.000	.822085	423421.	31099.5930	-.0145735	2348.4311	-480.1477	3504.3643
18.000	.735643	610020.	28050.2280	-.0141671	3077.3337	-536.3073	4374.1898
24.000	.652080	777024.	24580.6365	-.0136217	3729.6938	-620.2232	5706.8749
30.000	.572183	921333.	20591.4970	-.0129538	4293.4027	-709.4899	7439.8176
36.000	.496634	1039666.	15781.2029	-.0121827	4755.6413	-893.9415	10800.0000
42.000	.425991	1125327.	10607.3318	-.0113314	5090.2530	-830.6823	11700.0000
48.000	.360658	1180552.	5843.1409	-.0104246	5305.9757	-757.3814	12600.0000
54.000	.300895	1207954.	1539.9523	-.0094854	5413.0156	-677.0148	13500.0000
60.000	.246833	1210414.	-2268.2907	-.0085344	5422.6237	-592.3996	14400.0000
66.000	.198483	1190976.	-5563.8806	-.0075901	5346.6945	-506.1304	15300.0000
72.000	.155752	1152755.	-8343.8614	-.0066685	5197.3955	-420.5298	16200.0000
78.000	.118461	1098852.	-10618.2895	-.0057831	4986.8346	-337.6129	17100.0000
84.000	.086355	1032276.	-12408.3209	-.0049451	4726.7714	-259.0642	18000.0000
90.000	.059120	955886.	-13744.1966	-.0041633	4428.3745	-186.2277	18900.0000
96.000	.036396	872341.	-14663.1964	-.0034443	4102.0274	-120.1056	19800.0000
102.000	.017788	784061.	-15207.6165	-.0027930	3757.1825	-61.3678	20700.0000
108.000	.002880	693201.	-15470.0397	-.0022121	3402.2626	-26.1066	54395.0523
114.000	-.008757	601075.	-15300.7230	-.0017031	3042.3936	82.5455	56555.0523
120.000	-.017558	511637.	-14537.6250	-.0012656	2693.0247	171.8205	58715.0523
126.000	-.023944	428142.	-13293.3529	-.0008960	2366.8749	242.9369	60875.0523
132.000	-.028311	353192.	-11672.2623	-.0005888	2074.0990	297.4266	63035.0523
138.000	-.031010	288782.	-9769.1307	-.0003364	1822.4976	336.9506	65195.0523
144.000	-.032347	236366.	-8354.1232	-.0001299	1617.7476	134.7186	24988.8629
150.000	-.032568	188688.	-7531.3203	3.7291E-05	1431.5068	139.5490	25708.8629
156.000	-.031899	145945.	-6691.1411	.0001689	1264.5422	140.5107	26428.8629
162.000	-.030542	108192.	-5855.0219	.0002688	1117.0679	138.1957	27148.8629
168.000	-.028674	75362.1880	-5040.8842	.0003410	988.8280	133.1835	27868.8629
174.000	-.026450	47291.8105	-4263.2479	.0003892	879.1781	126.0286	28588.8629
180.000	-.024003	23736.1458	-3533.4127	.0004172	787.1638	117.2498	29308.8629
186.000	-.021444	4390.2742	-2859.6935	.0004282	711.5940	107.3232	30028.8629
192.000	-.018864	-11094.0322	-2247.6946	.0004256	737.7805	96.6764	30748.8629
198.000	-.016337	-23092.7545	-1700.6108	.0004121	784.6505	85.6849	31468.8629
204.000	-.013919	-31995.9226	-1219.5414	.0003905	819.4285	74.6715	32188.8629
210.000	-.011651	-38195.8169	-803.8091	.0003629	843.6469	63.9059	32908.8629
216.000	-.009564	-42077.0764	-451.2729	.0003313	858.8080	53.6062	33628.8629
222.000	-.007676	-44008.6568	-158.6272	.0002975	866.3533	43.9423	34348.8629
228.000	-.005995	-44337.5463	78.3168	.0002627	867.6380	35.0390	35068.8629
234.000	-.004523	-43384.1107	264.3742	.0002282	863.9136	26.9802	35788.8629
240.000	-.003256	-41438.9177	404.7560	.0001949	856.3152	19.8138	36508.8629
246.000	-.002185	-38760.8737	504.8675	.0001633	845.8541	13.5567	37228.8629
252.000	-.001296	-35576.4988	570.1353	.0001341	833.4151	8.1992	37948.8629
258.000	-.000576	-32080.1633	605.8646	.0001075	819.7576	3.7105	38668.8629
264.000	-6.49E-06	-28435.1116	617.1239	8.3693E-05	805.5191	.0425924	39388.8629
270.000	.000429	-24775.1088	608.6567	6.2769E-05	791.2222	-2.8650	40108.8629
276.000	.000747	-21206.5546	584.8174	4.4688E-05	777.2825	-5.0814	40828.8629
282.000	.000965	-17810.9256	549.5291	2.9345E-05	764.0184	-6.6813	41548.8629
288.000	.001099	-14647.4191	506.2609	1.6581E-05	751.6609	-7.7414	42268.8629
294.000	.001164	-11755.6921	458.0212	6.1989E-06	740.3651	-8.3385	42988.8629
300.000	.001173	-9158.6040	407.3645	-2.0252E-06	730.2202	-8.5471	43708.8629
306.000	.001140	-6864.8880	356.4098	-8.3261E-06	721.2604	-8.4379	44428.8629
312.000	.001073	-4871.6956	306.8657	-1.2941E-05	713.4745	-8.0768	45148.8629
318.000	.000984	-3166.9695	260.0629	-1.6102E-05	706.8154	-7.5241	45868.8629
324.000	.000880	-1731.6180	216.9884	-1.8029E-05	701.2086	-6.8340	46588.8629
330.000	.000768	-541.4745	178.3227	-1.8922E-05	696.5596	-6.0545	47308.8629
336.000	.000653	430.9616	144.4763	-1.8966E-05	696.1279	-5.2276	48028.8629
342.000	.000540	1215.0002	115.6244	-1.8319E-05	699.1905	-4.3897	48748.8629
348.000	.000433	1840.4371	91.7396	-1.7117E-05	701.6337	-3.5719	49468.8629
354.000	.000335	2336.4156	72.6203	-1.5475E-05	703.5711	-2.8012	50188.8629
360.000	.000248	2730.4499	40.3075	-1.3482E-05	705.1103	-7.9698	193176.
366.000	.000173	2836.2844	-.7093675	-1.1293E-05	705.5237	-5.7025	197676.
372.000	.000112	2735.4895	-29.1408	-9.1023E-06	705.1300	-3.7746	202176.
378.000	6.39E-05	2497.5181	-47.0637	-7.0445E-06	704.2004	-2.1997	206676.
384.000	2.75E-05	2179.1788	-56.5649	-5.2055E-06	702.9569	-.9673609	211176.
390.000	1.39E-06	1824.9862	-59.6172	-3.6309E-06	701.5733	-.0500900	215676.
396.000	-1.61E-05	1468.1292	-57.9966	-2.3360E-06	700.1793	.5903036	220176.
402.000	-2.66E-05	1131.8304	-53.2332	-1.3136E-06	698.8657	.9974997	224676.
408.000	-3.18E-05	830.9075	-46.5911	-5.4179E-07	697.6902	1.2165	229176.
414.000	-3.31E-05	573.3874	-39.0695	1.0419E-08	696.6842	1.2907	233676.
420.000	-3.17E-05	362.0606	-31.4195	3.7827E-07	695.8587	1.2593	238176.
426.000	-2.86E-05	195.8991	-24.1712	5.9767E-07	695.2097	1.1568	242676.
432.000	-2.46E-05	71.2893	-17.6664	7.0274E-07	694.7229	1.0115	247176.
438.000	-2.02E-05	-16.9415	-12.0942	7.2411E-07	694.5106	.8459576	251676.
444.000	-1.59E-05	-74.7098	-7.5244	6.8807E-07	694.7363	.6772901	256176.
450.000	-1.19E-05	-108.0605	-3.9401	6.1620E-07	694.8666	.5174820	260676.
456.000	-8.47E-06	-122.7308	-1.2648	5.2545E-07	694.9239	.3742817	265176.

06063-52-03-Ferry Landing Expansion-STATIC 45ft.lpo

462.000	-5.61E-06	-123.8690	.6138545	4.2847E-07	694.9283	.2519481	269676.
468.000	-3.33E-06	-115.8787	1.8258	3.3420E-07	694.8971	.1520295	274176.
474.000	-1.60E-06	-102.3606	2.5041	2.4838E-07	694.8443	.0740899	278676.
480.000	-3.46E-07	-86.1270	2.7755	1.7426E-07	694.7809	.0163490	283176.
486.000	4.96E-07	-69.2642	2.7532	1.1316E-07	694.7150	-.0237791	287676.
492.000	1.01E-06	-53.2248	2.5341	6.4990E-08	694.6524	-.0492548	292176.
498.000	1.28E-06	-38.9334	2.1970	2.8751E-08	694.5965	-.0630853	296676.
504.000	1.36E-06	-26.8947	1.8035	2.8655E-09	694.5495	-.0680903	301176.
510.000	1.31E-06	-17.2945	1.3990	-1.4511E-08	694.5120	-.0667509	305676.
516.000	1.18E-06	-10.0893	1.0154	-2.5279E-08	694.4839	-.0611231	310176.
522.000	1.01E-06	-5.0797	.6735875	-3.1244E-08	694.4643	-.0528067	314676.
528.000	8.07E-07	-1.9687	.3863115	-3.4016E-08	694.4521	-.0429520	319176.
534.000	5.99E-07	-.4031086	.1605648	-3.4948E-08	694.4460	-.0322969	323676.
540.000	3.88E-07	0.0000	0.0000	-3.5107E-08	694.4444	-.0212247	164088.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

Pile-head deflection = 1.00000000 in
 Computed slope at pile head = -.01491248
 Maximum bending moment = 1210414. lbs-in
 Maximum shear force = 36184.28652 lbs
 Depth of maximum bending moment = 60.00000000 in
 Depth of maximum shear force = 0.000000 in
 Number of iterations = 5
 Number of zero deflection points = 4

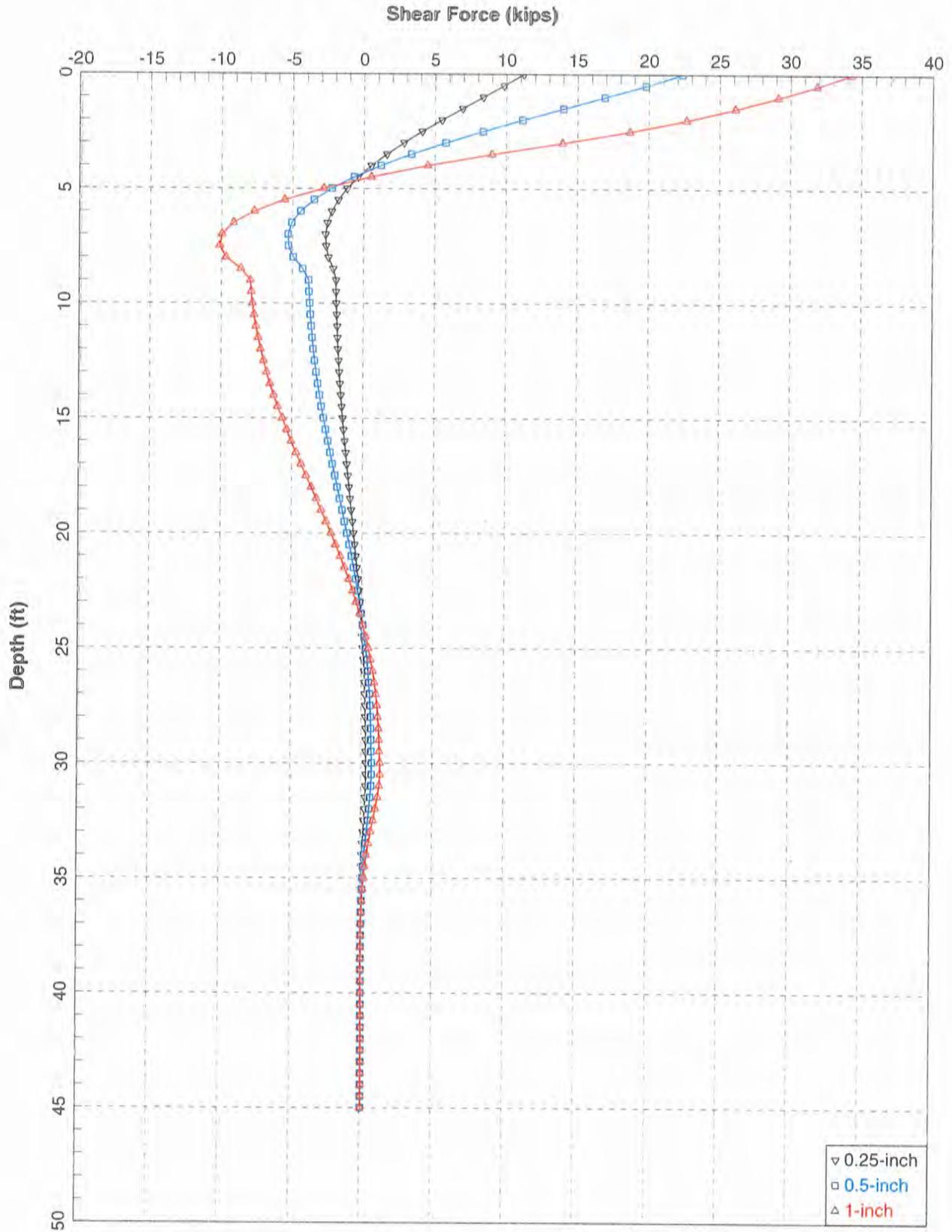
 Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

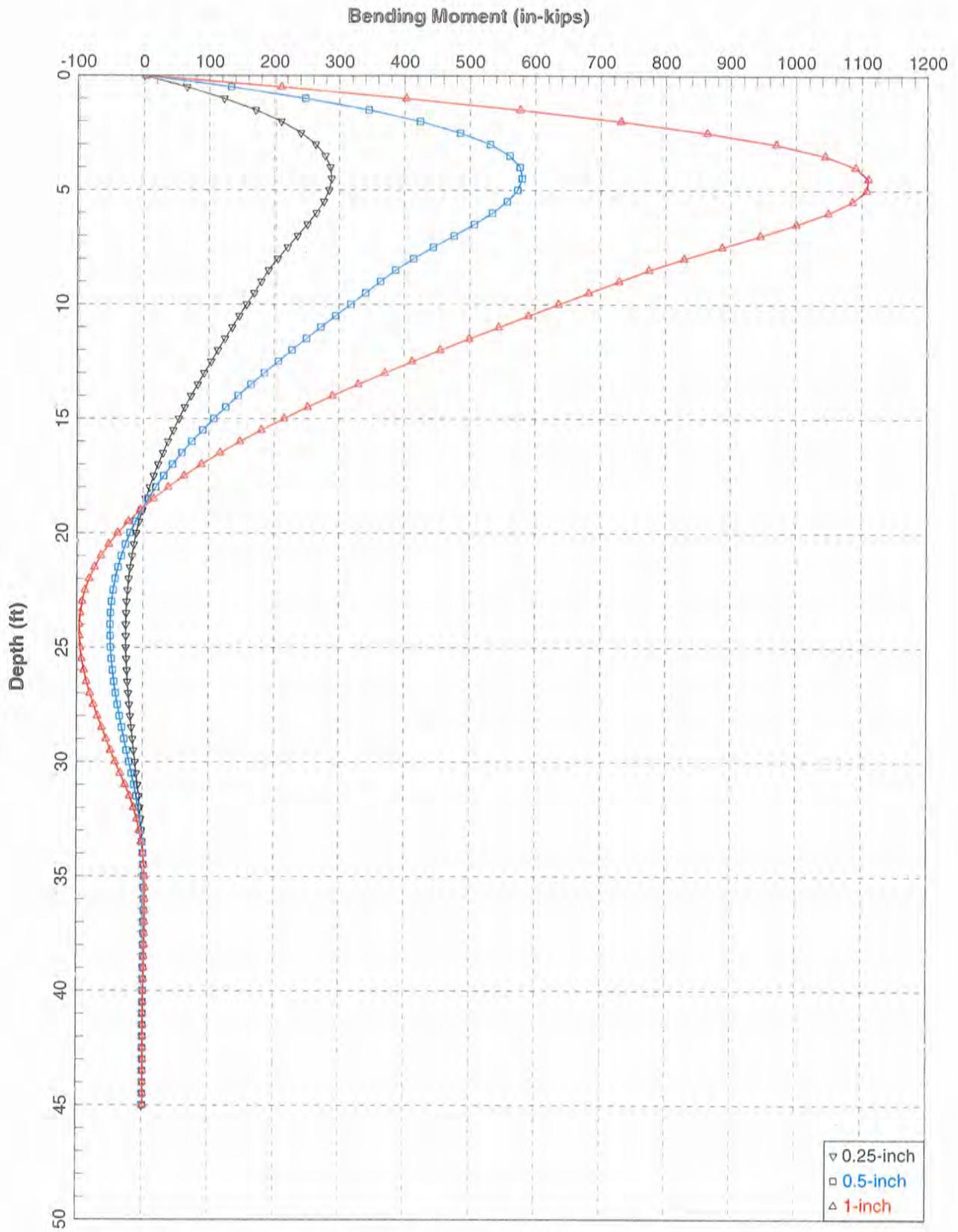
Type 1 = Shear and Moment, y = pile-head displacement in
 Type 2 = Shear and Slope, M = Pile-head Moment lbs-in
 Type 3 = Shear and Rot. Stiffness, V = Pile-head Shear Force lbs
 Type 4 = Deflection and Moment, S = Pile-head Slope, radians
 Type 5 = Deflection and Slope, R = Rot. Stiffness of Pile-head in-lbs/rad

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
4	y= .250000	M= 0.000	100000.0000	.2500000	315768.	11828.6582
4	y= .500000	M= 0.000	100000.0000	.5000000	631536.	23435.4045
4	y= 1.000000	M= 0.000	100000.0000	1.0000000	1210414.	36184.2865

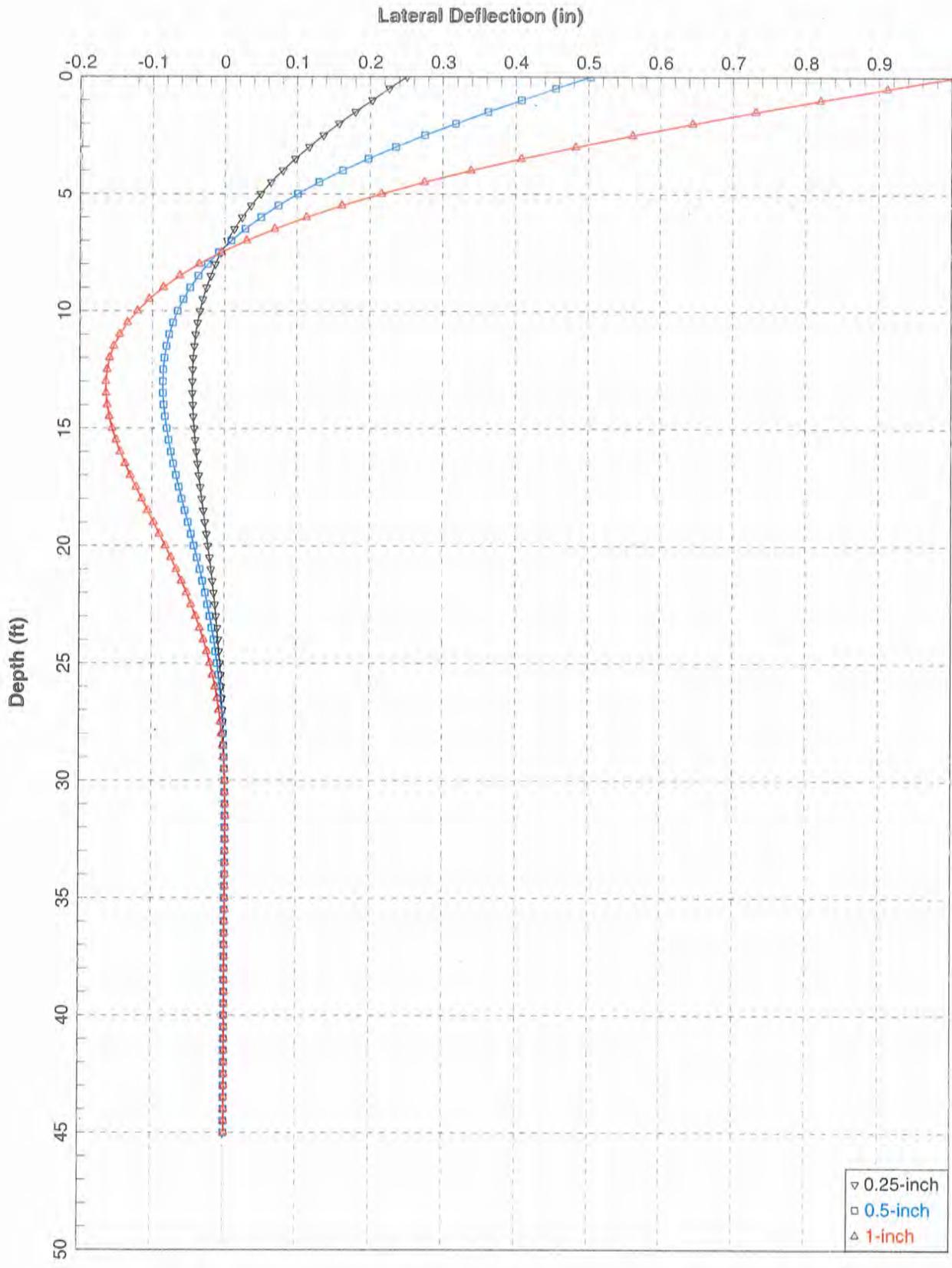
The analysis ended normally.



Seismic (Liquefied) Condition, 45 ft. long, 12-inch Square Driven Concrete Pile



Seismic (Liquefied) Condition, 45 ft. long, 12-inch Square Driven Concrete Pile



Seismic (Liquefied) Condition, 45 ft. long, 12-inch Square Driven Concrete Pile

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo

LPILE Plus for windows, Version 5.0 (5.0.35)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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This program is licensed to:

Engineering Machine
Geocon, Inc.

Path to file locations: X:\Engineering and Geology\ENGINEER PROGRAMS, GUIDES,
ETC\EngrgPrg\LPile\06032-52-03\
Name of input data file: 06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpd
Name of output file: 06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo
Name of plot output file: 06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpp
Name of runtime file: 06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpr

Time and Date of Analysis

Date: March 21, 2016 Time: 14:24:46

Problem Title

Ferry Landing Expansion

Program Options

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:

- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:

- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:

- Number of pile increments = 90
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:

- Values of pile-head deflection, bending moment, shear force, and
soil reaction are printed for full length of pile.
- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 540.00 in

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo
 Depth of ground surface below top of pile = -36.00 in
 Slope angle of ground surface = .00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	13.50000000	1728.0000	144.0000	4415000.
2	540.0000	13.50000000	1728.0000	144.0000	4415000.

 Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is silt with cohesion and friction
 Distance from top of pile to top of layer = -36.000 in
 Distance from top of pile to bottom of layer = 108.000 in
 p-y subgrade modulus k for top of soil layer = 25.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 25.000 lbs/in**3

Layer 2 is liquefiable sand, by Rollins et al, 2004
 Distance from top of pile to top of layer = 108.000 in
 Distance from top of pile to bottom of layer = 144.000 in

Layer 3 is liquefiable sand, by Rollins et al, 2004
 Distance from top of pile to top of layer = 144.000 in
 Distance from top of pile to bottom of layer = 360.000 in

Warning : The depth of this layer is deeper than the recommended depth limit
 for using the p-y criteria for liquefied sand.
 Please consult the LPILE Technical Manual for additional background
 information regarding limitations on the use of the liquefied sand criteria.

Layer 4 is silt with cohesion and friction
 Distance from top of pile to top of layer = 360.000 in
 Distance from top of pile to bottom of layer = 720.000 in
 p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

(Depth of lowest layer extends 180.00 in below pile tip)

 Effective Unit weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 8 points

Point No.	Depth X in	Eff. Unit weight lbs/in**3
1	-36.00	.06800
2	108.00	.06800
3	108.00	.03800
4	144.00	.03800
5	144.00	.03800
6	360.00	.03800
7	360.00	.03800
8	720.00	.03800

 Shear strength of Soils

Shear strength parameters with depth defined using 8 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-36.000	1.39000	28.00	.00700	.0

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo					
2	108.000	1.39000	28.00	.00700	.0
3	108.000	.00000	.00	-----	-----
4	144.000	.00000	.00	-----	-----
5	144.000	.00000	.00	-----	-----
6	360.000	.00000	.00	-----	-----
7	360.000	2.08000	40.00	.00400	.0
8	720.000	2.08000	40.00	.00400	.0

Notes:

- (1) Cohesion = uniaxial compressive strength for rock materials.
- (2) Values of E50 are reported for clay strata.
- (3) Default values will be generated for E50 when input values are 0.
- (4) RQD and k_{rm} are reported only for weak rock strata.

 Loading Type

Static loading criteria was used for computation of p-y curves.

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 3

Load Case Number 1

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Deflection at pile head = .250 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

Load Case Number 2

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Deflection at pile head = .500 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

Load Case Number 3

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Deflection at pile head = 1.000 in
 Bending moment at pile head = .000 in-lbs
 Axial load at pile head = 100000.000 lbs

 Computed Values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Specified deflection at pile head = .250000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	.250000	0.0000	11199.6626	-.0039763	694.4444	-225.0000	2700.0000
6.000	.226142	65533.7718	9812.3151	-.0039506	950.4357	-237.4491	6300.0000
12.000	.202593	122488.	8370.6318	-.0038766	1172.9150	-243.1120	7200.0000
18.000	.179623	170633.	6913.8245	-.0037614	1360.9808	-242.4905	8100.0000
24.000	.157457	209968.	5477.7964	-.0036117	1514.6318	-236.1855	9000.0000
30.000	.136282	240701.	4094.6427	-.0034345	1634.6823	-224.8657	9900.0000
36.000	.116243	263225.	2792.3317	-.0032363	1722.6673	-209.2379	10800.0000
42.000	.097446	278092.	1594.5562	-.0030235	1780.7431	-190.0206	11700.0000
48.000	.079962	285988.	520.7350	-.0028016	1811.5846	-167.9198	12600.0000
54.000	.063827	287703.	-413.8550	-.0025760	1818.2852	-143.6102	13500.0000

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo							
60.000	.049049	284113.	-1197.8400	-.0023512	1804.2604	-117.7182	14400.0000
66.000	.035612	276151.	-1823.4294	-.0021309	1773.1577	-90.8116	15300.0000
72.000	.023479	264789.	-2286.0414	-.0019182	1728.7756	-63.3924	16200.0000
78.000	.012594	251020.	-2583.9005	-.0017153	1674.9909	-35.8940	17100.0000
84.000	.002895	235840.	-2717.6341	-.0015239	1615.6959	-8.6839	18000.0000
90.000	-.005692	220237.	-2689.8937	-.0013445	1554.7451	17.9307	18900.0000
96.000	-.013240	205175.	-2505.0265	-.0011773	1495.9097	43.6917	19800.0000
102.000	-.019819	191589.	-2168.8206	-.0010212	1442.8403	68.3769	20700.0000
108.000	-.025495	180375.	-1957.8912	-.0008750	1399.0333	1.9329	454.8850
114.000	-.030319	169145.	-1944.0587	-.0007375	1355.1656	2.6780	529.9607
120.000	-.034345	157931.	-1925.5841	-.0006089	1311.3627	3.4802	607.9788
126.000	-.037626	146768.	-1902.1642	-.0004891	1267.7582	4.3265	689.9155
132.000	-.040214	135692.	-1873.5717	-.0003780	1224.4915	5.2043	776.4908
138.000	-.042162	124739.	-1839.6538	-.0002756	1181.7065	6.1016	868.3063
144.000	-.043522	113947.	-1800.3298	-.0001818	1139.5496	7.0063	965.9094
150.000	-.044343	103353.	-1755.5908	-9.6310E-05	1098.1680	7.9066	1069.8280
156.000	-.044677	92995.4106	-1705.4979	-1.9099E-05	1057.7078	8.7910	1180.5918
162.000	-.044573	82910.1791	-1650.1807	5.0072E-05	1018.3123	9.6481	1298.7453
168.000	-.044077	73133.1554	-1589.8350	.0001114	980.1208	10.4672	1424.8593
174.000	-.043235	63698.4397	-1524.7198	.0001652	943.2665	11.2379	1559.5387
180.000	-.042094	54638.2307	-1455.1542	.0002118	907.8750	11.9506	1703.4307
186.000	-.040694	45982.4618	-1381.5130	.0002513	874.0634	12.5964	1857.2321
192.000	-.039078	37758.4662	-1304.2222	.0002843	841.9385	13.1672	2021.6973
198.000	-.037283	29990.6726	-1223.7532	.0003109	811.5955	13.6558	2197.6465
204.000	-.035347	22700.3357	-1140.6176	.0003316	783.1176	14.0561	2385.9747
210.000	-.033303	15905.3056	-1055.3604	.0003468	756.5745	14.3630	2587.6617
216.000	-.031185	9619.8378	-968.5534	.0003568	732.0219	14.5727	2803.7838
222.000	-.029021	3854.4468	-880.7881	.0003621	709.5009	14.6824	3035.5267
228.000	-.026839	-1384.1950	-792.6680	.0003631	699.8515	14.6909	3284.2008
234.000	-.024664	-6093.3107	-704.8015	.0003602	718.2464	14.5979	3551.2590
240.000	-.022517	-10274.0259	-617.7938	.0003537	734.5774	14.4046	3838.3174
246.000	-.020419	-13931.3260	-532.2394	.0003442	748.8637	14.1135	4147.1800
252.000	-.018386	-17073.9670	-448.7146	.0003320	761.1396	13.7281	4479.8684
258.000	-.016435	-19714.3384	-367.7697	.0003176	771.4536	13.2535	4838.6576
264.000	-.014576	-21868.2807	-289.9221	.0003012	779.8674	12.6957	5226.1190
270.000	-.012820	-23554.8592	-215.6495	.0002834	786.4556	12.0618	5645.1748
276.000	-.011175	-24796.0970	-145.3836	.0002643	791.3042	11.3601	6099.1646
282.000	-.009648	-25616.6691	-79.5041	.0002445	794.5096	10.5997	6591.9304
288.000	-.008241	-26043.5633	-18.3333	.0002242	796.1771	9.7905	7127.9258
294.000	-.006958	-26105.7096	37.8676	.0002037	796.4199	8.9431	7712.3597
300.000	-.005797	-25833.5846	88.9032	.0001833	795.3569	8.0687	8351.3883
306.000	-.004758	-25258.7947	134.6463	.0001632	793.1116	7.1789	9052.3813
312.000	-.003839	-24413.6437	175.0398	.0001436	789.8102	6.2856	9824.2996
318.000	-.003035	-23330.6918	210.0982	.0001249	785.5800	5.4006	10678.2572
324.000	-.002340	-22042.3104	239.9071	.0001070	780.5472	4.5357	11628.3977
330.000	-.001750	-20580.2416	264.6221	9.0269E-05	774.8360	3.7026	12693.3583
336.000	-.001257	-18975.1683	284.4661	7.4714E-05	768.5662	2.9121	13898.9338
342.000	-.000854	-17256.3060	299.7253	6.0467E-05	761.8519	2.1743	15283.5438
348.000	-.000532	-15451.0252	310.7426	4.7606E-05	754.8000	1.4981	16911.5688
354.000	-.000282	-13584.5217	317.9072	3.6188E-05	747.5090	.8900951	18916.2026
360.000	-9.73E-05	-11679.5646	330.8392	2.6253E-05	740.0677	3.4206	211035.
366.000	3.27E-05	-9645.9555	337.5756	1.7868E-05	732.1240	-1.1751	215535.
372.000	.000117	-7650.0988	321.1607	1.1066E-05	724.3276	-4.2965	220035.
378.000	.000166	-5805.3067	289.6901	5.7751E-06	717.1214	-6.1937	224535.
384.000	.000186	-4180.7476	249.7561	1.8483E-06	710.7755	-7.1177	229035.
390.000	.000188	-2810.4515	206.4874	-9.0086E-07	705.4228	-7.3052	233535.
396.000	.000176	-1701.8172	163.6663	-2.6752E-06	701.0922	-6.9685	238035.
402.000	.000156	-843.2451	123.8937	-3.6760E-06	697.7384	-6.2891	242535.
408.000	.000132	-210.6819	88.7792	-4.0905E-06	695.2674	-5.4157	247035.
414.000	.000106	227.0140	59.1380	-4.0840E-06	695.3312	-4.4647	251535.
420.000	8.25E-05	503.8747	35.1788	-3.7966E-06	696.4127	-3.5217	256035.
426.000	6.09E-05	653.7149	16.6752	-3.3414E-06	696.9980	-2.6461	260535.
432.000	4.24E-05	707.9869	3.1139	-2.8060E-06	697.2100	-1.8743	265035.
438.000	2.73E-05	694.4484	-6.1839	-2.2545E-06	697.1571	-1.2249	269535.
444.000	1.54E-05	636.4857	-11.9657	-1.7311E-06	696.9307	-.7023797	274035.
450.000	6.49E-06	552.9370	-14.9772	-1.2634E-06	696.6044	-.3014500	278535.
456.000	2.18E-07	458.2751	-15.9124	-8.6576E-07	696.2346	-.0102745	283035.
462.000	-3.90E-06	363.0271	-15.3832	-5.4280E-07	695.8625	.1866827	287535.
468.000	-6.30E-06	274.3284	-13.9038	-2.9217E-07	695.5160	.3064319	292035.
474.000	-7.40E-06	196.5318	-11.8871	-1.0702E-07	695.2121	.3658045	296535.
480.000	-7.58E-06	131.8114	-9.6488	2.2099E-08	694.9593	.3803064	301035.
486.000	-7.14E-06	80.7198	-7.4177	1.0567E-07	694.7598	.3634027	305535.
492.000	-6.31E-06	42.6727	-5.3490	1.5419E-07	694.6111	.3261518	310035.
498.000	-5.29E-06	16.3468	-3.5392	1.7740E-07	694.5083	.2771081	314535.
504.000	-4.18E-06	-.0108165	-2.0406	1.8383E-07	694.4445	.2224242	319035.
510.000	-3.08E-06	-8.3612	-8750810	1.8053E-07	694.4771	.1660885	323535.
516.000	-2.02E-06	-10.7284	-.0460489	1.7303E-07	694.4864	.1102555	328035.
522.000	-1.00E-06	-9.1214	.4516169	1.6522E-07	694.4801	.0556331	332535.
528.000	-3.40E-08	-5.5073	.6242435	1.5947E-07	694.4660	.0019091	337035.

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo
 534.000 9.10E-07 -1.8219 .4745998 1.5659E-07 694.4516 -.0517903 341535.
 540.000 1.85E-06 0.0000 0.0000 1.5587E-07 694.4444 -.1064096 173018.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

Pile-head deflection = .25000000 in
 Computed slope at pile head = -.00397633
 Maximum bending moment = 287703.24144 lbs-in
 Maximum shear force = 11199.66255 lbs
 Depth of maximum bending moment = 54.00000000 in
 Depth of maximum shear force = 0.00000 in
 Number of iterations = 5
 Number of zero deflection points = 4

 Computed values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Specified deflection at pile head = .500000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	.500000	0.0000	22208.9416	-.0079487	694.4444	-376.0294	2256.1763
6.000	.452308	131254.	19656.0837	-.0078971	1207.1567	-474.9233	6300.0000
12.000	.405235	245349.	16772.4676	-.0077490	1652.8409	-486.2821	7200.0000
18.000	.359320	341823.	13858.3750	-.0075181	2029.6895	-485.0821	8100.0000
24.000	.315018	420672.	10985.5477	-.0072183	2337.6933	-472.5270	9000.0000
30.000	.272701	482311.	8218.0965	-.0068632	2578.4726	-449.9567	9900.0000
36.000	.232660	527525.	5611.8629	-.0064661	2755.0877	-418.7879	10800.0000
42.000	.195108	557413.	3214.1168	-.0060394	2871.8384	-380.4608	11700.0000
48.000	.160187	573341.	1063.5589	-.0055948	2934.0593	-336.3918	12600.0000
54.000	.127971	576889.	-809.4176	-.0051425	2947.9183	-287.9337	13500.0000
60.000	.098477	569799.	-2382.2505	-.0046916	2920.2233	-236.3440	14400.0000
66.000	.071672	553932.	-3639.5698	-.0042497	2858.2421	-182.7624	15300.0000
72.000	.047480	531224.	-4572.4476	-.0038230	2769.5389	-128.1968	16200.0000
78.000	.025796	503650.	-5177.5920	-.0034160	2661.8289	-73.5180	17100.0000
84.000	.006488	473192.	-5456.5369	-.0030319	2542.8520	-19.4636	18000.0000
90.000	-.010587	441810.	-5414.8792	-.0026721	2420.2658	33.3495	18900.0000
96.000	-.025577	411420.	-5061.6144	-.0023366	2301.5550	84.4054	19800.0000
102.000	-.038626	383875.	-4408.6169	-.0020239	2193.9554	133.2605	20700.0000
108.000	-.049864	360946.	-3995.6849	-.0017310	2104.3879	4.3835	527.4578
114.000	-.059398	338004.	-3964.4001	-.0014561	2014.7716	6.0448	610.6047
120.000	-.067337	315120.	-3922.8318	-.0011993	1925.3822	7.8114	696.0226
126.000	-.073789	292369.	-3870.4414	-.0009604	1836.5105	9.6521	784.8349
132.000	-.078862	269827.	-3806.8712	-.0007393	1748.4572	11.5380	877.8358
138.000	-.082661	247574.	-3731.9325	-.0005359	1661.5291	13.4416	975.6627
144.000	-.085293	225687.	-3645.5975	-.0003498	1576.0348	15.3367	1078.8767
150.000	-.086859	204246.	-3547.9931	-.0001807	1492.2813	17.1981	1188.0050
156.000	-.087461	183328.	-3439.3930	-2.8311E-05	1410.5697	19.0019	1303.5660
162.000	-.087199	163007.	-3320.2110	.0001079	1331.1924	20.7254	1426.0861
168.000	-.086167	143356.	-3190.9922	.0002283	1254.4292	22.3475	1556.1106
174.000	-.084458	124442.	-3052.4045	.0003337	1180.5443	23.8484	1694.2139
180.000	-.082163	106327.	-2905.2281	.0004244	1109.7837	25.2104	1841.0076
186.000	-.079366	89069.5408	-2750.3446	.0005012	1042.3723	26.4174	1997.1475
192.000	-.076148	72721.2303	-2588.7252	.0005649	978.5118	27.4557	2163.3419
198.000	-.072587	57327.0089	-2421.4181	.0006160	918.3781	28.3134	2340.3594
204.000	-.068756	42925.0176	-2249.5347	.0006554	862.1203	28.9811	2529.0376
210.000	-.064722	29546.0901	-2074.2361	.0006839	809.8589	29.4518	2730.2927
216.000	-.060549	17213.4842	-1896.7185	.0007023	761.6846	29.7208	2945.1301
222.000	-.056295	5942.7038	-1718.1982	.0007114	717.6581	29.7860	3174.6572
228.000	-.052012	-4258.5849	-1539.8970	.0007121	711.0795	29.6477	3420.0972
234.000	-.047750	-13390.5456	-1363.0273	.0007051	746.7513	29.3088	3682.8061
240.000	-.043551	-21461.0700	-1188.7773	.0006914	778.2767	28.7745	3964.2918
246.000	-.039453	-28485.5856	-1018.2968	.0006718	805.7163	28.0524	4266.2381
252.000	-.035489	-34486.7747	-852.6828	.0006470	829.1584	27.1523	4590.5315

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo							
258.000	-.031688	-39494.2078	-692.9670	.0006179	848.7187	26.0863	4939.2956
264.000	-.028074	-43543.8969	-540.1026	.0005853	864.5378	24.8685	5314.9318
270.000	-.024665	-46677.7736	-394.9533	.0005498	876.7795	23.5146	5720.1701
276.000	-.021476	-48943.0974	-258.2825	.0005122	885.6284	22.0423	6158.1324
282.000	-.018519	-50391.8034	-130.7442	.0004731	891.2874	20.4705	6632.4131
288.000	-.015799	-51079.7941	-12.8750	.0004332	893.9749	18.8193	7147.1830
294.000	-.013320	-51066.1877	94.9125	.0003931	893.9217	17.1099	7707.3264
300.000	-.011082	-50412.5278	192.3348	.0003532	891.3684	15.3642	8318.6251
306.000	-.009082	-49181.9684	279.2408	.0003140	886.5615	13.6045	8988.0135
312.000	-.007314	-47438.4407	355.6134	.0002760	879.7509	11.8531	9723.9442
318.000	-.005770	-45245.8165	421.5699	.0002396	871.1859	10.1324	10536.9322
324.000	-.004439	-42667.0763	477.3591	.0002050	861.1127	8.4640	11440.4116
330.000	-.003310	-39763.4973	523.3579	.0001726	849.7706	6.8689	12452.1758
336.000	-.002368	-36593.8743	560.0641	.0001426	837.3893	5.3665	13597.0246
342.000	-.001599	-33213.7897	588.0868	.0001151	824.1858	3.9744	14912.2692
348.000	-.000987	-29674.9534	608.1328	9.0371E-05	810.3622	2.7076	16461.4099
354.000	-.000515	-26024.6419	620.9851	6.8468E-05	796.1032	1.5765	18379.4548
360.000	-.000165	-22305.2945	643.1521	4.9464E-05	781.5745	5.8125	211035.
366.000	7.89E-05	-18366.1733	652.0866	3.3470E-05	766.1873	-2.8343	215535.
372.000	.000236	-14520.4199	617.5767	2.0538E-05	751.1648	-8.6690	220035.
378.000	.000325	-10979.8994	555.0421	1.0511E-05	737.3347	-12.1758	224535.
384.000	.000363	-7872.5283	476.9994	3.0976E-06	725.1965	-13.8384	229035.
390.000	.000363	-5259.6232	393.1523	-2.0664E-06	714.9898	-14.1107	233535.
396.000	.000338	-3152.2211	310.6250	-5.3741E-06	706.7578	-13.3984	238035.
402.000	.000298	-1525.6741	234.2869	-7.2136E-06	700.4041	-12.0476	242535.
408.000	.000251	-332.1225	167.1211	-7.9442E-06	695.7418	-10.3409	247035.
414.000	.000203	489.3117	110.6035	-7.8824E-06	696.3558	-8.4982	251535.
420.000	.000157	1004.5789	65.0648	-7.2949E-06	698.3686	-6.6814	256035.
426.000	.000115	1278.8431	30.0173	-6.3970E-06	699.4399	-5.0011	260535.
432.000	7.98E-05	1372.4633	4.4379	-5.3544E-06	699.8056	-3.5253	265035.
438.000	5.09E-05	1338.5234	-13.0005	-4.2884E-06	699.6731	-2.2875	269535.
444.000	2.83E-05	1221.6032	-23.7471	-3.2817E-06	699.2163	-1.2947	274035.
450.000	1.15E-05	1057.4968	-29.2383	-2.3855E-06	698.5753	-5.5357139	278535.
456.000	-2.78E-07	873.6056	-30.8062	-1.6261E-06	697.8570	.0131060	283035.
462.000	-7.97E-06	689.7741	-29.6206	-1.0113E-06	697.1389	.3820997	287535.
468.000	-1.24E-05	519.3726	-26.6616	-5.3586E-07	696.4732	.6042132	292035.
474.000	-1.44E-05	370.4777	-22.7134	-1.8595E-07	695.8916	.7118631	296535.
480.000	-1.46E-05	247.0351	-18.3734	5.6880E-08	695.4094	.7347860	301035.
486.000	-1.37E-05	149.9282	-14.0729	2.1298E-07	695.0301	.6987110	305535.
492.000	-1.21E-05	77.9042	-10.1027	3.0257E-07	694.7488	.6246926	310035.
498.000	-1.01E-05	28.3323	-6.6418	3.4434E-07	694.5551	.5289558	314535.
504.000	-7.96E-06	-2.2105	-3.7856	3.5462E-07	694.4531	.4231113	319035.
510.000	-5.83E-06	-17.5203	-1.5724	3.4686E-07	694.5129	.3146298	323535.
516.000	-3.80E-06	-21.4951	-.0060217	3.3151E-07	694.5284	.2074847	328035.
522.000	-1.86E-06	-17.9903	.9251363	3.1599E-07	694.5147	.1029013	332535.
528.000	-3.19E-09	-10.7726	1.2344	3.0468E-07	694.4865	.0001791	337035.
534.000	1.80E-06	-3.5434	.9276250	2.9905E-07	694.4583	-.1024299	341535.
540.000	3.59E-06	0.0000	0.0000	2.9765E-07	694.4444	-.2067785	173018.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

Pile-head deflection	=	.50000000 in
Computed slope at pile head	=	-.00794869
Maximum bending moment	=	576889.31389 lbs-in
Maximum shear force	=	22208.94164 lbs
Depth of maximum bending moment	=	54.00000000 in
Depth of maximum shear force	=	0.00000 in
Number of iterations	=	6
Number of zero deflection points	=	4

 Computed values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 3

Pile-head boundary conditions are Displacement and Moment (BC Type 4)
 Specified deflection at pile head = 1.00000 in
 Specified moment at pile head = .000 in-lbs
 Specified axial load at pile head = 100000.000 lbs

Depth	Deflect.	Moment	Shear	Slope	Total	Soil Res.	Es*h
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06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo

X in	y in	M lbs-in	V lbs	S Rad.	Stress lbs/in**2	p lbs/in	F/L lbs/in
0.000	1.000000	0.0000	34104.7027	-.0153254	694.4444	-373.1575	1119.4726
6.000	.908048	207107.	31722.8431	-.0152439	1503.4546	-420.7956	2780.4416
12.000	.817073	398967.	29020.0181	-.0150056	2252.9086	-480.1460	3525.8499
18.000	.727981	573354.	25970.6669	-.0146233	2934.1067	-536.3043	4420.2087
24.000	.641594	728163.	22501.0987	-.0141115	3538.8302	-620.2184	5800.1036
30.000	.558643	860300.	18511.9954	-.0134868	4054.9932	-709.4827	7620.0651
36.000	.479752	966491.	13792.8874	-.0127685	4469.7995	-863.5533	10800.0000
42.000	.405421	1041137.	8830.5131	-.0119790	4761.3870	-790.5715	11700.0000
48.000	.336004	1086832.	4341.9761	-.0111422	4939.8814	-705.6075	12600.0000
54.000	.271714	1106612.	391.0812	-.0102797	5017.1464	-611.3574	13500.0000
60.000	.212647	1103860.	-2974.0499	-.0094105	5006.3995	-510.3530	14400.0000
66.000	.158789	1082216.	-5719.8414	-.0085509	4921.8495	-404.9109	15300.0000
72.000	.110037	1045483.	-7825.8721	-.0077142	4778.3641	-297.0994	16200.0000
78.000	.066218	997562.	-9283.3378	-.0069108	4591.1719	-188.7225	17100.0000
84.000	.027107	942376.	-10093.4710	-.0061479	4375.6019	-81.3219	18000.0000
90.000	-.007557	883818.	-10266.0232	-.0054298	4146.8590	23.8045	18900.0000
96.000	-.038051	825700.	-9817.9076	-.0047576	3919.8345	125.5674	19800.0000
102.000	-.064648	771712.	-8772.0967	-.0041295	3708.9458	223.0363	20700.0000
108.000	-.087604	725390.	-8076.8240	-.0035407	3527.9992	8.7213	597.3228
114.000	-.107137	679039.	-8013.6224	-.0029885	3346.9420	12.3459	691.4060
120.000	-.123466	632813.	-7928.0509	-.0024726	3166.3692	16.1780	786.1906
126.000	-.136809	586870.	-7819.0956	-.0019930	2986.9050	20.1405	883.2983
132.000	-.147382	541375.	-7686.1790	-.0015493	2809.1913	24.1651	983.7728
138.000	-.155401	496495.	-7529.1158	-.0011412	2633.8779	28.1894	1088.3870
144.000	-.161077	452395.	-7348.0807	-.0007681	2461.6135	32.1557	1197.7775
150.000	-.164618	409240.	-7143.5823	-.0004293	2293.0370	36.0105	1312.5122
156.000	-.166228	367187.	-6916.4380	-.0001240	2128.7702	39.7043	1433.1280
162.000	-.166105	326391.	-6667.7501	.0001488	1969.4100	43.1916	1560.1544
168.000	-.164443	286996.	-6398.8817	.0003900	1815.5220	46.4311	1694.1292
174.000	-.161425	249137.	-6111.4312	.0006008	1667.6344	49.3857	1835.6100
180.000	-.157233	212938.	-5807.2060	.0007825	1526.2324	52.0227	1985.1841
186.000	-.152035	178511.	-5488.1957	.0009364	1391.7536	54.3141	2143.4767
192.000	-.145996	145956.	-5156.5441	.0010640	1264.5837	56.2365	2311.1589
198.000	-.139267	115356.	-4814.5197	.0011668	1145.0530	57.7716	2488.9561
204.000	-.131994	86781.2749	-4464.4874	.0012463	1033.4338	58.9058	2677.6559
210.000	-.124312	60286.4189	-4108.8778	.0013041	929.9383	59.6307	2878.1180
216.000	-.116345	35909.8201	-3750.1581	.0013419	834.7172	59.9426	3091.2840
222.000	-.108209	13674.2087	-3390.8019	.0013614	747.8593	59.8428	3318.1893
228.000	-.100008	-6413.5136	-3033.2606	.0013643	719.4972	59.3376	3559.9763
234.000	-.091837	-24362.0554	-2679.9344	.0013522	789.6087	58.4378	3817.9103
240.000	-.083782	-40195.3414	-2333.1451	.0013268	851.4575	57.1587	4093.3973
246.000	-.075916	-53951.9487	-1995.1097	.0012898	905.1942	55.5198	4388.0059
252.000	-.068304	-65684.3833	-1667.9153	.0012427	951.0241	53.5449	4703.4935
258.000	-.061003	-75458.2053	-1353.4967	.0011872	989.2031	51.2613	5041.8369
264.000	-.054058	-83351.0149	-1053.6145	.0011248	1020.0343	48.6995	5405.2713
270.000	-.047506	-89451.3120	-769.8364	.0010568	1043.8636	45.8932	5796.3372
276.000	-.041376	-93857.2428	-503.5204	.0009847	1061.0743	42.8788	6217.9400
282.000	-.035689	-96675.2493	-255.8008	.0009098	1072.0821	39.6945	6673.4247
288.000	-.030458	-98018.6366	-27.5761	.0008333	1077.3297	36.3804	7166.6739
294.000	-.025690	-98006.0756	180.4993	.0007562	1077.2807	32.9780	7702.2353
300.000	-.021384	-96760.0591	368.0213	.0006796	1072.4134	29.5293	8285.4952
306.000	-.017535	-94405.3281	534.8393	.0006044	1063.2153	26.0767	8922.9172
312.000	-.014131	-91067.2896	681.0555	.0005315	1050.1760	22.6621	9622.3861
318.000	-.011157	-86870.4435	807.0221	.0004615	1033.7821	19.3268	10393.7190
324.000	-.008593	-81936.8411	913.3340	.0003951	1014.5102	16.1105	11249.4716
330.000	-.006415	-76384.5959	1000.8185	.0003329	992.8218	13.0510	12206.2906
336.000	-.004598	-70326.4722	1070.5201	.0002752	969.1572	10.1829	13287.3998
342.000	-.003113	-63868.5780	1123.6810	.0002224	943.9311	7.5374	14527.7518
348.000	-.001929	-57109.1996	1161.7137	.0001748	917.5273	5.1402	15986.7568
354.000	-.001015	-50137.8273	1186.1610	.0001327	890.2953	3.0090	17789.9661
360.000	-.000337	-43034.4734	1230.7572	9.6034E-05	862.5479	11.8564	211035.
366.000	.000138	-35483.9808	1251.5006	6.5158E-05	833.0537	-4.9420	215535.
372.000	.000445	-28094.6552	1187.7389	4.0157E-05	804.1892	-16.3119	220035.
378.000	.000619	-21279.3018	1069.2585	2.0741E-05	777.5667	-23.1815	224535.
384.000	.000694	-15288.4424	920.2735	6.3618E-06	754.1649	-26.4801	229035.
390.000	.000696	-10243.6535	759.5867	-3.6782E-06	734.4587	-27.0821	233535.
396.000	.000650	-6168.9877	601.0315	-1.0132E-05	718.5421	-25.7696	238035.
402.000	.000574	-3019.1169	454.0896	-1.3745E-05	706.2379	-23.2110	242535.
408.000	.000485	-703.4188	324.5978	-1.5209E-05	697.1922	-19.9529	247035.
414.000	.000392	894.3077	215.4757	-1.5134E-05	697.9378	-16.4212	251535.
420.000	.000303	1900.4501	127.4217	-1.4035E-05	701.8681	-12.9302	256035.
426.000	.000223	2440.2095	59.5445	-1.2328E-05	703.9765	-9.6955	260535.
432.000	.000155	2629.7780	9.9080	-1.0334E-05	704.7170	-6.8500	265035.
438.000	9.93E-05	2571.5071	-24.0204	-8.2891E-06	704.4894	-4.4595	269535.
444.000	5.56E-05	2351.4804	-45.0176	-6.3532E-06	703.6299	-2.5396	274035.
450.000	2.30E-05	2038.9195	-55.8441	-4.6268E-06	702.4090	-1.0692	278535.

06063-52-03-Ferry Landing Expansion-SEISMIC 45ft.lpo

456.000	8.28E-08	1686.9039	-59.0635	-3.1617E-06	701.0339	-.0039052	283035.
462.000	-1.49E-05	1333.9517	-56.9320	-1.9738E-06	699.6552	.7143855	287535.
468.000	-2.36E-05	1006.0879	-51.3425	-1.0536E-06	698.3745	1.1488	292035.
474.000	-2.76E-05	719.1056	-43.8114	-3.7519E-07	697.2535	1.3616	296535.
480.000	-2.81E-05	480.8016	-35.4963	9.6651E-08	696.3226	1.4101	301035.
486.000	-2.64E-05	293.0336	-27.2345	4.0095E-07	695.5891	1.3439	305535.
492.000	-2.33E-05	153.5064	-19.5921	5.7654E-07	695.0441	1.2036	310035.
498.000	-1.95E-05	57.2371	-12.9189	6.5941E-07	694.6680	1.0208	314535.
504.000	-1.54E-05	-2.3116	-7.4032	6.8101E-07	694.4535	.8178128	319035.
510.000	-1.13E-05	-32.4180	-3.1218	6.6735E-07	694.5711	.6093120	323535.
516.000	-7.37E-06	-40.5738	-.0846861	6.3865E-07	694.6029	.4030538	328035.
522.000	-3.64E-06	-34.2006	1.7290	6.0925E-07	694.5780	.2015152	332535.
528.000	-6.12E-08	-20.5567	2.3439	5.8771E-07	694.5247	.0034377	337035.
534.000	3.42E-06	-6.7793	1.7708	5.7696E-07	694.4709	-.1944803	341535.
540.000	6.86E-06	0.0000	0.0000	5.7430E-07	694.4444	-.3957701	173018.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

Pile-head deflection = 1.00000000 in
 Computed slope at pile head = -.01532537
 Maximum bending moment = 1106612. lbs-in
 Maximum shear force = 34104.70268 lbs
 Depth of maximum bending moment = 54.00000000 in
 Depth of maximum shear force = 0.00000 in
 Number of iterations = 6
 Number of zero deflection points = 4

 Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

Type 1 = Shear and Moment, y = pile-head displacement in
 Type 2 = Shear and Slope, M = Pile-head Moment lbs-in
 Type 3 = Shear and Rot. Stiffness, V = Pile-head Shear Force lbs
 Type 4 = Deflection and Moment, S = Pile-head Slope, radians
 Type 5 = Deflection and Slope, R = Rot. Stiffness of Pile-head in-lbs/rad

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
4	y= .250000	M= 0.000	100000.0000	.2500000	287703.	11199.6626
4	y= .500000	M= 0.000	100000.0000	.5000000	576889.	22208.9416
4	y= 1.000000	M= 0.000	100000.0000	1.0000000	1106612.	34104.7027

The analysis ended normally.

 Summary of Warning Messages

Appendix C

Closure Letter - County of San Diego
Department of Environmental Health



County of San Diego

DANIEL J. AVERA
DIRECTOR

LARRY T. AKER
ASSISTANT DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH

P.O. BOX 85261, SAN DIEGO, CA 92186-5261
(619) 338-2222 FAX (619) 338-2377

SITE ASSESSMENT AND MITIGATION DIVISION

July 11, 1997

Mr. Rick Adcock
San Diego Unified Port District
P.O. Box 488
San Diego, CA 92112-0488

Dear Mr. Adcock:

CORONADO BOATYARD/OLD FERRY LANDING
1511 MARINE WAY, CORONADO, CA
DEH FILE #H29785-001

The County of San Diego Department of Environmental (DEH), Site Assessment and Mitigation (SAM) Division was designated as the Administering Agency by the Site Designation Committee after a request by the San Diego Unified Port District (the Responsible Party) to oversee the Site Investigation and Remediation Action at the Coronado Boatyard/Old Ferry Landing, located at 1511 Marine Way, Coronado, California.

In accordance with Health and Safety Code 25264, the Administering Agency, after appropriate consultation with California Environmental Protection Agency Department of Toxic Substances Control (DTSC) and San Diego Regional Water Quality Control Board (RWQCB), has determined that:

- 1) The site investigation and remediation action at the site has been satisfactorily completed and a permanent remedy has been accomplished [25264(b)]. Actions taken are described in the attached case closure summary.
- 2) Applied remediation action standards and objectives were achieved [25264(b)].
- 3) The Responsible Party has complied with the requirements of all state and local laws, ordinances, regulations, and standards that are applicable to the Site Investigation and Remediation Action [25264(c)].
- 4) This letter of completion is subject to conditions specified in the attached case closure summary.

"Prevention Comes First"

Mr. Rick Adcock

-2-

July 11, 1997

No agency may take action against the Responsible Party with respect to the hazardous materials release at the site except as specified in Health and Safety Code 25256(c)(1) through (6).

Please contact Mo. Lahsaie at (619)338-2256 if you have questions.

Sincerely,



CHUCK PRYATEL, Chief
Site Assessment and Mitigation Division

CP:ac

Attachment

cc: Cal-EPA Site Designation Committee
John Odermatt, San Diego RWQCB
Safouh Sayed, State of California DTSC
Bill Paznokas, State of California Department of Fish and Game
Edward Kleeman, City of Coronado
Dana Austin, Austin Environmental Inc.
Charles Talmadge, Coronado Village Homeowners Association
George Palermo, Port Coronado Associates
Mark Peabody, Dames & Moore Environmental Consultants



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County of San Diego

PORT OF SAN DIEGO
ENVIRONMENTAL MANAGEMENT

DANIEL J. AVERA
DIRECTOR

LARRY T. AKER
ASSISTANT DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH

P.O. BOX 85261, SAN DIEGO, CA 92186-5261
(619) 338-2222 FAX (619) 338-2377

SITE ASSESSMENT AND MITIGATION DIVISION

July 11, 1997

Mr. George Palermo
Port Coronado Associates
P.O. Box 751
San Diego, CA 92112

Mr. Howard Kipland
Allegis Development
Port Coronado Associates
427 C St., Suite 210
San Diego, CA 92101

Dear Mr. Palermo and Mr. Kipland:

CORONADO BOATYARD/OLD FERRY LANDING
1511 MARINE WAY, CORONADO, CA
DEH FILE #29785-001

The Department of Environmental Health (DEH), Site Assessment and Mitigation Division has completed the review of the above referenced environmental project. A letter certifying the completion of environmental work at the site was directed to the San Diego Unified Port District (SDUPD) on July 11, 1997. The certification was addressed to the SDUPD, as they were the applicant for the Site Designation activity.

Port Coronado Associates was the applicant identified for the DEH Voluntary Assistance Program activity related to this project. The DEH considers the services requested by the Port Coronado Associates for this project to be completed. A final bill for DEH activities will be sent within this quarter, unless you request an earlier billing by contacting DEH Fiscal at 338-2408.

DEH appreciates the efforts of Mr. Adcock, SDUPD; Mr. Austin, Austin Environmental; and Mr. Peabody, Dames and Moore in bringing this project to completion. If you need further assistance, please contact me at (619) 338-2243.

Sincerely,

VICKIE CHURCH, Hazardous Material Specialist III
Site Assessment and Mitigation Division

VC:ac

Enclosure

cc: Rick Adcock, SDUPD (w/o enclosure)
Dana Austin, Austin Environmental (w/o enclosure)
Mark Peabody, Dames & Moore (w/o enclosure)

Case Closure Summary
Non-LOP or Voluntary Assistance Program

I. AGENCY INFORMATION

Date: June 24, 1997

Lead Agency: County of San Diego, Environmental Health, SAM P.O. Box 85261 San Diego, CA 92186-5261	Phone: (619) 338-2222 Fax: (619) 338-2315
DEH Staff Person: Mo. Lahaie	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Case No. H29785-001		
Site Name: Old Ferry Landing/Coronado Boat Yard (Coronado Ferry Landing)		
Site Address: 1511 Marine Way, Coronado, California		
Property Owner: San Diego Unified Port District (DEH-SAM Requested Site Designation)	Address: 3165 Pacific Highway, San Diego, CA	Phone: (619)686-6598
Responsible/Requesting Party: Port Coronado Associates	Address: 1511 Marine Way, Coronado, California	Phone: (619)522-6159
Type of Case: Cal-EPA Site Designation; DEH Voluntary Assistance Program		
Cal-EPA approval of DEH Oversight: Yes		

III. SITE CHARACTERIZATION AND/OR INFORMATION

Cause and Type of Contamination (if any): Petroleum Hydrocarbons and metals from shipping/boat yard maintenance activities			
Site Characterization complete?		Yes	
Monitoring Wells Installed? Yes	Total Number: 4	Proper Screened Interval? Yes	Number of decommissioned wells: 4
Range of groundwater levels on the site? tidal fluctuations		6-8 feet below surface influenced by	Groundwater flow direction: north toward San Diego Bay
Most Sensitive Current Use: San Diego Bay (Recreational, Navigation, Fishing)			
Ars Drinking Water Wells Affected?		No	RWQCB Basin Number: 10.10
Is Surface Water Affected?		No	Nearest Surface Water name: San Diego Bay
Off-Site Beneficial Use Impacts (addresses/locations): None			
TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Oily Sludge (petroleum impacted soil)	5-40 Cubic Yards	Disposed at Sonas Earth Sciences of Vicksburg, Arizona,	July, 1995
Sandblast Grit (surface contamination)	30-35 Cubic Yards	Disposed at Sonas Soil Resource Recovery of Arizona, Inc, Salome, Arizona	July, 1995
Heavy Metal impacted soil (Lead contamination)	150 Cubic Yards	Disposed at Copper Mountain Landfill, Ave. 36E and County 12th St., Yuma County, AZ 85356	April, 1997

Non-LOP - Underground Storage Tank Oversight handled outside the LOP
 Non-Tank - Voluntary Assistance Program

Case Closure Summary

Non-LOP or Voluntary Assistance Program

III. SITE CHARACTERIZATION AND/OR INFORMATION (Continued)

H29785-001

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS -- BEFORE AND AFTER CLEANUP									
Contaminant	Soil (ppm)		Water (ppm)		Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After		Before	After	Before	After
Lead	7090	3,400 at 4 ft. (955, upper 90% confidence level)	0.305	0.07	Benzene	0.696	0.696	<0.005	<0.005
Copper	16,000	3,181	0.550	0.023	Toluene	7.290	7.290	<0.006	<0.006
Zinc	7,519	7,519	0.453	0.050	Ethylbenzene	3.470	3.470	<0.007	<0.007
TPH	15,900	4,740	0.081	0.081	Xylenes	15.800	15.800	<0.007	<0.007
TRPH	18,500	18,500			PCB	0.064	0.064		

Comments: Lead cleanup level in soil was based on the current Preliminary Remediation Goals (PRGs) for soil at industrial sites of 1,000 mg/kg. Approximately 150 cubic yards of lead impacted soil with concentrations above 1,000 mg/kg were removed down to the groundwater table at 8 feet below surface. The lead concentration of 955 mg/kg referenced above is at approximately 4 feet below surface and remains in place at the Northwest Section of the subject property. Trenching in the vicinity of the 18,500 ppm TRPH was performed to demonstrate that free product was not present. Based on the reported information provided by Dames & Moore, they have concluded that there is no threat to public safety and/or environmental health at this site.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan?	Yes
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan?	Yes
Does corrective action protect public health for current land use?	Yes
Are there other issues DEH needs to follow up on: No	
Site Management Requirements: If remaining heavy metal contaminated soils are excavated, particularly lead impacted soil at 4 feet below grade, the soil needs to be managed in accordance with the laws and regulations at that time. If utility trenches are installed in the lead contaminated area, the workers health & safety must be managed in accordance with the OSHA regulations. Workers should be advised of the presence and approximate location of the lead impacted soil. During construction in the trench areas, dust control measures and good field hygiene are recommended to minimize ingestion/inhalation of the residual lead impacted soils. (e.g. Use of boot covers or washable boots and availability of hand washing facilities)	
Should corrective action be reviewed if land use changes?	Yes
Enforcement Action Taken: None	
Enforcement Actions Rescinded: N/A	

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Chuck Fryatel	Title: Chief Site Assessment and Mitigation
Signature: 	Date: 7-10-97
Hydrogeologist Concurrence: 	Date: 7/8/97

VI. RWQCB NOTIFICATION

Date submitted to the RWQCB: 02/14/1997	RWQCB Response date: 03/26/1997
RWQCB Staff: John Odermatt	Title: Associate Engineering Geologist

VII. ADDITIONAL COMMENTS, DATA, ETC.

Site included only soil area up to the rip-rap. The site did not include the rip rap area or any portion of the San Diego Bay. The California Department of Fish and Game should be contacted if any activity is considered for the bay area (sediments, and eel grass).
--

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

Appendix D

FHWA Roadway Construction Noise Model User's Guide



U.S. Department
of Transportation

Federal Highway
Administration

FHWA-HEP-05-054
DOT-VNTSC-FHWA-05-01

FHWA Roadway Construction Noise Model User's Guide

Final Report
January 2006



Prepared for
U.S. Department of Transportation
Federal Highway Administration
Office of Environment and Planning
Washington, DC 20590

Prepared by
U.S. Department of Transportation
Research and Innovative Technology Administration
John A. Volpe National Transportation Systems Center
Acoustics Facility
Cambridge, MA 02142

NOTICE

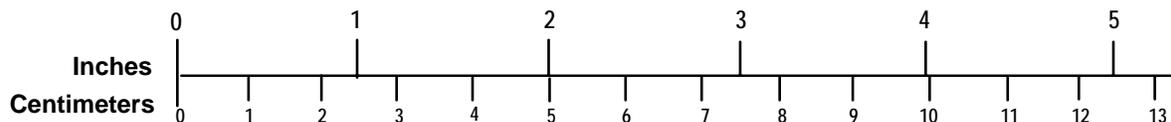
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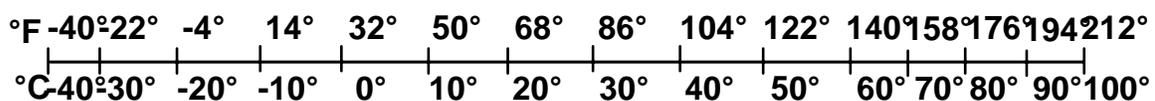
REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE January 2006		3. REPORT TYPE AND DATES COVERED Final Report January 2004-January 2006
4. TITLE AND SUBTITLE FHWA Roadway Construction Noise Model, Version 1.0 User's Guide			5. FUNDING NUMBERS HW-66/CS036	
6. AUTHOR(S) Reherman, Clay N. ⁽³⁾ , Rochat, Judith L. ⁽³⁾ , Thalheimer, Erich S. ⁽²⁾ , Lau, Michael C. ⁽³⁾ , Fleming, Gregg G. ⁽³⁾ , Ferroni, Mark ⁽¹⁾ , Corbisier, Christopher ⁽¹⁾				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Transportation Research and Innovative Technology Administration John A. Volpe National Transportation Systems Center Environmental Measurement and Modeling Division, DTS-34 Cambridge, MA 02142			8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-FHWA-05-01	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Department of Transportation Federal Highway Administration Office of Environment and Planning Washington, DC 20590			10. SPONSORING/MONITORING AGENCY REPORT NUMBER FHWA-HEP-05-054	
11. SUPPLEMENTARY NOTES (1) U.S. Department of Transportation Federal Highway Administration Office of Environment and Planning Washington, DC 20590 (2) Parsons Brinckerhoff Quade & Douglas Inc. 75 Arlington St. Boston, MA 02116 (3) U.S. Department of Transportation Research and Innovative Technology Administration John A. Volpe National Transportation Systems Center Environmental Measurement and Modeling Division Cambridge, MA 02142				
12a. DISTRIBUTION/AVAILABILITY STATEMENT This document is available to the public through the National Technical Information Service, Springfield, VA 22161			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The Roadway Construction Noise Model (RCNM) is the Federal Highway Administration's (FHWA) national model for the prediction of construction noise. Due to the fact that construction is often conducted in close proximity to residences and businesses, construction noise must be controlled and monitored to avoid impacts on surrounding communities. In addition to community issues, excessive noise can threaten a construction projects' progress. Each project needs to balance the community's need for peace and quiet with the contractor's need to progress the work. During the Central Artery/Tunnel (CA/T) project in Boston, Massachusetts, the project's noise control program developed the Construction Noise Control Specification 721.560, the most comprehensive noise specification ever developed in the United States. As part of the CA/T project noise control program, a construction noise prediction spreadsheet was developed. Because the CA/T prediction tool can benefit other state and local governments, the FHWA developed the RCNM, which is based on the noise prediction calculations and equipment database used in the CA/T prediction spreadsheet. The RCNM provides a construction noise screening tool to easily predict construction noise levels and determine compliance with noise limits for a variety of construction noise projects of varying complexity.				
14. SUBJECT TERMS construction noise, noise levels, dBA, noise models, community impact, Federal Highway Administration			15. NUMBER OF PAGES 30	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified		18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited

METRIC/ENGLISH CONVERSION FACTORS	
ENGLISH TO METRIC	METRIC TO ENGLISH
<p style="text-align: center;">LENGTH (APPROXIMATE)</p> <p>1 inch (in) = 2.5 centimeters (cm)</p> <p>1 foot (ft) = 30 centimeters (cm)</p> <p>1 yard (yd) = 0.9 meter (m)</p> <p>1 mile (mi) = 1.6 kilometers (km)</p>	<p style="text-align: center;">LENGTH (APPROXIMATE)</p> <p>1 millimeter (mm) = 0.04 inch (in)</p> <p>1 centimeter (cm) = 0.4 inch (in)</p> <p>1 meter (m) = 3.3 feet (ft)</p> <p>1 meter (m) = 1.1 yards (yd)</p> <p>1 kilometer (km) = 0.6 mile (mi)</p>
<p style="text-align: center;">AREA (APPROXIMATE)</p> <p>1 square inch (sq in, in²) = 6.5 square centimeters (cm²)</p> <p>1 square foot (sq ft, ft²) = 0.09 square meter (m²)</p> <p>1 square yard (sq yd, yd²) = 0.8 square meter (m²)</p> <p>1 square mile (sq mi, mi²) = 2.6 square kilometers (km²)</p> <p>1 acre = 0.4 hectare (he) = 4,000 square meters (m²)</p>	<p style="text-align: center;">AREA (APPROXIMATE)</p> <p>1 square centimeter (cm²) = 0.16 square inch (sq in, in²)</p> <p>1 square meter (m²) = 1.2 square yards (sq yd, yd²)</p> <p>1 square kilometer (km²) = 0.4 square mile (sq mi, mi²)</p> <p>10,000 square meters (m²) = 1 hectare (ha) = 2.5 acres</p>
<p style="text-align: center;">MASS – WEIGHT (APPROXIMATE)</p> <p>1 ounce (oz) = 28 grams (gm)</p> <p>1 pound (lb) = 0.45 kilogram (kg)</p> <p>1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)</p>	<p style="text-align: center;">MASS – WEIGHT (APPROXIMATE)</p> <p>1 gram (gm) = 0.036 ounce (oz)</p> <p>1 kilogram (kg) = 2.2 pounds (lb)</p> <p>1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons</p>
<p style="text-align: center;">VOLUME (APPROXIMATE)</p> <p>1 teaspoon (tsp) = 5 milliliters (ml)</p> <p>1 tablespoon (tbsp) = 15 milliliters (ml)</p> <p>1 fluid ounce (fl oz) = 30 milliliters (ml)</p> <p>1 cup © = 0.24 liter (l)</p> <p>1 pint (pt) = 0.47 liter (l)</p> <p>1 quart (qt) = 0.96 liter (l)</p> <p>1 gallon (gal) = 3.8 liters (l)</p> <p>1 cubic foot (cu ft, ft³) = 0.03 cubic meter (m³)</p> <p>1 cubic yard (cu yd, yd³) = 0.76 cubic meter (m³)</p>	<p style="text-align: center;">VOLUME (APPROXIMATE)</p> <p>1 milliliter (ml) = 0.03 fluid ounce (fl oz)</p> <p>1 liter (l) = 2.1 pints (pt)</p> <p>1 liter (l) = 1.06 quarts (qt)</p> <p>1 liter (l) = 0.26 gallon (gal)</p> <p>1 cubic meter (m³) = 36 cubic feet (cu ft, ft³)</p> <p>1 cubic meter (m³) = 1.3 cubic yards (cu yd, yd³)</p>
<p style="text-align: center;">TEMPERATURE (EXACT)</p> <p>$[(x-32)(5/9)]^{\circ}\text{F} = y^{\circ}\text{C}$</p>	<p style="text-align: center;">TEMPERATURE (EXACT)</p> <p>$[(9/5)y + 32]^{\circ}\text{C} = x^{\circ}\text{F}$</p>

QUICK INCH - CENTIMETER LENGTH CONVERSION



QUICK FAHRENHEIT - CELSIUS TEMPERATURE CONVERSION



For more exact and/or other conversion factors, see NIST Miscellaneous Publication 286, Units of Weights and Measures. Price \$2.50 SD Catalog No. C13 10286.

Updated 6/17/98

Table of Contents

Section	Page
Table of Contents	i
List of Figures	ii
List of Tables	iii
1 Introduction.....	1
2 Background.....	2
3 The RCNM.....	4
3.1 RCNM Main Page.....	4
3.1.1 File Menu	5
3.1.2 Edit Menu.....	5
3.1.3 View Menu.....	6
3.1.4 Options Menu.....	6
3.1.5 Help Menu	8
3.2 Input Data.....	8
3.2.1 Receptors.....	8
3.2.2 Equipment	9
3.2.3 Noise Metric and Noise Limit Criteria	10
4 Results.....	18
5 Calculations in the RCNM.....	20
5.1 Metric Calculation	20
5.2 Exceedance Calculation	20
5.3 Totals Calculation	21
6 References.....	22
Appendix A: Best Practices for Calculating Estimated Shielding for Use in the RCNM.....	A-1

List of Figures

Figure	Page
1. The RCNM main page	4
2. <File> Menu	5
3. <Edit> Menu	5
4. <View> Menu	6
5. <Options> menu	6
6. Equipment list modification dialogue box	7
7. Units modification pull-down menu	8
8. Equipment dialogue box, with pull-down menu shown	9
9. Noise Metric pull-down menu	10
10. Noise Limit Criteria pop-up dialogue box	11
11. The Noise Limit Criteria "Clear" command button	12
12. Noise Limit Criteria pull-down menu	13
13. Noise Limit Criteria "Value" dialogue box	13
14. Noise Limit Criteria "Maximum" dialogue box	14
15. Noise Limit Criteria "Baseline +" dialogue box	14
16. Noise Limit Criteria "Conditional" dialogue box	15
17. L10 Adjustment dialogue box	16
18. Noise Limits display window	16
19. The RCNM main-page Results display	18

List of Tables

<u>Table</u>	<u>Page</u>
1. CA/T equipment noise emissions and acoustical usage factors database.....	3
2. Default Noise Limit Criteria	11

1 Introduction

The Roadway Construction Noise Model (RCNM) is the Federal Highway Administration's (FHWA) national model for the prediction of construction noise. Due to the fact that construction is often conducted in close proximity to residences and businesses, construction noise must be controlled and monitored to avoid impacts on surrounding communities. In addition to community issues, excessive noise can threaten a construction project's progress. Each project needs to balance the community's need for peace and quiet with the contractor's need to progress the work.

The Central Artery/Tunnel (CA/T) project in Boston, Massachusetts, which began in the early 1990s, is the largest urban construction project ever conducted in the United States. Its noise control program developed the Construction Noise Control Specification 721.560, the most comprehensive noise specification ever developed in the United States [1]. As part of the CA/T project noise control program, a construction noise prediction spreadsheet was developed [2]. Because the CA/T prediction tool can benefit other state and local governments, the FHWA developed the RCNM, which is based on the noise prediction calculations and the equipment database used in the CA/T prediction spreadsheet. The RCNM provides a construction noise screening tool to easily predict construction noise levels and to determine compliance with noise limits for a variety of construction noise projects of varying complexity.

2 Background

The RCNM is a national model based on the noise calculations and extensive construction noise data compiled for the CA/T Project. The basis for the national model is a spreadsheet tool developed in support of the CA/T project [2]. The CA/T predictions originated from Environmental Protection Agency (EPA) noise level work [3] and an Empire State Electric Energy Research Corp. Guide [4] which utilizes an “acoustical usage factor” to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation. Table 1 presents a construction equipment noise database compiled through the CA/T project [2]. This database is used to predict construction noise within the RCNM. The noise levels listed represent the A-weighted maximum sound level (Lmax), measured at a distance of 50 feet from the construction equipment.

Table 1. CA/T equipment noise emissions and acoustical usage factors database.

CA/T Noise Emission Reference Levels and Usage Factors					
filename: EQUIPLST.xls					
revised: 7/26/05					
	Impact	Acoustical Use Factor	Spec 721.560 Lmax @ 50ft	Actual Measured Lmax @ 50ft	No. of Actual Data Samples
Equipment Description	Device ?	(%)	(dBA, slow)	(dBA, slow)	(Count)
				(samples averaged)	
All Other Equipment > 5 HP	No	50	85	-- N/A --	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-- N/A --	0
Blasting	Yes	-- N/A --	94	-- N/A --	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-- N/A --	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-- N/A --	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-- N/A --	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-- N/A --	0
Tractor	No	40	84	-- N/A --	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder / Torch	No	40	73	74	5

3 The RCNM

The RCNM is a computer program used to assess construction noise impacts. The computer on which it is installed should be equipped with the Microsoft Windows 98 or newer operating system (OS) and 192 MB or more of random access memory (RAM). The display should be set to 1024 x 768 pixels or greater, and the computer should carry the Adobe Acrobat 4.0 or newer software.

The RCNM allows the estimation of three key metrics of interest: Lmax, Leq, and L10 at receptor locations for a construction operation that can include up to 20 pieces of equipment. RCNM allows for user-defined construction equipment and user-defined noise limit criteria. The two main uses of the RCNM are to allow typical computer users to: 1. easily predict noise emissions from construction equipment, and 2. determine a construction work plan's compliance with noise criteria limits. A variety of construction work scenarios can be created quickly, allowing the user to determine the impact of changing construction equipment and adding/removing the effects of shielding due to noise mitigation devices such as barriers.

3.1 RCNM Main Page

The RCNM consists of one main display page with Input Data and Results sections, shown in Figure 1.

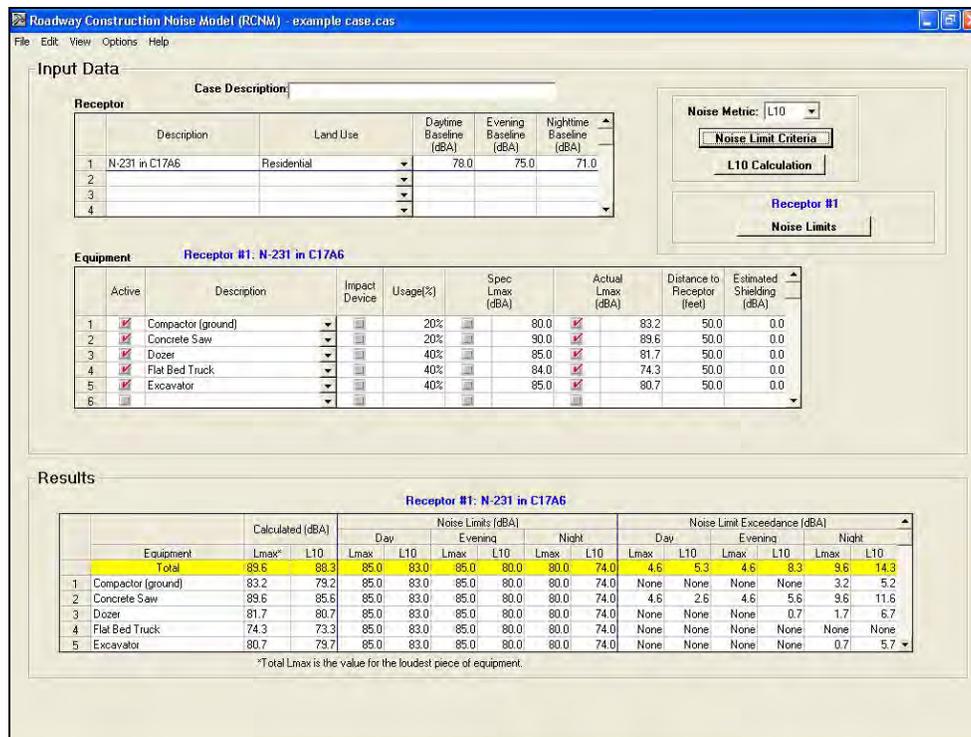


Figure 1. The RCNM main page

Several command buttons and pull-down menus allow the user to modify the input data before results are calculated by the model.

3.1.1 File Menu

The <File> menu, shown in Figure 2, contains items that allow the user to create, open, and save a case, export the results of a case, and exit the program.

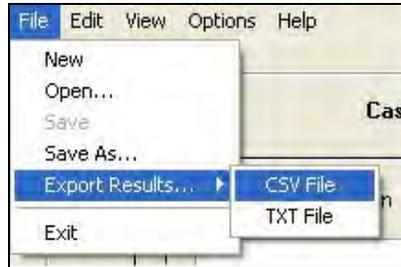


Figure 2. <File> Menu

- <New> creates a new case. If a case is currently open, the user is prompted to save it before closing.
- <Open...> allows the user to open an existing case file ([name].cas).
- <Save> saves the case with the current filename. If this is a new case, the user is asked for a new filename ([name].cas).
- <Save As...> The user is asked for a filename for a new case ([name].cas) and saves the case with that filename.
- <Export Results> prompts the user to save the case results for the current or all receptors to a comma separated value (CSV) file with the following naming convention: [name].csv. This type of file is easily read into a spreadsheet program. The user can also save the case results to a text file (TXT), which saves the results to a space-separated text format with the following naming convention: [name].txt.
- <Exit> closes the application. If changes have been made to the open case, the user is asked if he/she would like to save the case.

3.1.2 Edit Menu

The <Edit> menu, shown in Figure 3, allows the user to copy and paste data, delete data, and undo changes.



Figure 3. <Edit> Menu

- <Copy> lets the user copy into a clipboard the contents of a single cell or an entire line from an RCNM dialogue box.
- <Paste> lets the user copy the contents of the clipboard into a single cell or an entire line of an RCNM dialogue box.
- <Delete> lets the user delete from the case a receptor or piece of equipment selected in the receptor or equipment dialogue box.
- <Undo> lets the user revert the RCNM one step to where it was before the latest change was made.

3.1.3 View Menu

The <View> menu, shown in Figure 4, allows the user to focus in <Zoom +> on either the Input Data or Results section of the RCNM's main page. To activate Zoom +, click on Zoom + and guide the spyglass + icon to either Input Data or Results and single-click.



Figure 4. <View> Menu

To deactivate Zoom + and go back to the full RCNM screen, click on Zoom – and guide the spyglass – icon to the Input Data or Results section that has been maximized on the screen.

3.1.4 Options Menu

The <Options> menu, shown in Figure 5, allows the user to modify the equipment list and change the case's units of measure from feet to meters.

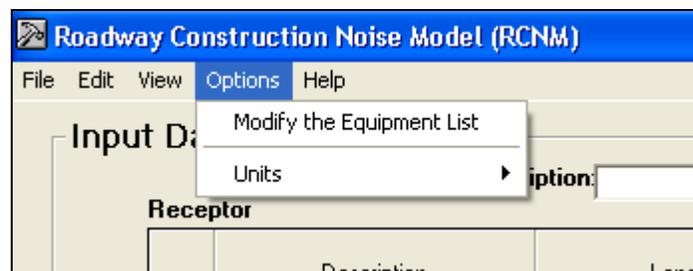


Figure 5. <Options> menu

The <Options> menu allows the user to add new types of equipment to the equipment list. The equipment list modification dialogue box, shown in Figure 6, allows the user to specify a user-defined piece of equipment and add it. The user can specify the following

data: whether the equipment is an impact device, the equipment's usage factor¹, and the equipment's Lmax level (spec and/or actual²). The user can also delete equipment that's been added by selecting it and clicking the delete button. The default equipment cannot be modified, but it may be deleted entirely from the case by selecting it and clicking the delete button. Selecting the default button restores the default equipment list (from the CA/T Project) and eliminates any user-defined equipment.

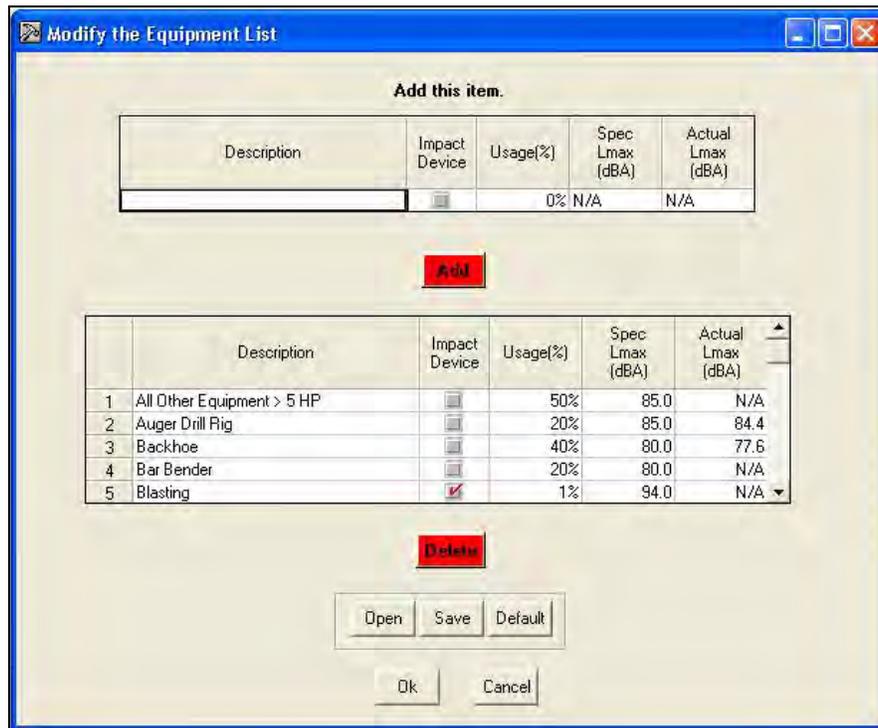


Figure 6. Equipment list modification dialogue box

Data for user-defined pieces of equipment may be saved to an equipment file ([name].equ), along with all other equipment in the current list, including default equipment. This file may be opened in other cases to incorporate these pieces of equipment.

The <Options> menu, as shown in Figure 7, also allows the user to change the case's units of measure from feet to meters or from meters to feet. The only input data affected by this tool are the Distance to Receptor values.

¹ Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power. In the case of construction blasting, the equipment gives a very short duration blast, and can be quantified by using a 1% usage factor in the RCNM to allow for some prediction. Never use a usage factor of zero because the log of zero causes a mathematical impossibility. The usage factor term only affects the computation of Leq and L10. The usage factor does not enter into the equation when calculating the more important term for blasting, that being the Lmax.

² "Spec" refers to noise levels stated in noise specifications, and "Actual" refers to Lmax values measured at 50 ft from the equipment.

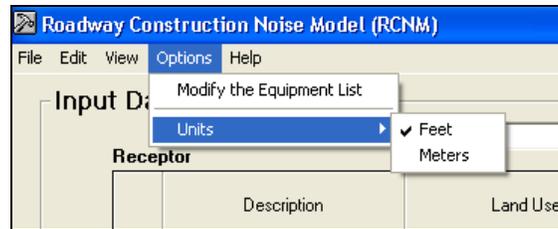


Figure 7. Units modification pull-down menu

3.1.5 Help Menu

The <Help> Menu loads for the user the RCNM User's Guide in Portable Document Format (PDF). This PDF is searchable by key word using the Adobe Acrobat Edit / Find search tool.

3.2 Input Data

The user is required to input receptor data and equipment data before a case can be processed. The user is advised to type in some summary comments about the case in the Case Description dialogue box before inputting data. Also, in order to determine noise limit exceedance values, the user can input noise limit criteria.

3.2.1 Receptors

Multiple receptors may be input for a case, but only one receptor may be processed at a time. The name of the highlighted receptor chosen for processing appears in blue type above the Equipment input dialogue box and the Noise Limits command button (see Figure 1). The user specifies the receptors for a study by entering information into the Receptors input box in the main window of the RCNM. The user is required to enter the receptor name, land use, daytime baseline L10 or Leq, evening baseline L10 or Leq, and nighttime baseline L10 or Leq. The baseline levels indicate the sound level at a receptor before any construction noise contributions. Baseline levels are only necessary if the desired noise criteria limits are based on *relative* increases in noise level. If the desired noise criteria limits are *absolute* noise levels, then the user should insert a placeholder number other than zero.

When entering information for more than one receptor, it may be desirable to copy information already entered. An entire receptor row may be highlighted and copied to another row, where copying multiple rows requires the selection of the same number of rows when pasting (this same functionality also applies to editable cells). Note: Entire rows may be selected by clicking on the row number.

Again, the RCNM will only calculate results for the receptor displayed in blue type in the Input Data portion of the main page. The results for other receptors may be displayed by selecting the desired receptor in the Receptor window; to select a receptor, click in any

cell in the row. Up to 100 receptors may be included in any case. Information for receptors is saved in the case file ([name].cas).

3.2.2 Equipment

Core equipment noise data are stored in the RCNM and are accessible by a pull-down menu in the main page, as in Figure 8.

Active	Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Distance to Receptor (feet)	Estimated Shielding (dBA)
<input checked="" type="checkbox"/>	Compactor (ground)		20%	80.0	83.2	50.0	0.0
<input checked="" type="checkbox"/>	Concrete Saw		20%	90.0	89.6	50.0	0.0
<input checked="" type="checkbox"/>	Dozer		40%	85.0	81.7	50.0	0.0
<input checked="" type="checkbox"/>	Flat Bed Truck		40%	84.0	74.3	50.0	0.0
<input checked="" type="checkbox"/>	Excavator		40%	85.0	80.7	50.0	0.0
<input type="checkbox"/>	Crane						
<input type="checkbox"/>	Dozer						
<input type="checkbox"/>	Drill Rig Truck						
<input type="checkbox"/>	Drum Mixer						
<input type="checkbox"/>	Dump Truck						
<input type="checkbox"/>	Excavator						

Figure 8. Equipment dialogue box, with pull-down menu shown

As discussed in Section 3.1.4, new pieces of equipment may be added to a case and saved in an equipment file ([name].equ). When the user-defined equipment file is opened through the <Options> / <Modify the Equipment List> menu, user-defined equipment will appear in the equipment pull-down menu. The user activates and inactivates chosen equipment types by ticking and unticking the “Active” checkbox. The user is required to specify:

1. The type of reference emission levels to use (“Spec”, if applicable, or “Actual”, [the default is “Actual”]);
2. Distance to Receptor – that is, the distance between each type of equipment and the receptor being analyzed (the default distance is 50 feet); and
3. Estimated Shielding (in dBA) associated with each type of equipment (can leave the default value of 0.0 when not considering shielding). **NOTE: A Best Practices document is presented in Appendix A showing how to determine Estimated Shielding using several Rules of Thumb developed from experience at the CA/T project.**

When entering information for more than one piece of equipment, it may be desirable to copy information already entered. An entire equipment row may be highlighted and copied to another row, where copying multiple rows requires the selection of the same number of rows when pasting (this same functionality also applies to editable cells). Note: Entire rows may be selected by clicking on the row number.

The user may analyze up to 20 pieces of equipment at one time, and they may be included in any combination of different or identical equipment types.

3.2.3 Noise Metric and Noise Limit Criteria

While a case is open, the user can choose a noise metric (for baseline levels, noise limits, and calculated results) and enter the noise limit criteria for a local area. The user may edit the Lmax and L10 or Leq day, evening, and night noise limit criteria for a residential, commercial, or industrial area. Daytime, evening, and nighttime may represent any time periods the user wishes, but they are typically defined as 7 AM to 6 PM, 6 PM to 10 PM, and 10 PM to 7 AM, respectively. The criteria, used together with the baseline sound levels, define the noise limits for each receptor. CA/T Noise Limit Criteria are used as a default [1], but users may input their own criteria. The RCNM offers a metric pull-down menu and two or three command buttons to the right of the Receptor input dialogue box.

- Metric Pull-Down Menu

A pull-down menu allows the user to choose between the L10 or Leq metric, as in Figure 9. The chosen metric represents that used for the baseline levels, noise limits, and calculated results. For the noise limits and calculated results, Lmax values are also included.



Figure 9. Noise Metric pull-down menu

- Noise Limit Criteria Pop-up Dialogue Box

A pop-up dialogue box allows the user to specify Noise Limit Criteria information for an area being studied in a case, as in Figure 10. The flexibility of the Noise Limit Criteria allows RCNM users to incorporate criteria based on local noise ordinances and baseline levels measured for each receptor.

The dialog box displays the following data:

	Day		Evening		Night	
	Impact	Non-Impact	Impact	Non-Impact	Impact	Non-Impact
Residential	Value	Value	Value	Value	Value	Value
Commercial	N/A	N/A	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A	N/A	N/A

	Day		Evening		Night	
	Impact	Non-Impact	Impact	Non-Impact	Impact	Non-Impact
Residential	Exempt	Maximum	Baseline+	Baseline+	Conditional	Conditional
Commercial	Exempt	Maximum	N/A	N/A	N/A	N/A
Industrial	Exempt	Maximum	N/A	N/A	N/A	N/A

Figure 10. Noise Limit Criteria pop-up dialogue box

The user may populate this dialogue box with Noise Limit Criteria information derived from CA/T Construction Noise Control Spec. 721.560 [1] by clicking on the “Default” command button and clicking “Yes” when asked to load information from the default file, which is stored in the RCNM (see Table 2).

Table 2. Default Noise Limit Criteria

Land Use	Daytime (7 AM to 6 PM)		Evening (6 PM to 10 PM)		Nighttime (10 PM to 7 AM)	
	L10 Limit (dBA)	Lmax Limit (dBA)	L10 Limit (dBA)	Lmax Limit (dBA)	L10 Limit (dBA)	Lmax Limit (dBA)
Residential	maximum of 75 and baseline + 5 for non-impact* and exempt for impact**	85 for non-impact and 90 for impact	baseline + 5	85	if baseline <70 then baseline +5; if baseline ≥70 then baseline + 3	80
Commercial	maximum of 80 and baseline + 5 for non-impact and exempt for impact	N/A	N/A	N/A	N/A	N/A
Industrial	maximum of 85 and baseline+5 for non-impact and exempt for impact	N/A	N/A	N/A	N/A	N/A

* Non-impact equipment is equipment that generates a constant noise level while in operation.

** Impact Equipment is equipment that generates impulsive noise. Impulse Noise is defined as noise produced by the periodic impact of a mass on a surface, of short duration (generally less than one second), high intensity, abrupt onset and rapid decay, and often rapidly changing spectral composition.

Otherwise, the user may clear any information present in the dialogue box and specify new data in each cell. Clicking on the “Clear” command button will prompt the user to set all the cells in the dialogue box to Not Applicable (N/A), as in Figure 11. By clicking “Yes,” the user will populate all cells with N/A; by clicking “No,” the dialogue box will return to the data present before the user clicked “Clear.”

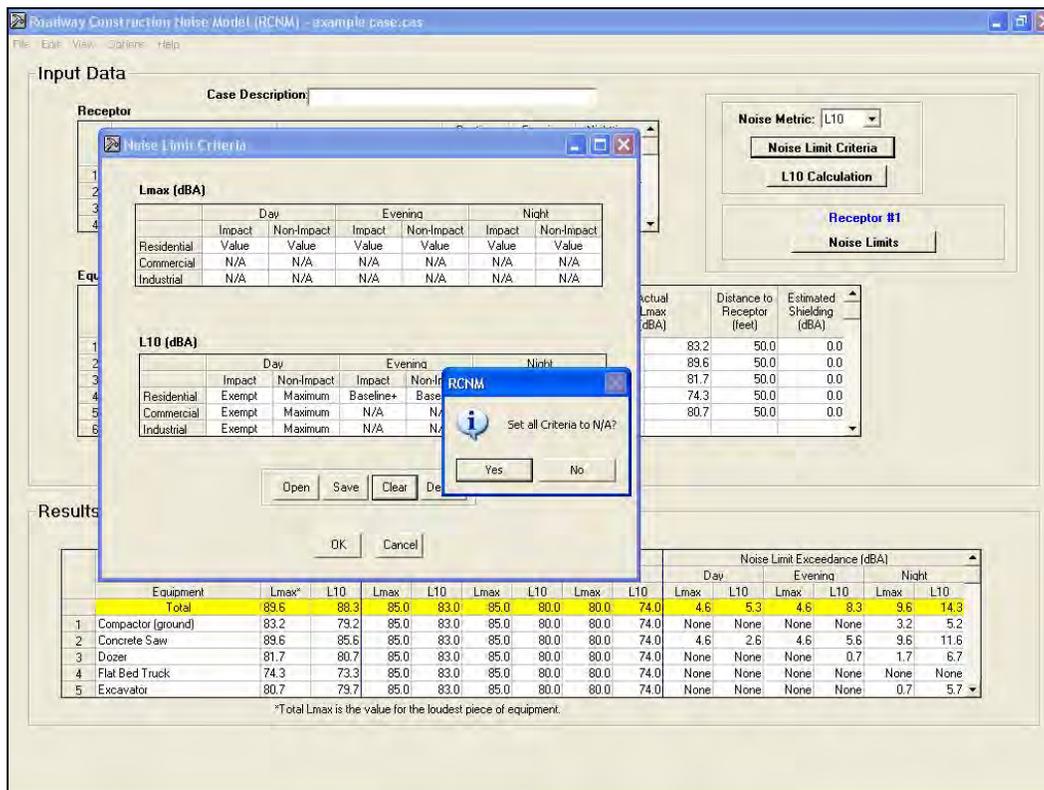


Figure 11. The Noise Limit Criteria “Clear” command button

Clicking on any cell in the Noise Limit Criteria dialogue box reveals a Noise Limit Criteria pull-down menu. Click on this pull-down menu to access the six options, as in Figure 12.

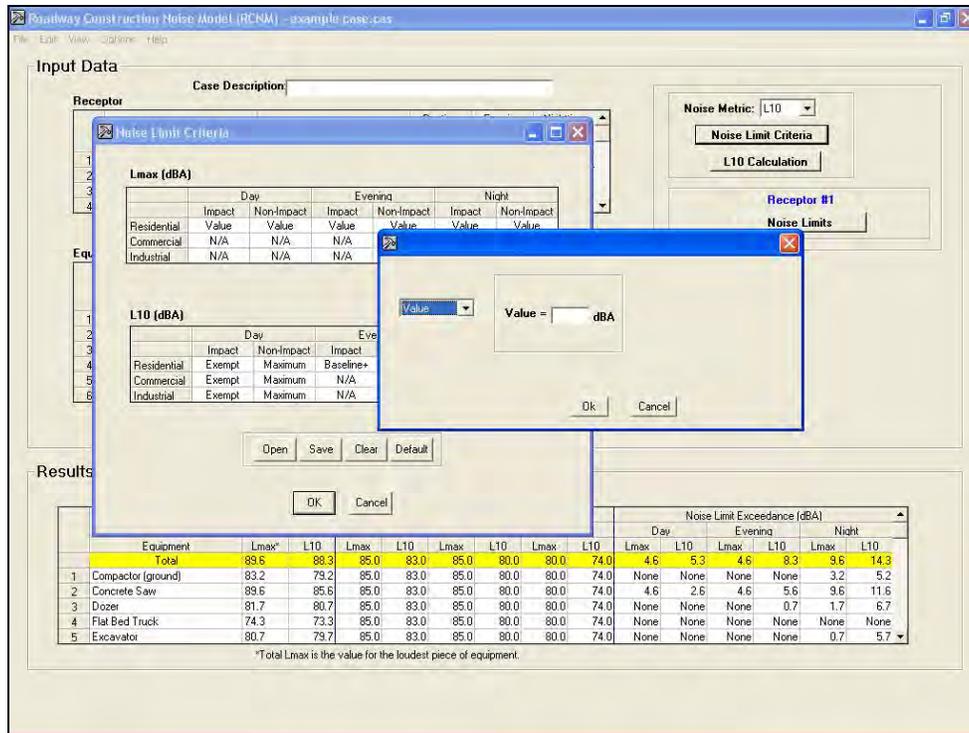


Figure 12. Noise Limit Criteria pull-down menu

Through these six options, the user specifies what Noise Limit Criteria changes, if any, are desirable in each cell. The six cell options are:

- i. Exempt (for the specified metric and land use, the equipment is exempt from noise limits)
- ii. N/A (for the specified metric and land use, the equipment does not have applicable noise limits)
- iii. Value (user is prompted to enter a value for which the noise level should not exceed), as in Figure 13:

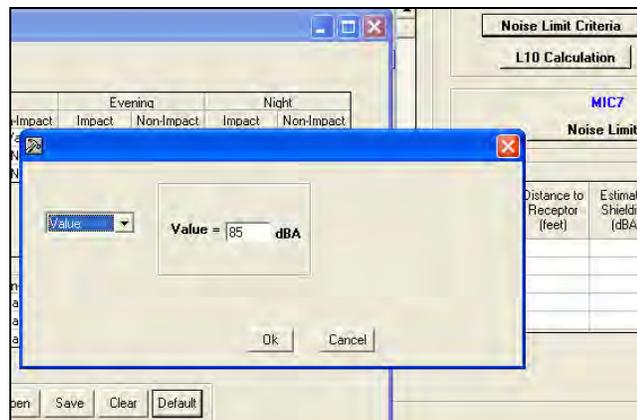


Figure 13. Noise Limit Criteria “Value” dialog box

- iv. Maximum (set value for which a noise level should not exceed to the maximum of two possible levels: A user-defined level or the Baseline level plus some user-defined increment), as in Figure 14:

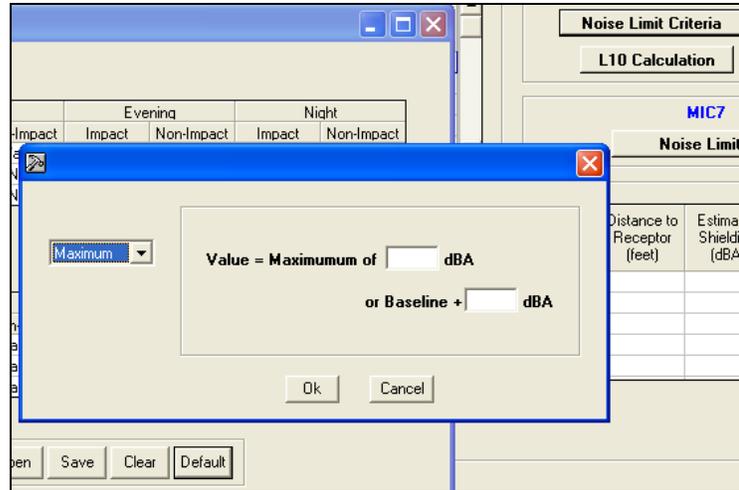


Figure 14. Noise Limit Criteria “Maximum” dialog box

- v. Baseline + (set value for which a noise level should not exceed to the Baseline level plus some user-defined increment), as in Figure 15:

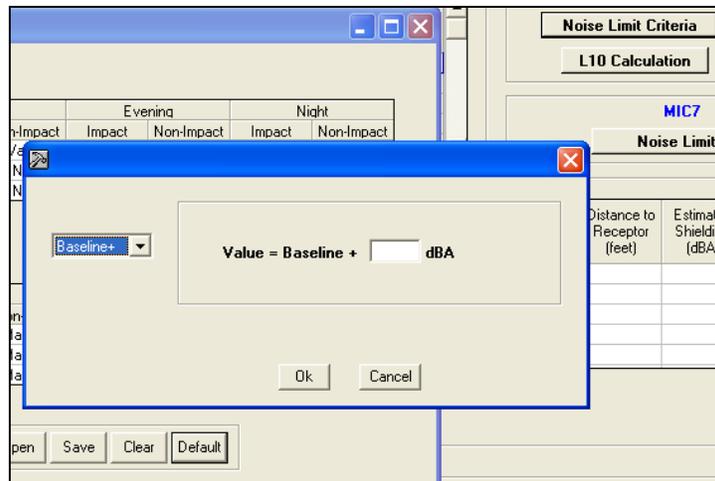


Figure 15. Noise Limit Criteria “Baseline +” dialog box

- vi. Conditional (set conditional value for which a noise level should not exceed; the user is prompted to enter the following information: 1. a comparison value, i.e., “If Baseline < [value], then ...”; 2. an increment value to add to the baseline level if the baseline level is *less than* the comparison value; 3. an increment value to add to the baseline level if the baseline level is *greater than or equal to* the comparison value), as in Figure 16:

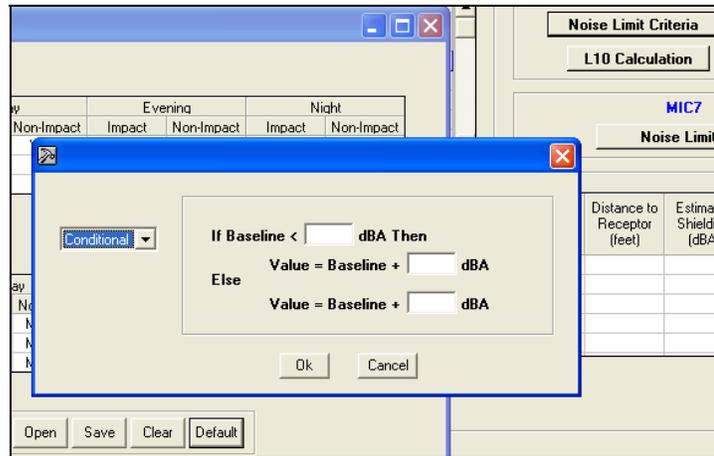


Figure 16. Noise Limit Criteria “Conditional” dialogue box

To see the current value of a cell, simply hold the mouse pointer over the cell. Once the user has specified values for all the cells in the Noise Limit Criteria dialogue box, these criteria can be saved in a criteria file ([name].cri) by clicking on the “Save” command button. The user will be prompted to give the criteria file a name. These criteria can thereafter be loaded into any case by clicking on the “Open” command button.

The user returns to the Noise Limit Criteria dialogue box by clicking “Ok”, and returns to the case by clicking “Ok” again.

- L10 Calculation (this button is present if the L10 metric is chosen)

By clicking on the “L10 Calculation” command button, the user can specify the adjustment factor used to calculate L10, as in Figure 17. By clicking the “Default” command button, the user automatically calls for an adjustment factor of 3 dBA, a value empirically derived from extensive CA/T Project data [2].

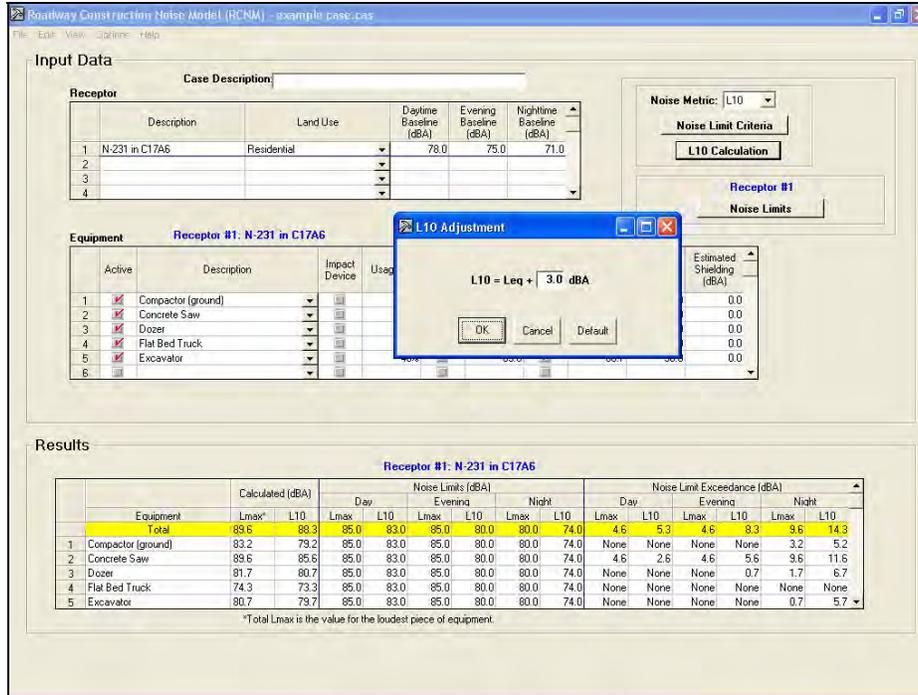


Figure 17. L10 Adjustment dialogue box

- Noise Limits

The “Noise Limits” command button opens a display window that looks exactly like the “Noise Limit Criteria” dialogue box, except that it is not editable, and the only button in the opened window is “Ok”. The values in the cells are based on the criteria set in the Noise Limit Criteria window and the baseline levels for the selected receiver, as in Figure 18. (If a receiver is not selected, the dialogue box is unavailable for viewing.)

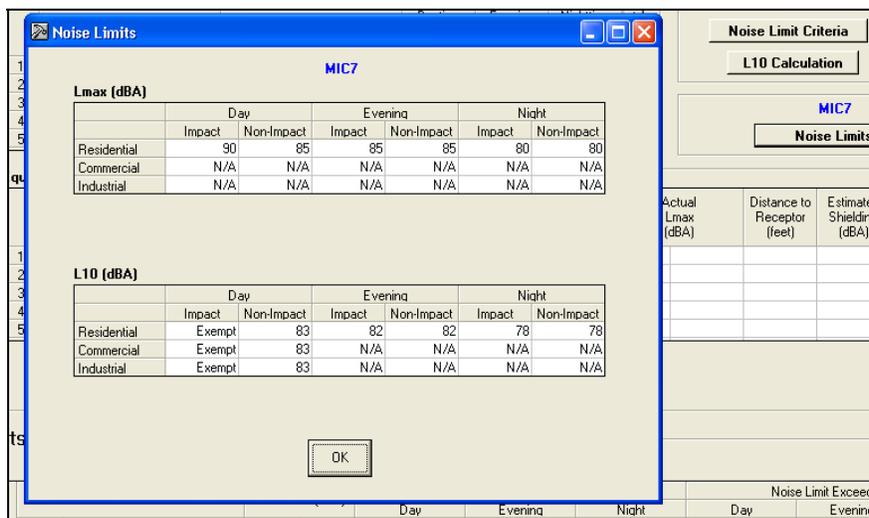


Figure 18. Noise Limits display window

Again, these limits may be changed by the user through the Noise Limit Criteria data entry window.

4 Results

Once the data for one receptor and up to 20 pieces of equipment have been specified in the Input Data portion of the main screen, the RCNM will automatically calculate the Results readout displayed in the bottom portion of the main screen, as in Figure 19. Any changes to the Input Data will automatically cause the RCNM to update the Results. The results for only one receptor will be displayed at a time; results for other receptors can be displayed by selecting the desired receptor in the Receptor window (click in any cell in the desired receptor row). Results for up to 100 receptors can be saved in a case. If Noise Limit Criteria information has been specified, the corresponding results (limits and exceedance values) will be updated as well.

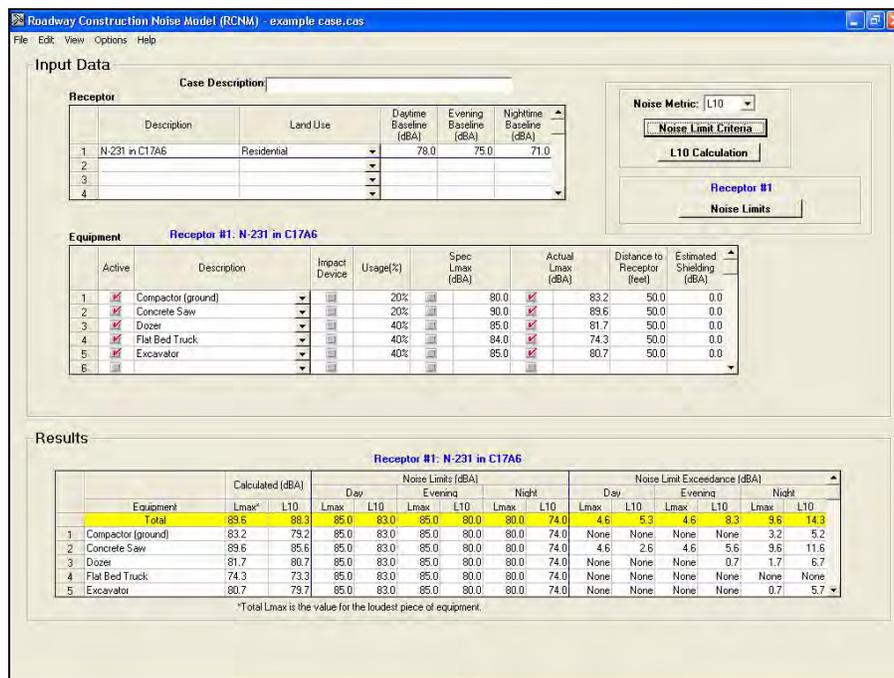


Figure 19. The RCNM main-page Results display

If there is insufficient input data for RCNM to compute a result, then a “Check Input Data” button will appear in the middle of the screen. Clicking on this button will provide the user with an indication of what additional input data are required.

The Results are presented in a read-only spreadsheet that contains the following fields, all applicable to the selected receptor:

- Equipment – the name/description of the equipment type
- Calculated Lmax – the calculated Lmax value for the equipment type. This is calculated from the “Spec” or “Actual” equipment Lmax, distance, and estimated shielding.

- Calculated Leq or L10 – the calculated Leq or L10 value (depending on what is selected in the Noise Metric pull-down menu) for the equipment type. This is calculated from the Calculated Lmax values, equipment usage factors, and selected adjustment factor.
- Day Lmax Noise Limit – the daytime Lmax noise limit for the equipment type.
- Day Leq or L10 Noise Limit – the daytime Leq or L10 noise limit for the equipment type.
- Evening Lmax Noise Limit – the evening Lmax noise limit for the equipment type.
- Evening Leq or L10 Noise Limit – the evening Leq or L10 noise limit for the equipment type.
- Night Lmax Noise Limit – the nighttime Lmax noise limit for the equipment type.
- Night Leq or L10 Noise Limit – the nighttime Leq or L10 noise limit for the equipment type.
- Day Lmax Noise Limit Exceedance – the daytime Lmax noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.
- Day Leq or L10 Noise Limit Exceedance – the daytime Leq or L10 noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.
- Evening Lmax Noise Limit Exceedance – the evening Lmax noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.
- Evening Leq or L10 Noise Limit Exceedance – the evening Leq or L10 noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.
- Night Lmax Noise Limit Exceedance – the nighttime Lmax noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.
- Night Leq or L10 Noise Limit Exceedance – the nighttime Leq or L10 noise limit exceedance for the equipment type. If the criteria limit was not exceeded, the value is “None”.

The user may scroll down to view equipment results that are not visible, or the <View> / <Zoom +> menu may be used to zoom in on the Results display only (see Section 3.1.3). There is a row at the top of the Results display, highlighted in yellow, that calculates the total for all equipment combined. This row is always visible during scrolling of the Results spreadsheet. (Calculations for totals are explained in Section 5.3.)

Again, users may export a case's input information and results to a comma separated value (CSV) report file ([name].csv) by choosing the <Export Results> option from the <File> menu. The user can also save the case results to a text file (TXT), which saves the results to a space-separated text format ([name].txt). Results may be saved for a single receptor or all receptors in the case.

5 Calculations in the RCNM

The RCNM uses the primary equation described in the CA/T Construction Noise Control Specification 721.560 [1] for the construction noise calculations.

5.1 Metric Calculation

$$\mathbf{L_{maxCalc}} = \mathbf{selected_L_{max}} - \mathbf{20\log(D/50)} - \mathbf{shielding} \quad (1)$$

where

selected_Lmax is the “Spec” or “Actual” maximum A-weighted sound level at 50 ft., listed in Table 1 for all pieces of equipment, in dBA,
 D is the distance between the equipment and the receptor, in feet,
 shielding is the insertion loss of any barriers or mitigation, in dBA (see Appendix A).

$$\mathbf{Leq} = \mathbf{L_{maxCalc}} + \mathbf{10\log(U.F.\%/100)} \quad (2)$$

where

U.F.% is the time-averaging equipment usage factor, in percent (see footnote 1 on p 7).

$$\mathbf{L10} = \mathbf{Leq} + \mathbf{3\ dBA\ adjustment\ factor} \quad (3)$$

The RCNM calculates L10 by adding 3 dBA to the Leq, where the 3 dBA default L10 adjustment factor was empirically derived by comparing extensive CA/T construction noise data. This adjustment factor may be changed in the RCNM at the user's discretion.

5.2 Exceedance Calculation

$$\mathbf{Daytime\ L_{max}\ Exceedance} = \mathbf{L_{maxCalc}} - \mathbf{Daytime\ L_{max}\ Limit} \quad (4)$$

$$\mathbf{Daytime\ Leq\ or\ L10\ Exceedance} = \mathbf{Leq\ or\ L10} - \mathbf{Daytime\ Leq\ or\ L10\ Limit} \quad (5)$$

$$\mathbf{Evening\ L_{max}\ Exceedance} = \mathbf{L_{maxCalc}} - \mathbf{Evening\ L_{max}\ Limit} \quad (6)$$

$$\mathbf{Evening\ Leq\ or\ L10\ Exceedance} = \mathbf{Leq\ or\ L10} - \mathbf{Evening\ Leq\ or\ L10\ Limit} \quad (7)$$

$$\mathbf{Nighttime\ L_{max}\ Exceedance} = \mathbf{L_{maxCalc}} - \mathbf{Nighttime\ L_{max}\ Limit} \quad (8)$$

$$\mathbf{Nighttime\ Leq\ or\ L10\ Exceedance} = \mathbf{Leq\ or\ L10} - \mathbf{Nighttime\ Leq\ or\ L10\ Limit} \quad (9)$$

5.3 Totals Calculation

The Total values in the Results section are determined in the following manner:

- 1) Total Leq = $10 \cdot \log(\Sigma (\text{individual equipment Leq values}^3))$
- 2) Total L10 = $10 \cdot \log(\Sigma (\text{individual equipment L10 values}^3))$
- 3) Total Lmax = Maximum among individual equipment Lmax values
- 4) Total noise limits and limit exceedances:
 - a. Determine whether or not total is impact or non-impact
 - i. If all the equipment is non-impact, label the total as non-impact.
 - ii. If all the equipment is impact, label the total as impact.
 - iii. If the equipment is mixed non-impact and impact, label the total as non-impact.
 - b. Determine total noise limits and limit exceedances the same way as with individual pieces of equipment (see Section 5.2), only use the calculated total sound levels (Total Leq or Total L10) and the impact or non-impact label according to the criteria specified in i through iii.

³ The Leq and L10 levels are energy averages.

6 References

- [1] Construction Noise Control Specification 721.560, Central Artery/Tunnel Project, Massachusetts Turnpike Authority, Boston, MA, 2002.
- [2] Thalheimer, Erich. "Construction Noise Control Program and Mitigation Strategy at the Central Artery/Tunnel Project". Noise Control Engineering Journal, Vol. 48, No. 5, pp 157-165, September - October 2000.
- [3] "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety", Environmental Protection Agency, ONAC 550/9-74-004. Washington, DC, March 1974.
- [4] "Power Plant Construction Noise Guide". Bolt, Beranek, and Newman Inc. and Empire State Electric Energy Research Corp., Report No. 3321. New York, NY May 1977.

Appendix A: Best Practices for Calculating Estimated Shielding for Use in the RCNM

This Appendix presents some simplified shielding factors for use in the RCNM. These suggestions are "rules of thumb" based on experience gathered by CA/T construction noise experts working in the field [2].

- 1) If a noise barrier or other obstruction (like a dirt mound) just barely breaks the line-of-sight between the noise source and the receptor, use 3 dBA.
- 2) If the noise source is completely enclosed OR completely shielded with a solid barrier located close to the source, use 8 dBA. If the enclosure and/or barrier has some gaps in it, reduce the effectiveness to 5 dBA.
- 3) If the noise source is completely enclosed AND completely shielded with a solid barrier located close to the source, use 10 dBA.
- 4) If a building stands between the noise source and receptor and completely shields the noise source, use 15 dBA.
- 5) If a noise source is enclosed or shielded with heavy vinyl noise curtain material (e.g., SoundSeal BBC-13-2" or equivalent), use 5 dBA.
- 6) If dilapidated windows are replaced with new acoustical windows, or quality internal or exterior storm sashes, use an incremental improvement of 10 dBA for an overall Outside-to-Inside Noise Reduction (OINR) of 35 dBA.
- 7) If work is occurring deep inside a tunnel using the "top-down" construction method (i.e. cover the tunnel work with concrete roadway decks to allow surface traffic and then excavate underneath the roof deck), use 12 dBA.

Appendix E

Traffic Impact Analysis

DRAFT TRAFFIC IMPACT ANALYSIS

FERRY LANDING

Coronado, California
February 8, 2018

LLG Ref. 3-16-2697

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EXECUTIVE SUMMARY

The Coronado Ferry Landing Project proposes the development of a 1-story building with a 7,500 square foot “quality restaurant” at the Ferry Landing Associates, LLC leasehold, which is located at 1201 First Street in the City of Coronado. The Project site is located within the Orange Avenue Area Subarea of Planning District 6 (Coronado Bayfront) of the certified Port Master Plan.

Linscott, Law & Greenspan, Engineers (LLG) completed a traffic impact analysis for the Project. The restaurant is calculated to generate 750 average daily trips (ADT) with 8 total AM peak hour trips (5 inbound/ 3 outbound) and 60 total PM peak hour trips (42 inbound/ 18 outbound). A total of seven (7) intersections and three (3) street segments were analyzed for the Weekday and Saturday peak and daily periods. A near-term cumulative analysis was also conducted, along with a buildout long-term analysis.

The results of the capacity analyses *show no significant direct or cumulative impacts* would occur with development of the Project. *No mitigation measures are required or proposed.*

The study also evaluates the available and required parking for the site. Based on the Port of San Diego’s published guidelines, the development will require 70 parking spaces. The lot currently provides 269 spaces, and the existing uses were observed to use 136 spaces during the weekend peak period. Therefore, a total of 206 spaces would be required to serve the existing + Project land uses. With 269 spaces available, a surplus of 63 spaces is calculated.

TABLE OF CONTENTS

SECTION	PAGE
1.0 Introduction.....	1
2.0 Project Description	3
3.0 Existing Conditions.....	5
3.1 Study Area	5
3.2 Existing Street Network.....	5
3.3 Existing Bicycle Network.....	6
3.4 Existing Pedestrian Conditions.....	6
3.5 Existing Transit Conditions	6
3.6 Existing Traffic Volumes.....	6
4.0 Analysis Approach and Methodology	10
4.1 Intersections	10
4.2 Street Segments.....	10
5.0 Significance Criteria	11
6.0 Analysis of Existing Conditions	12
6.1 Peak Hour Intersection Levels of Service.....	12
6.2 Daily Street Segment Levels of Service	12
7.0 Trip Generation/Distribution/Assignment	15
7.1 Trip Generation.....	15
7.2 Trip Distribution/Assignment.....	15
8.0 Existing + Project Analysis	19
8.1.1 Intersection Analysis.....	19
8.1.2 Segment Operations	19
9.0 Cumulative Projects.....	21
10.0 Analysis of Near-Term Scenarios.....	25
10.1 Existing + Cumulative Traffic	25
10.1.1 Intersection Analysis.....	25
10.1.2 Segment Operations	25
10.2 Existing + Cumulative Traffic + Project.....	25
10.2.1 Intersection Analysis.....	25
10.2.2 Segment Operations	25
11.0 Analysis of Long-Term Scenarios.....	28

11.1 Year 2035 Traffic Volumes 28

11.2 Year 2035 without Project Analysis 28

11.3 Year 2035 + Project Analysis 28

12.0 Parking..... 32

13.0 Conclusions..... 33

APPENDICES

APPENDIX

- A. Intersection and Segment Manual Count Sheets
- B. City of Coronado Roadway Classification Table
- C. Intersection Methodology and Analysis Sheets

LIST OF FIGURES

SECTION—FIGURE #	PAGE
Figure 1–1 Vicinity Map	2
Figure 2–1 Site Plan	4
Figure 3–1 Existing Conditions Diagram.....	8
Figure 3–2 Existing Traffic Volumes.....	9
Figure 7–1 Project Traffic Distribution.....	16
Figure 7–2 Project Traffic Volumes.....	17
Figure 7–3 Existing + Project Traffic Volumes	18
Figure 9–1 Cumulative Traffic Volumes	22
Figure 9–2 Existing + Cumulative Traffic Volumes.....	23
Figure 9–3 Existing + Cumulative + Project Traffic Volumes	24
Figure 11–1 Year 2035 Traffic Volumes.....	30
Figure 11–2 Year 2035 + Project Traffic Volumes.....	31

LIST OF TABLES

SECTION—TABLE #	PAGE
Table 3–1 Existing Traffic Volumes.....	7
Table 5–1 Traffic Impact Significant Thresholds.....	11
Table 6–1 Existing Intersection Operations.....	13
Table 6–2 Existing Street Segment Operations	14
Table 7–1 Project Trip Generation	15
Table 8–1 Existing + Project Intersection Operations	19
Table 8–2 Existing + Project Weekday Street Segment Operations.....	20
Table 8–2 Existing + Project Saturday Street Segment Operations	20
Table 10–1 Near-Term Intersection Operations	26
Table 10–2 Near-Term Weekday Street Segment Operations.....	27
Table 10–3 Near-Term Saturday Street Segment Operations.....	27
Table 11–1. Long-Term Weekday Street Segment Operations.....	29

DRAFT TRAFFIC IMPACT ANALYSIS

FERRY LANDING

Coronado, California

February 8, 2018

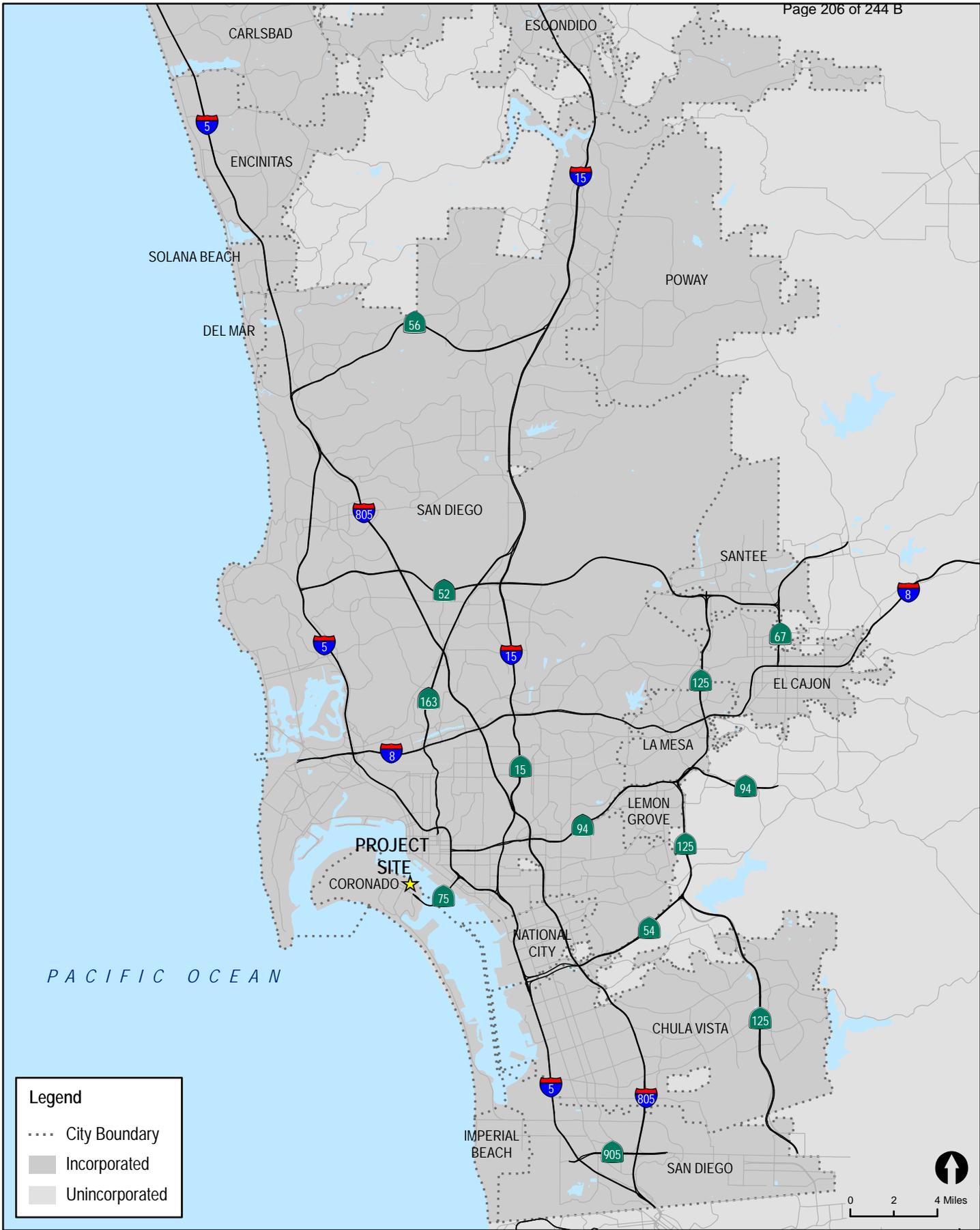
1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared the following transportation impact analysis to assess the impacts to the street system as a result of Ferry Landing project (“Project”), which proposes the development of a new 7,500 quality restaurant building on a vacant pad at the Coronado Ferry Landing site. The San Diego Unified Port District owns the property, and the site is located in the City of Coronado.

Figure 1-1 shows the Project vicinity and *Figure 1-2* illustrates, in more detail, the site location.

The transportation analysis presented in this report includes the following:

- Project Description
- Existing Conditions
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Project Trip Generation/Distribution/Assignment
- Cumulative Projects
- Analysis of Near-Term Scenarios
- General Plan (Year 2035) Analysis
- Parking Summary
- Conclusions



Legend

- City Boundary
- Incorporated
- Unincorporated



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Date: 02/02/18

Figure 1-1

Vicinity Map

FERRY LANDING RESTAURANT PROJECT

2.0 PROJECT DESCRIPTION

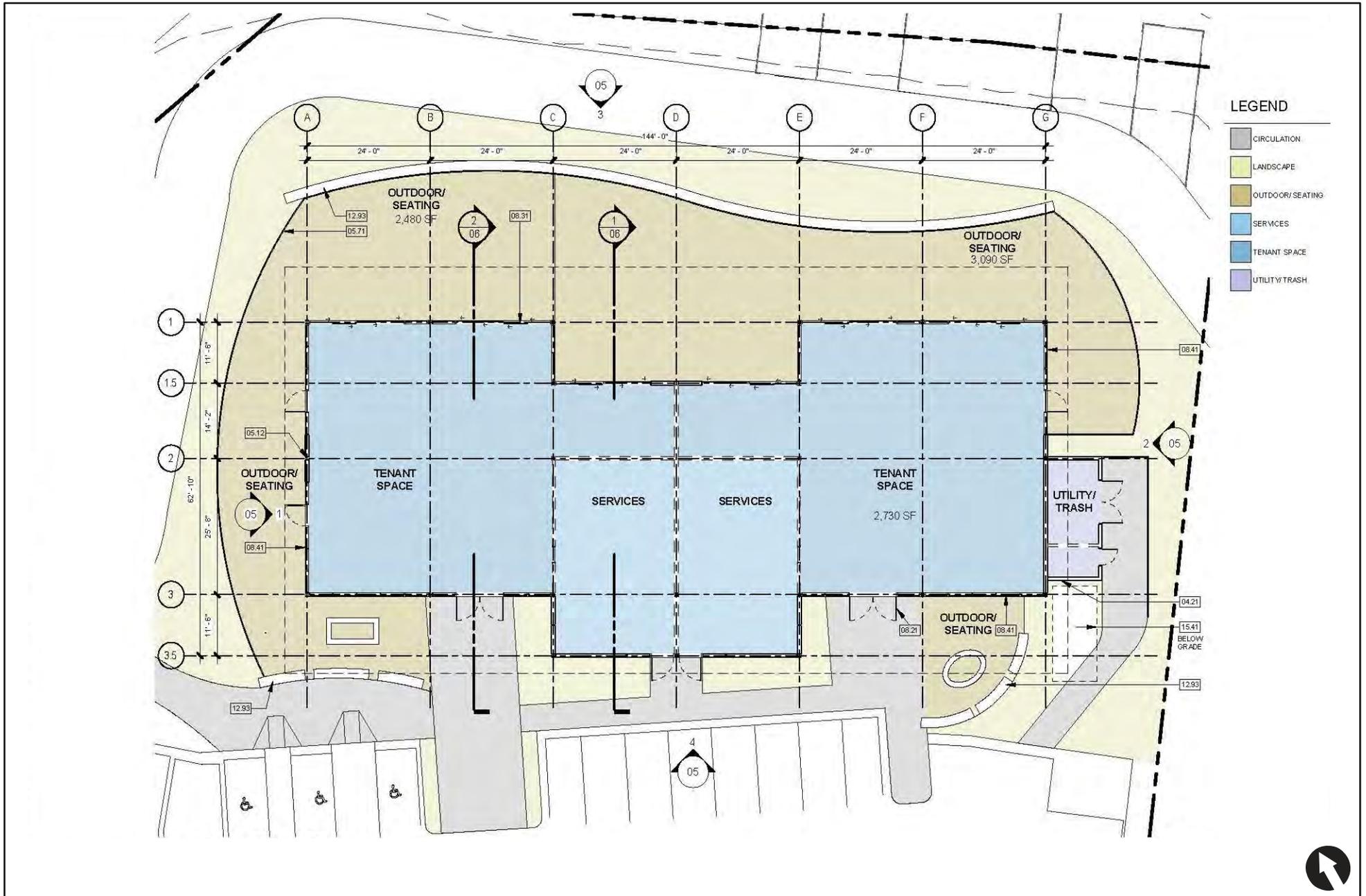
The Project involves development of a 1-story building with the option to operate one or two restaurants at the Ferry Landing Associates, LLC leasehold, which is located at 1201 First Street in the City of Coronado. *Figure 2-1* shows the site plan. The Project site is located within the Orange Avenue Area Subarea of Planning District 6 (Coronado Bayfront) of the certified Port Master Plan.

The Project applicant is Ferry Landing Associates, LLC (Applicant). The existing uses on the leasehold and the vicinity of the project site include an existing approximately 11,700 square foot (sf) 1-story restaurant, a surface parking lot, and a 6,500 sf 2-story office building. In addition, an existing 15-foot-wide shoreline public walkway is located along the perimeter of the Project site.

The proposed Project includes the construction of approximately 7,500 sf of indoor space and approximately 4,854 sf of outdoor space for restaurant use. The total number of restaurant seats for both spaces is anticipated to be approximately 300.

The Project is designed to allow for enhanced public access. Furthermore, the Project will provide pedestrian and bicyclist amenities adjoining the shoreline public walkway adjacent to the Project site.

It is anticipated that construction of the Project will be completed in approximately nine (9) months.



LEGEND

[Grey Box]	CIRCULATION
[Yellow Box]	LANDSCAPE
[Tan Box]	OUTDOOR/SEATING
[Light Blue Box]	SERVICES
[Blue Box]	TENANT SPACE
[Purple Box]	UTILITY/TRASH

Figure 2-1
Site Plan

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the Project requires an understanding of the existing transportation system within the project area. *Figure 3-1* shows an existing conditions diagram, including signalized intersections and lane configurations.

3.1 Study Area

The study area includes the following seven intersections and three street segments.

Intersections:

1. Orange Avenue / 4th Street
2. Orange Avenue / 3rd Street
3. Orange Avenue / 1st Street
4. B Avenue / 1st Street
5. Project Driveway / 1st Street
6. A Avenue / 1st Street
7. A Avenue / 3rd Street

Street Segments:

Orange Avenue

1. 4th Street to 3rd Street
2. 3rd Street to 1st Street

1st Street

3. Orange Avenue to Project Driveway

3.2 Existing Street Network

The following is a description of the existing street network in the study area.

Orange Avenue is a generally north-south roadway in the city of Coronado. In the study area it is currently constructed as a four-lane roadway with a landscaped center median and parallel parking available on both sides of the roadway. On the City of Coronado General Plan, Orange Avenue south of 3rd Street is classified as a Principal Arterial, while the roadway north of 3rd Street is classified as a Minor Arterial. However, both segments are functionally identical in terms of number of lanes, median type, on-street parking, and intersection spacing, which are the typical determinants of daily roadway capacity. There are no on-street bicycle facilities on Orange Avenue in the Project vicinity. The posted speed limit 25mph to 30mph.

1st Street is a generally east-west roadway constructed as a two-lane undivided roadway with Class II bicycle lanes and parallel parking on both sides of the street in the Project vicinity. The posted speed limit is 25 mph. 1st Street is classified as a Collector on the City of Coronado General Plan.

3.3 Existing Bicycle Network

In addition to the on-street bicycle facilities described in the previous section, the Project is located in close proximity to the Bayshore Bikeway (Silver Strand Bikeway), a Class I separated bicycle path.

3.4 Existing Pedestrian Conditions

Continuous sidewalks are provided along the north and south sides of 1st Street as well as Orange Avenue in the study area. Continental-style pedestrian crosswalk markings are present at the major intersections along 1st Street, as are pedestrian signal equipment at the signalized intersections.

3.5 Existing Transit Conditions

The Project area is served by the following Metropolitan Transit System (MTS) bus routes:

Route 904 travels with Coronado from Ferry Landing to Coronado City Hall via 2nd Street, 1st Street, and Orange Avenue with stops near the Project site at B Avenue / 1st Street. Service operates at hourly intervals from approximately 10 AM to 6 PM seven days a week.

Route 901 travels between Downtown San Diego and the Iris Avenue Transit Center via Coronado and Imperial Beach. Within the study area this route operates on 3rd Street/4th Street and Orange Avenue. The stops nearest to the Project site are located at Pomona Avenue / 3rd Street and 4th Street / B Avenue. Monday through Friday service is approximately 5AM to 1AM with generally 30 minute headways, with 15 minute headways during certain peak times and hourly headways in late evening hours. Saturday service is similar with fewer trips during typical weekday commuter hours. Sunday service is generally 5AM to 9PM with hourly headways, though southbound service runs later, to nearly midnight.

The Project is also located near the Coronado Ferry Landing which is the local terminus for ferry service to Downtown San Diego (Broadway Pier and Convention Center). Generally, the ferry runs daily with hourly service to Broadway Pier and thirty-minute service to Convention Center. The ferry also runs a commuter schedule Monday through Friday, with five trips between Coronado and the Broadway Pier in each direction during the AM and PM commuter periods, with free fares for morning commuters.

3.6 Existing Traffic Volumes

Table 3-1 is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted by Accurate Video Counts in March 2017. Peak hour turning movement counts at the study area intersections, including bicycle and pedestrian counts, were conducted in March 2017.

Figure 3-2 shows the Existing Weekday and Saturday Traffic Volumes. **Appendix A** contains the count sheets.

**TABLE 3-1
EXISTING TRAFFIC VOLUMES**

Street Segment	ADT ^a		Source: Date
	Weekday	Saturday	
Orange Avenue			
4 th Street to 3 rd Street	28,440	21,830	LLG: 2017
3 rd Street to 1 st Street	20,680	10,500	LLG: 2017
1st Street			
Orange Avenue to Project Driveway	6,270	5,420	LLG: 2017

Footnotes:

- a. Average Daily Traffic Volumes.

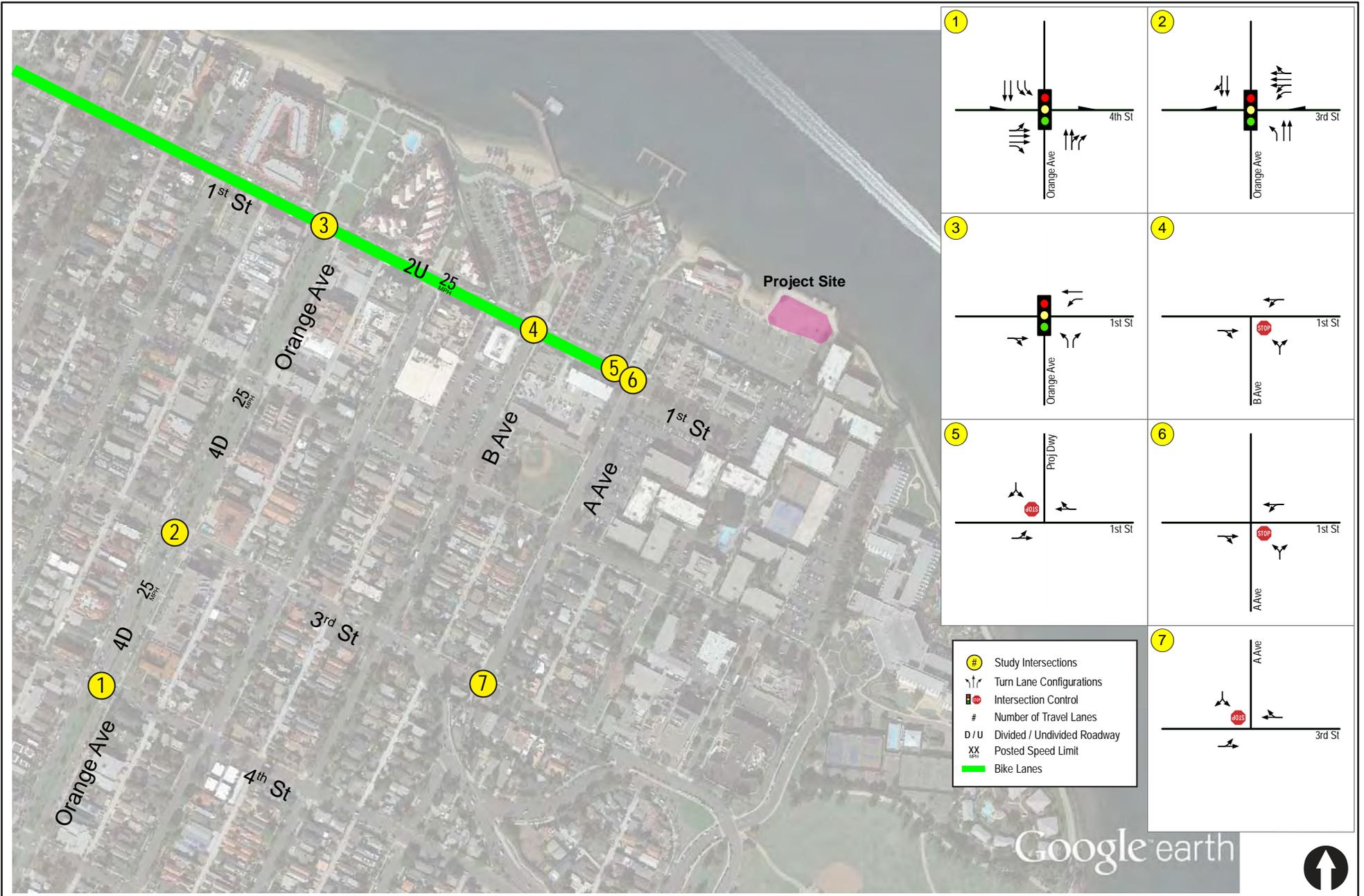


Figure 3-1

Existing Conditions Diagram

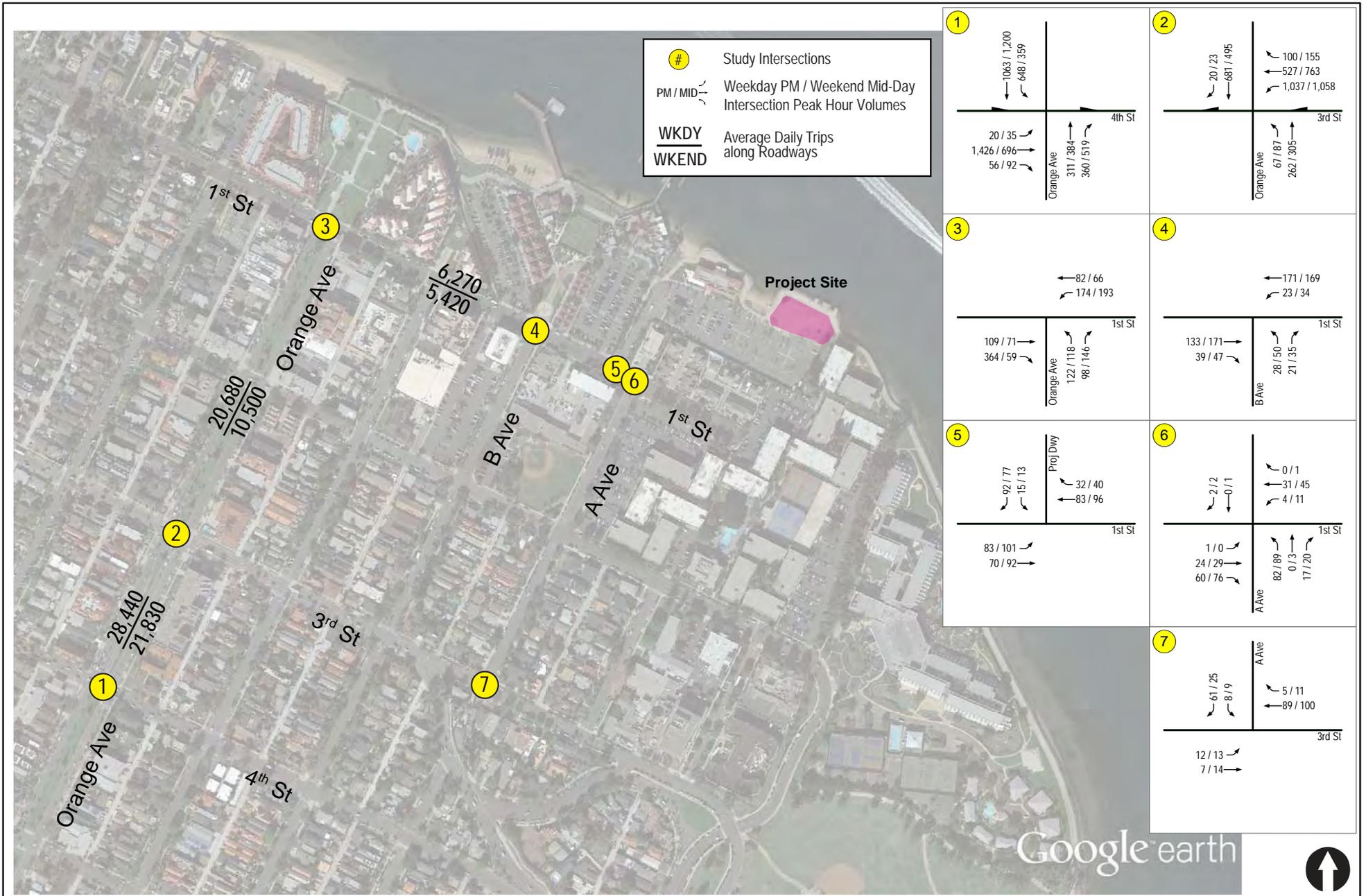


Figure 3-2

Existing Traffic Volumes

4.0 ANALYSIS APPROACH AND METHODOLOGY

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.1 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 10) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS).

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapters 19 and 20 of the *2010 Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 10) computer software.

4.2 Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Coronado's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of Coronado's *Roadway Classification, Level of Service, and ADT Table* is attached in **Appendix B**.

5.0 SIGNIFICANCE CRITERIA

A project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds shown in *Table 5-1* below for freeway segments, roadway segments, intersections, and ramp meter facilities are based on published San Diego Traffic Engineers' Council (SANTEC) guidelines. If the project exceeds the thresholds in *Table 5-1*, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated.

TABLE 5-1
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project ^a	Allowable Increase Due to Project Impacts ^b					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
D, E & F (or ramp meter delays above 15 minutes)	0.01	1	0.02	1	2	2 ^c

Footnotes:

- a. All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.
- b. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.
- c. The impact is only considered significant if the total delay exceeds 15 minutes.

General Notes:

1. V/C = Volume to Capacity Ratio
2. Speed = Arterial speed measured in miles per hour
3. Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
4. LOS = Level of Service

6.0 ANALYSIS OF EXISTING CONDITIONS

The following is a presentation and discussion of the HCM signalized and unsignalized intersection analyses and the volume/capacity street segment analyses for the study area street system under existing traffic conditions.

6.1 Peak Hour Intersection Levels of Service

Table 6-1 summarizes the existing intersection levels of service at the study area intersection during typical weekday and Saturday PM peak periods. As seen in **Table 6-1**, all intersections are calculated to operate at acceptable LOS C or better during the weekday and Saturday PM peak hours.

Existing intersection analysis sheets are in **Appendix C**.

6.2 Daily Street Segment Levels of Service

Table 6-2 summarizes the existing street segment levels of service for both typical weekday and Saturday conditions. As shown on **Table 6-2**, all study area street segments are calculated to operate at acceptable LOS C or better during weekday conditions and at LOS B or better under Saturday conditions.

**TABLE 6-1
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
1. Orange Avenue / 4 th Street	Signal	Weekday	25.9	C
		Saturday	14.7	B
2. Orange Avenue / 3 rd Street	Signal	Weekday	16.8	B
		Saturday	16.7	B
3. Orange Avenue / 1 st Street	Signal	Weekday	7.7	A
		Saturday	6.9	A
4. B Avenue / 1 st Street	MSSC ^c	Weekday	11.9	B
		Saturday	15.9	C
5. Project Driveway / 1 st Street	MSSC	Weekday	10.4	B
		Saturday	10.7	B
6. A Avenue / 1 st Street	MSSC	Weekday	9.8	A
		Saturday	10.4	B
7. A Avenue / 3 rd Street	MSSC	Weekday	9.3	A
		Saturday	9.3	A

Footnotes:

- a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. MSSC – Minor-Street Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6-2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) ^a	Weekday			Saturday		
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C
Orange Avenue								
4 th Street to 3 rd Street	4-lane Arterial	39,000	28,440	C	0.729	21,830	B	0.560
3 rd Street to 1 st Street	4-lane Arterial	39,000	20,680	B	0.530	10,500	A	0.269
1st Street								
Orange Avenue to Project Driveway	2-Lane Collector	9,750	6,270	C	0.643	5,420	B	0.556

Footnotes:

- a. Capacities based on City of Coronado Roadway Classification Table (See *Appendix B*).
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.

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7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project's trip generation calculations, and the distribution of Project trips throughout the study area.

7.1 Trip Generation

Table 7-1 shows a summary of the total project traffic generation for the proposed 7,500 SF restaurant Project. Based on SANDAG trip generation rates, the Project is calculated to generate approximately 750 ADT with 5 inbound/ 3 outbound trips during the AM peak hour and 42 inbound/ 18 outbound trips during the PM peak hour.

TABLE 7-1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour					
		Rate ^a	Volume	% of ADT	In:Out		Volume			% of ADT	In:Out		Volume	
					Split	In	Out	Total	Split		In	Out	Total	
Restaurant – Quality	7.5 KSF	100 /KSF	750	1%	60:40	5	3	8	8%	70:30	42	18	60	

Footnotes:

- a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

As shown above, the AM peak hour trip generation for the Project is minimal. Therefore, the peak hour intersection analyses in this traffic impact analysis look at the effects of Project traffic on the weekday and Saturday PM peak hour conditions.

7.2 Trip Distribution/Assignment

Trip distribution was based on existing traffic patterns observed in weekday and Saturday existing traffic counts, as well as reference to the traffic impact study prepared by Barton-Aschman Associates, Inc. for the 1989 FEIR, which also studied a restaurant use.

Figure 7-1 shows the Project Alternative 1 trip distribution and **Figure 7-2** shows the assigned Project traffic volumes. **Figure 7-3** shows the Existing + Project traffic volumes.

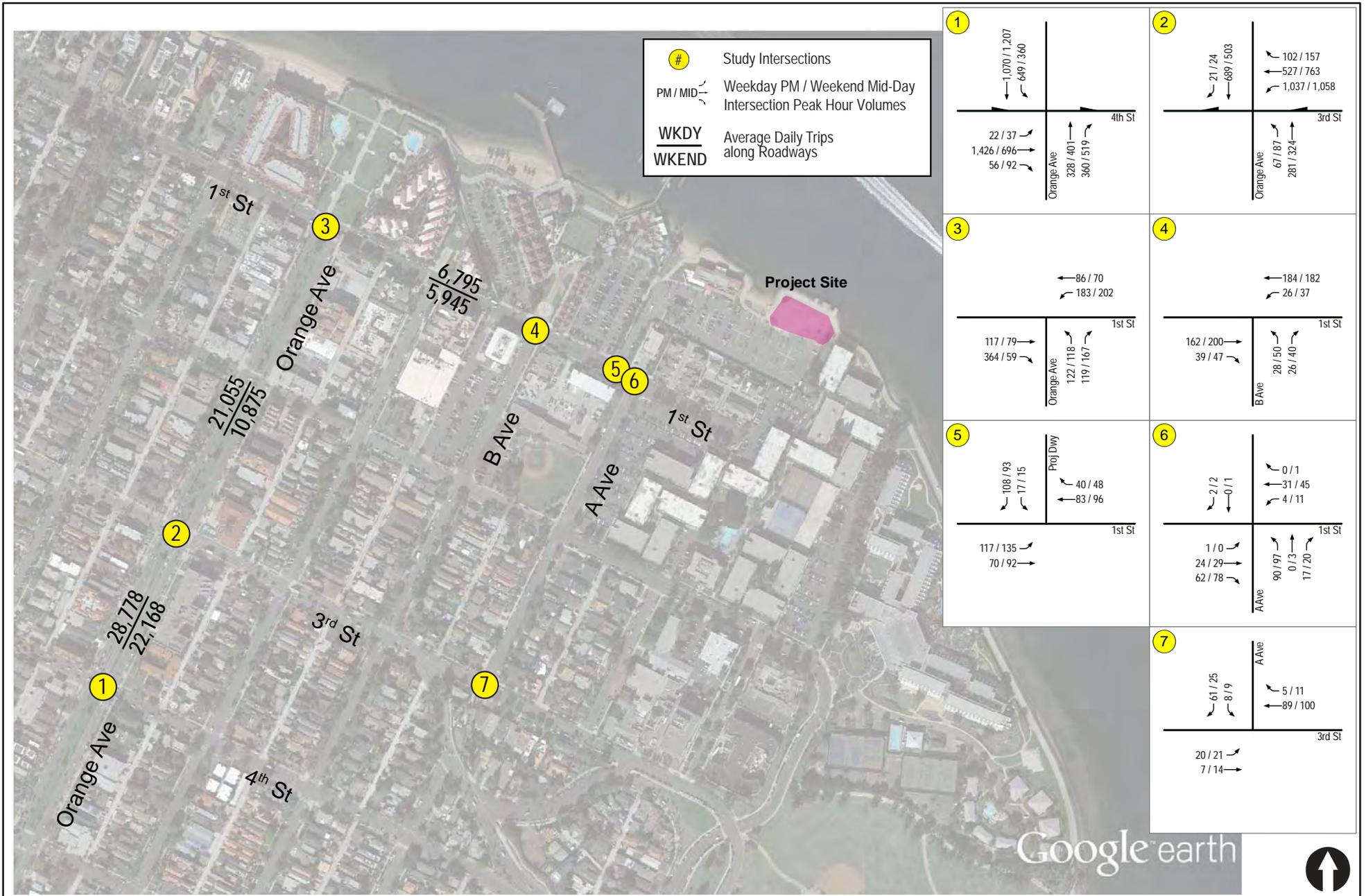
Figure 7-1 Project Traffic Distribution

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Figure 7-2

Project Traffic Volumes



8.0 EXISTING + PROJECT ANALYSIS

8.1.1 Intersection Analysis

Table 8-1 summarizes Existing + Project operations for both the weekday and Saturday PM peak hours. As shown in *Table 8-1*, with the addition of Project traffic, all intersections continue to operate at acceptable LOS C or better during both peak periods.

Existing + Project intersection analysis sheets are in *Appendix C*.

8.1.2 Segment Operations

Table 8-2 shows the Existing + Project street segment operations for a typical weekday. As shown in *Table 8-2*, all street segments continue to operate at acceptable LOS C or better with the addition of the Project to daily weekday traffic.

Table 8-3 shows the Existing + Project street segment operations for a typical Saturday. As shown in *Table 8-3*, all street segments continue to operate at acceptable LOS B or better with the addition of the Project to daily Saturday traffic.

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		
			Delay ^a	LOS ^b	Delay	LOS	Δ
1. Orange Avenue / 4 th Street	Signal	Weekday	27.1	C	27.2	C	0.1
		Saturday	15.0	B	15.2	B	0.2
2. Orange Avenue / 3rd Street	Signal	Weekday	17.3	B	17.5	B	0.2
		Saturday	17.2	B	17.4	B	0.2
3. Orange Avenue / 1st Street	Signal	Weekday	7.7	A	8.0	A	0.3
		Saturday	6.9	A	7.2	A	0.3
4. B Avenue / 1st Street	MSSC	Weekday	12.0	B	12.4	B	0.4
		Saturday	16.1	C	17.0	C	0.9
5. Project Driveway / 1st Street	MSSC	Weekday	10.4	B	10.8	B	0.4
		Saturday	10.8	B	11.2	B	0.4
6. A Avenue / 1st Street	MSSC	Weekday	9.8	A	9.8	A	0.0
		Saturday	10.4	B	10.5	B	0.1
7. A Avenue / 3rd Street	MSSC	Weekday	9.3	A	9.3	A	0.0
		Saturday	9.3	A	9.3	A	0.0

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- Δ denotes an increase in delay due to project.
- TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 8-2
EXISTING + PROJECT
WEEKDAY STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing + Project			
		ADT ^b	LOS	V/C	ADT	LOS	V/C	Δ
Orange Avenue								
4 th Street to 3 rd Street	39,000	28,440	C	0.729	28,778	C	0.738	0.009
3 rd Street to 1 st Street	39,000	20,680	B	0.530	21,055	B	0.540	0.010
1st Street								
Orange Avenue to Project Driveway	9,750	6,270	C	0.643	6,795	C	0.697	0.054

Footnotes:

- a. Capacities based on City of Coronado Roadway Classification & LOS table (See *Appendix B*).
- b. Average Daily Traffic
- c. Volume to Capacity ratio
- d. Level of Service
- e. Δ denotes a project-induced increase in the Volume to Capacity ratio

TABLE 8-2
EXISTING + PROJECT
SATURDAY STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing + Project			
		ADT ^b	LOS	V/C	ADT	LOS	V/C	Δ
Orange Avenue								
4 th Street to 3 rd Street	39,000	21,830	B	0.560	22,168	B	0.568	0.008
3 rd Street to 1 st Street	39,000	10,500	A	0.269	10,875	A	0.279	0.010
1st Street								
Orange Avenue to Project Driveway	9,750	5,420	B	0.556	5,945	B	0.610	0.054

Footnotes:

- a. Capacities based on City of Coronado Roadway Classification & LOS table (See *Appendix B*).
- b. Average Daily Traffic
- c. Volume to Capacity ratio
- d. Level of Service
- e. Δ denotes a project-induced increase in the Volume to Capacity ratio

9.0 CUMULATIVE PROJECTS

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG researched cumulative projects within the city of Coronado and determined there were no major development projects planned in the near future.

In order to account for these smaller projects and other unforeseen ambient growth in traffic volumes, LLG added a growth factor of 2% to existing volumes to arrive at near-term cumulative conditions.

Figure 9-1 shows the cumulative growth traffic volumes. *Figure 9-2* shows the existing + cumulative traffic volumes. *Figures 9-3* shows the existing + cumulative traffic volumes + Project traffic.

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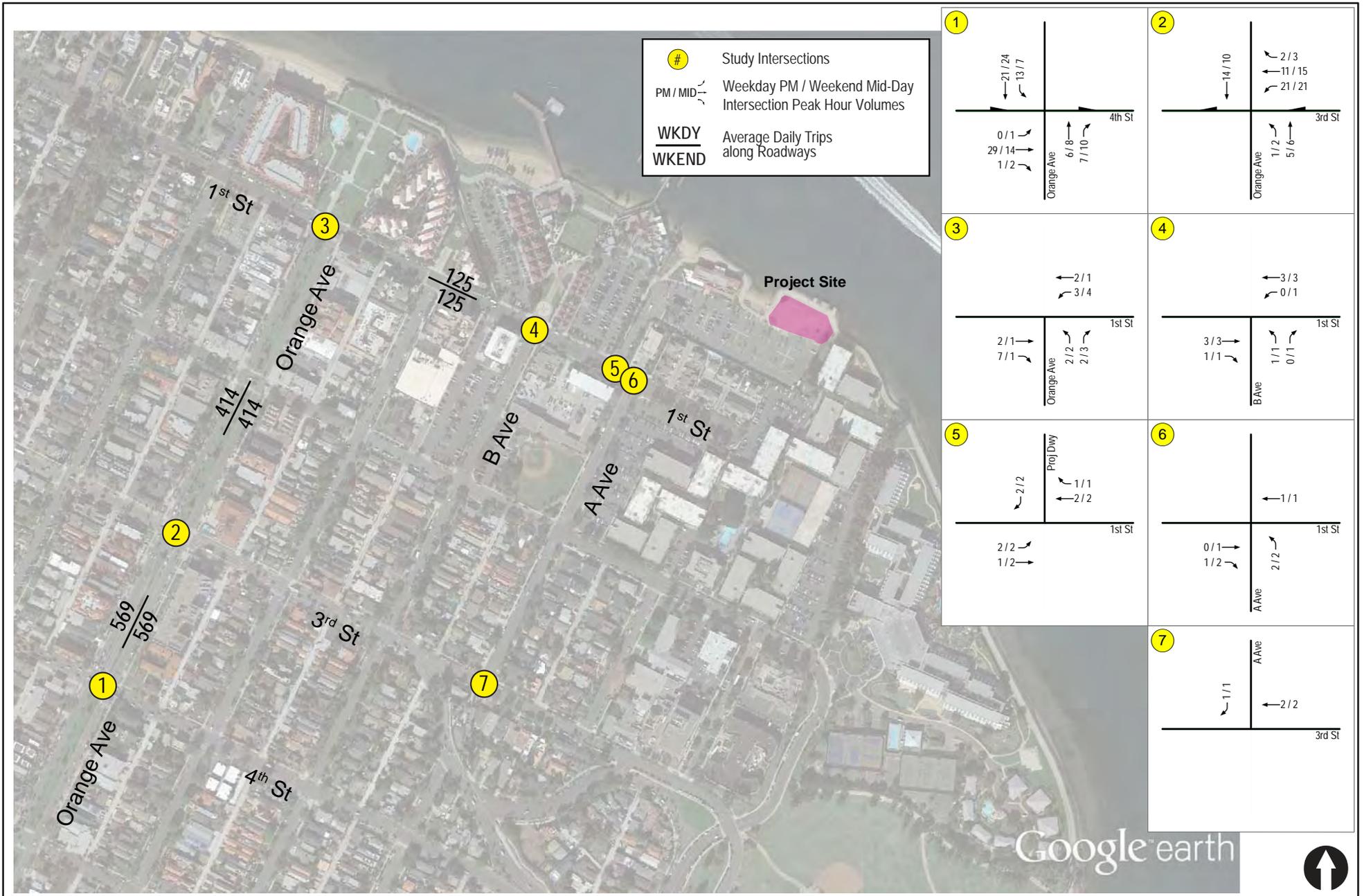


Figure 9-1

Cumulative Traffic Volumes

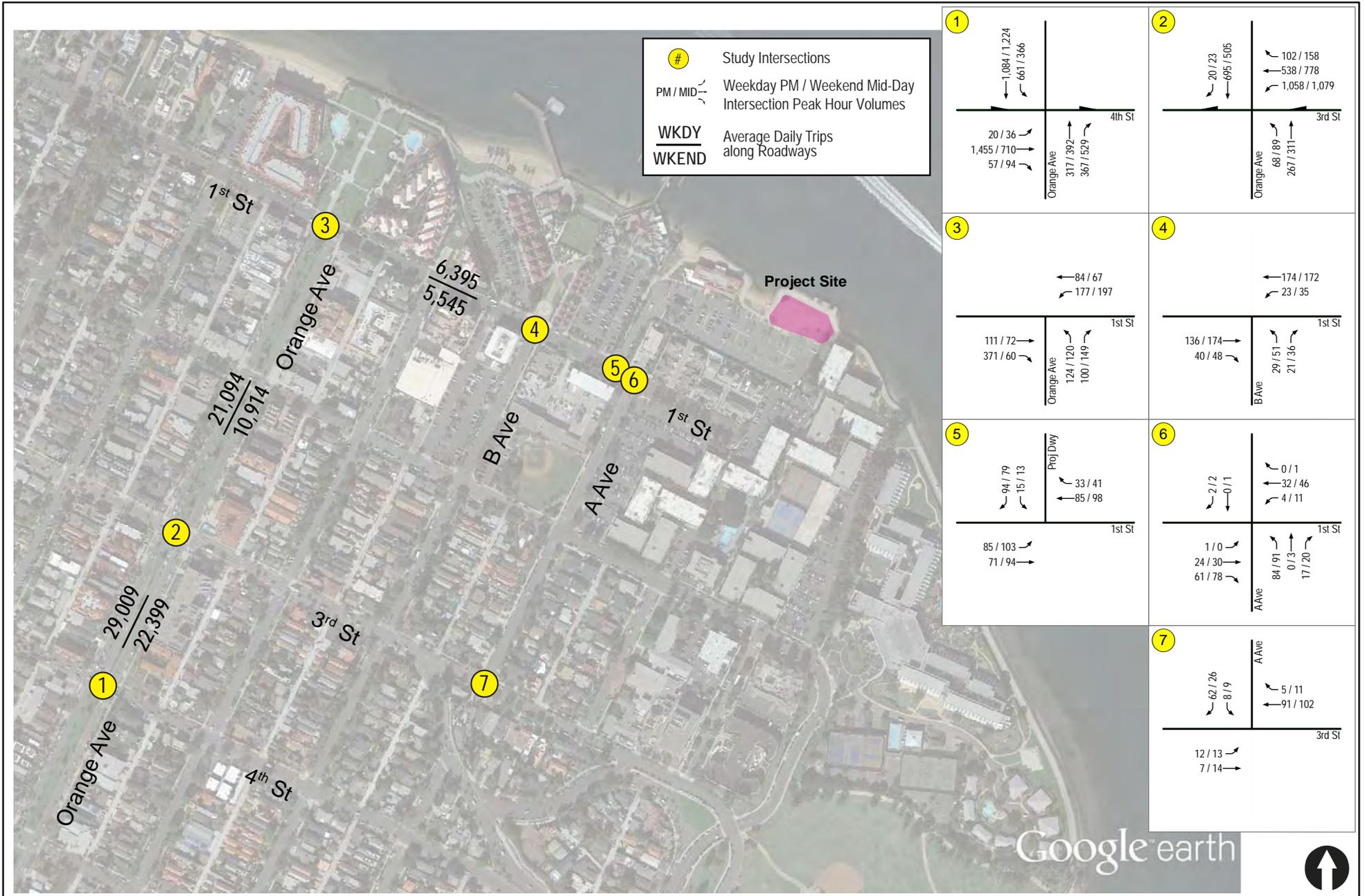


Figure 9-2
Existing + Cumulative Traffic Volumes
FERRY LANDING RESTAURANT PROJECT

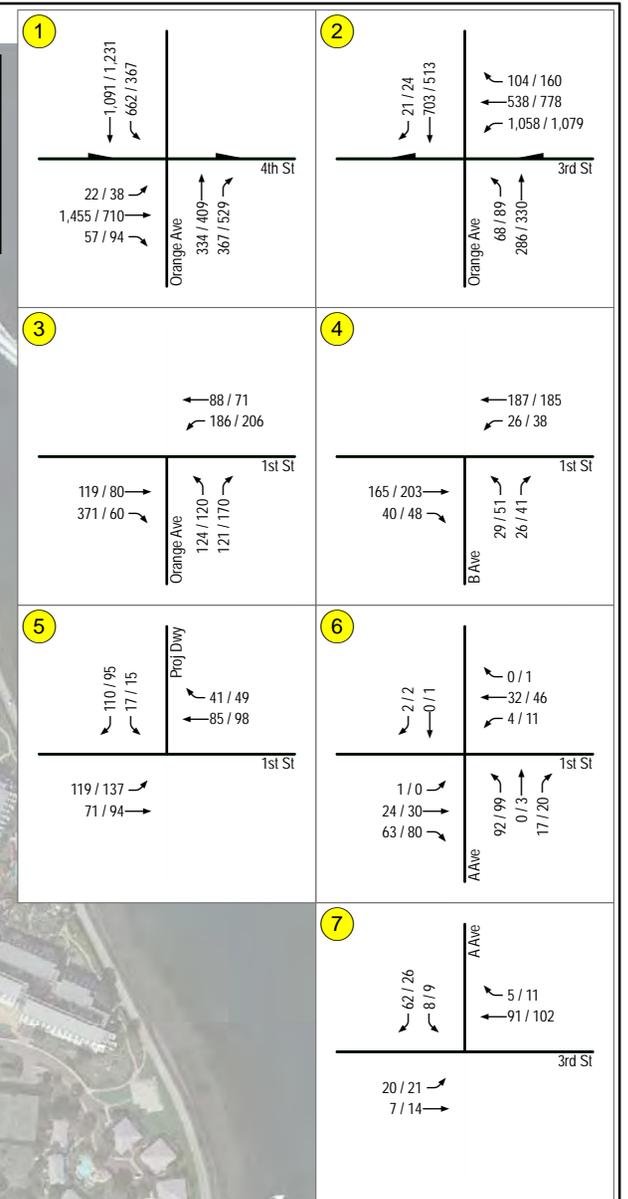
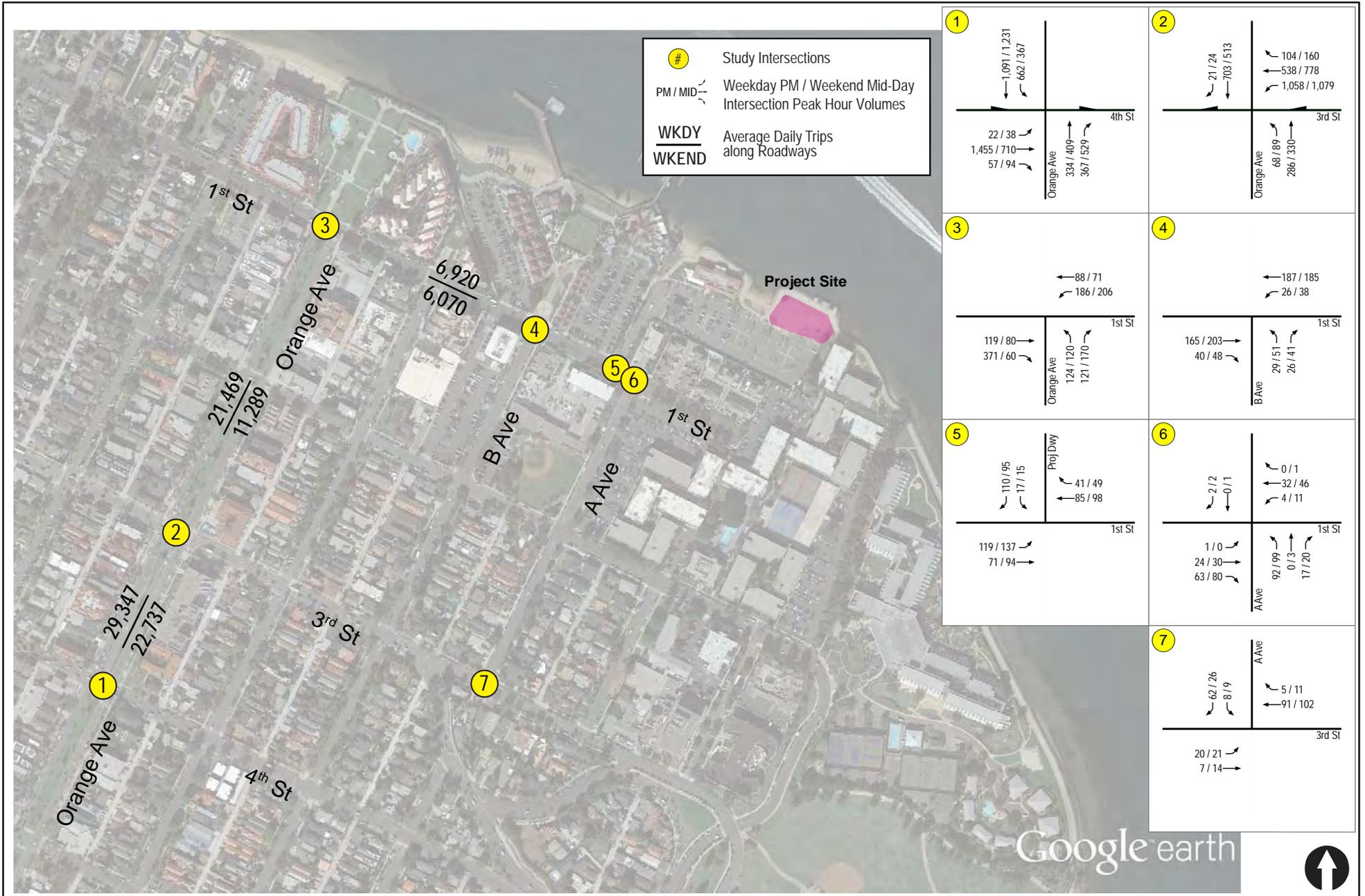


Figure 9-3

Existing + Cumulative + Project Traffic Volumes

10.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following is a discussion of the effects of near-term cumulative traffic volumes on the existing baseline, as well as the effect of the combination of near-term cumulative traffic and Project traffic.

10.1 Existing + Cumulative Traffic

10.1.1 Intersection Analysis

Table 10-1 summarizes the analysis of study area intersections under Existing + Cumulative traffic conditions. As shown in *Table 10-1*, all study area intersection are calculated to continue to operate at acceptable LOS C or better during Weekday and Saturday PM peak hours with the addition of cumulative traffic volumes.

Existing + Cumulative intersection analysis sheets are in *Appendix C*.

10.1.2 Segment Operations

Table 10-2 summarizes the daily street segment operations for study area street segments under Existing + Cumulative Weekday traffic conditions. As shown in *Table 10-2*, all segments are calculated to continue to operate at acceptable LOS C or better on a typical weekday with the addition of cumulative traffic volumes.

Table 10-3 summarizes the daily street segment operations for study area street segments under Existing + Cumulative Saturday traffic conditions. As shown in *Table 10-3*, all segments are calculated to continue to operate at acceptable LOS B or better on a typical Saturday with the addition of cumulative traffic volumes.

10.2 Existing + Cumulative Traffic + Project

10.2.1 Intersection Analysis

Table 10-1 also summarizes the study area intersection operations with the addition of both cumulative and Project traffic volumes. As shown in *Table 10-1*, all study area intersection are calculated to continue to operate at acceptable LOS C or better during Weekday and Saturday PM peak hours with the addition of both cumulative and Project traffic volumes.

Existing + Cumulative Traffic + Project intersection analysis sheets are in *Appendix C*.

10.2.2 Segment Operations

Table 10-2 also summarizes the study area Weekday segment operations with the addition of both cumulative and Project traffic volumes. As shown in *Table 10-2*, all study area segments are calculated to continue to operate at acceptable LOS C or better on a Weekday with the addition of both cumulative and Project traffic volumes.

Table 10-3 also summarizes the study area Saturday segment operations with the addition of both cumulative and Project traffic volumes. As shown in *Table 10-3*, all study area segments are calculated to operate at acceptable LOS C or better on a Weekday with the addition of both cumulative and Project traffic volumes.

TABLE 10-1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative		Existing + Cumulative + Project		
			Delay ^a	LOS ^b	Delay	LOS	Δ
1. Orange Avenue / 4 th Street	Signal	Weekday	27.1	C	27.2	C	0.1
		Saturday	15.0	B	15.2	B	0.2
2. Orange Avenue / 3rd Street	Signal	Weekday	17.3	B	17.5	B	0.2
		Saturday	17.2	B	17.4	B	0.2
3. Orange Avenue / 1st Street	Signal	Weekday	7.7	A	8.0	A	0.3
		Saturday	6.9	A	7.2	A	0.3
4. B Avenue / 1st Street	MSSC	Weekday	12.0	B	12.4	B	0.4
		Saturday	16.1	C	17.0	C	0.9
5. Project Driveway / 1st Street	MSSC	Weekday	10.4	B	10.8	B	0.4
		Saturday	10.8	B	11.2	B	0.4
6. A Avenue / 1st Street	MSSC	Weekday	9.8	A	9.8	A	0
		Saturday	10.4	B	10.5	B	0.1
7. A Avenue / 3rd Street	MSSC	Weekday	9.3	A	9.3	A	0
		Saturday	9.3	A	9.3	A	0

Footnotes:

- a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

**TABLE 10-2
NEAR-TERM WEEKDAY STREET SEGMENT OPERATIONS**

Street Segment	Existing Capacity (LOS E) ^a	Existing + Cumulative			Existing + Cumulative + Project			
		ADT ^b	LOS	V/C	ADT	LOS	V/C	Δ
Orange Avenue								
4 th Street to 3 rd Street	39,000	29,009	C	0.744	29,347	C	0.752	0.008
3 rd Street to 1 st Street	39,000	21,094	B	0.541	21,469	B	0.550	0.009
1st Street								
Orange Avenue to Project Driveway	9,750	6,395	C	0.656	6,920	C	0.710	0.054

Footnotes:

- Capacities based on City of Coronado Roadway Classification & LOS table (See *Appendix B*)
- Average Daily Traffic
- Volume to Capacity ratio
- Level of Service
- Δ denotes a project-induced increase in the Volume to Capacity ratio

**TABLE 10-3
NEAR-TERM SATURDAY STREET SEGMENT OPERATIONS**

Street Segment	Existing Capacity (LOS E) ^a	Existing + Cumulative			Existing + Cumulative + Project			
		ADT ^b	LOS	V/C	ADT	LOS	V/C	Δ
Orange Avenue								
4 th Street to 3 rd Street	39,000	22,399	B	0.574	22,737	B	0.583	0.009
3 rd Street to 1 st Street	39,000	10,914	A	0.280	11,289	A	0.289	0.009
1st Street								
Orange Avenue to Project Driveway	9,750	5,545	B	0.569	6,070	C	0.623	0.054

Footnotes:

- Capacities based on City of Coronado Roadway Classification & LOS table (See *Appendix B*)
- Average Daily Traffic
- Volume to Capacity ratio
- Level of Service
- Δ denotes a project-induced increase in the Volume to Capacity ratio

11.0 ANALYSIS OF LONG-TERM SCENARIOS

11.1 Year 2035 Traffic Volumes

Long-term traffic volume forecasting conducted using the SANDAG Series 12 Year 2035 traffic model.

Forecast model volumes were highly variable but generally below existing, both as compared to the SANDAG Baseline (Year 2008) model and actual ground count (Year 2017) ADT volumes. Among the study area segments, the Orange Avenue corridor south of 3rd Street carries the greater amount of traffic, and is therefore less subject to variability in the forecast model. Therefore, the forecasted change in traffic volumes observed on this corridor was applied to smaller, local street segments in the study area to derive Year 2035 traffic volumes.

Figure 11-1 shows the Year 2035 traffic volume ADT's. *Figure 11-2* shows the Year 2035 + Project traffic volume ADT's.

11.2 Year 2035 without Project Analysis

Year 2035 daily street segment operations are shown in *Table 11-1*. As seen in *Table 11-1*, the study area street segments are calculated to operate at LOS B or better in Year 2035.

11.3 Year 2035 + Project Analysis

Year 2035 + Project daily street segment operations are also shown in *Table 11-1*. As seen in *Table 11-1*, with the addition of the Project, all study area street segments are calculated to continue to operate at LOS B or better.

TABLE 11-1.
LONG-TERM WEEKDAY STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Year 2035			Year 2035 + Project			
		ADT ^b	LOS	V/C	ADT	LOS	V/C	Δ
Orange Avenue								
4 th Street to 3 rd Street	39,000	19,300	B	0.495	19,638	B	0.504	0.009
3 rd Street to 1 st Street	39,000	14,100	A	0.362	14,475	A	0.371	0.009
1st Street								
Orange Avenue to Project Driveway	9,750	4,300	A	0.441	4,825	B	0.495	0.054

Footnotes:

- a. Capacities based on City of Coronado Roadway Classification & LOS table (See *Appendix B*)
- b. Average Daily Traffic
- c. Volume to Capacity ratio
- d. Level of Service
- e. Δ denotes a project-induced increase in the Volume to Capacity ratio

XX,XXX Average Daily Trips
along Roadways

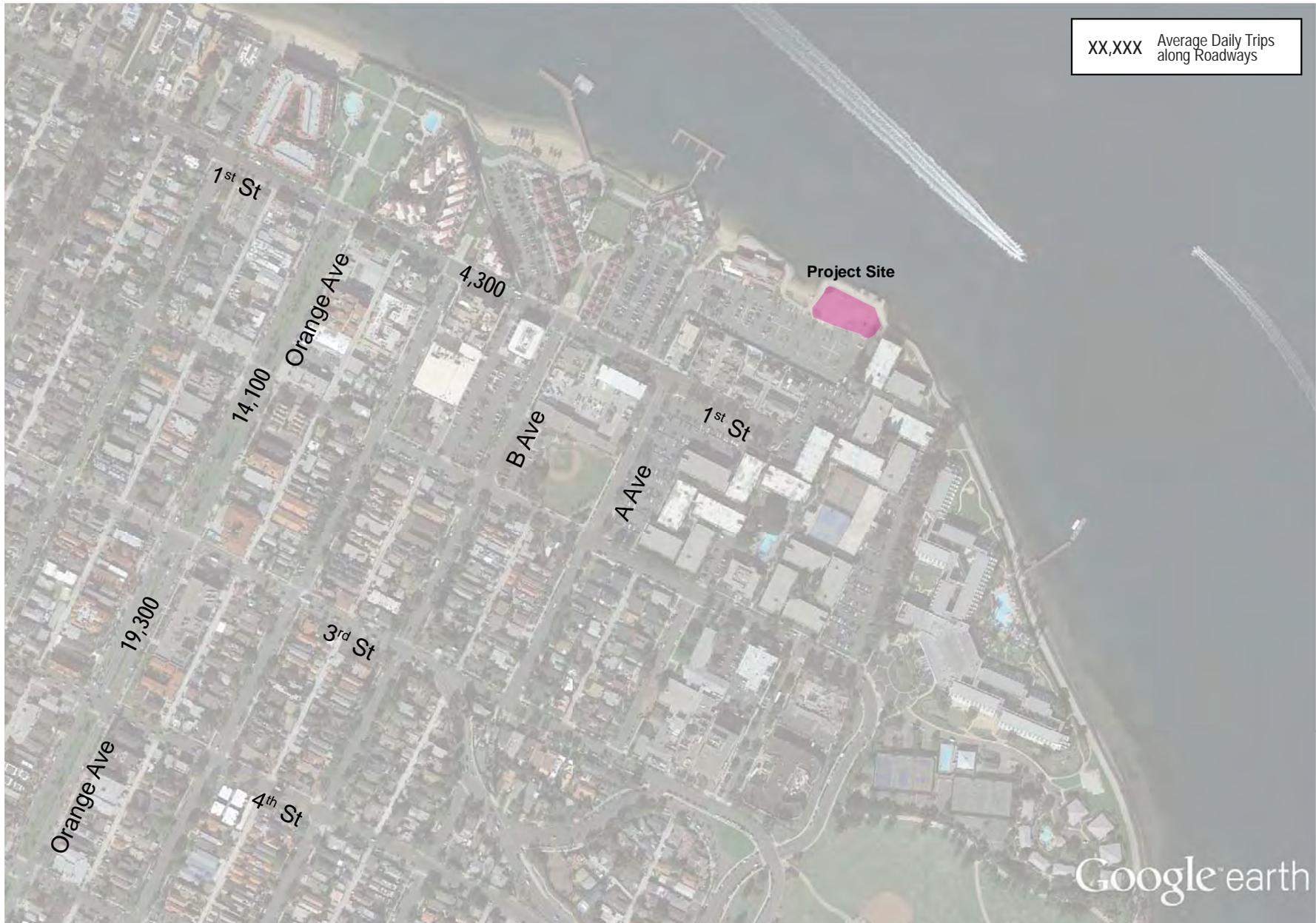


Figure 11-1

Year 2035 without Project Traffic Volumes

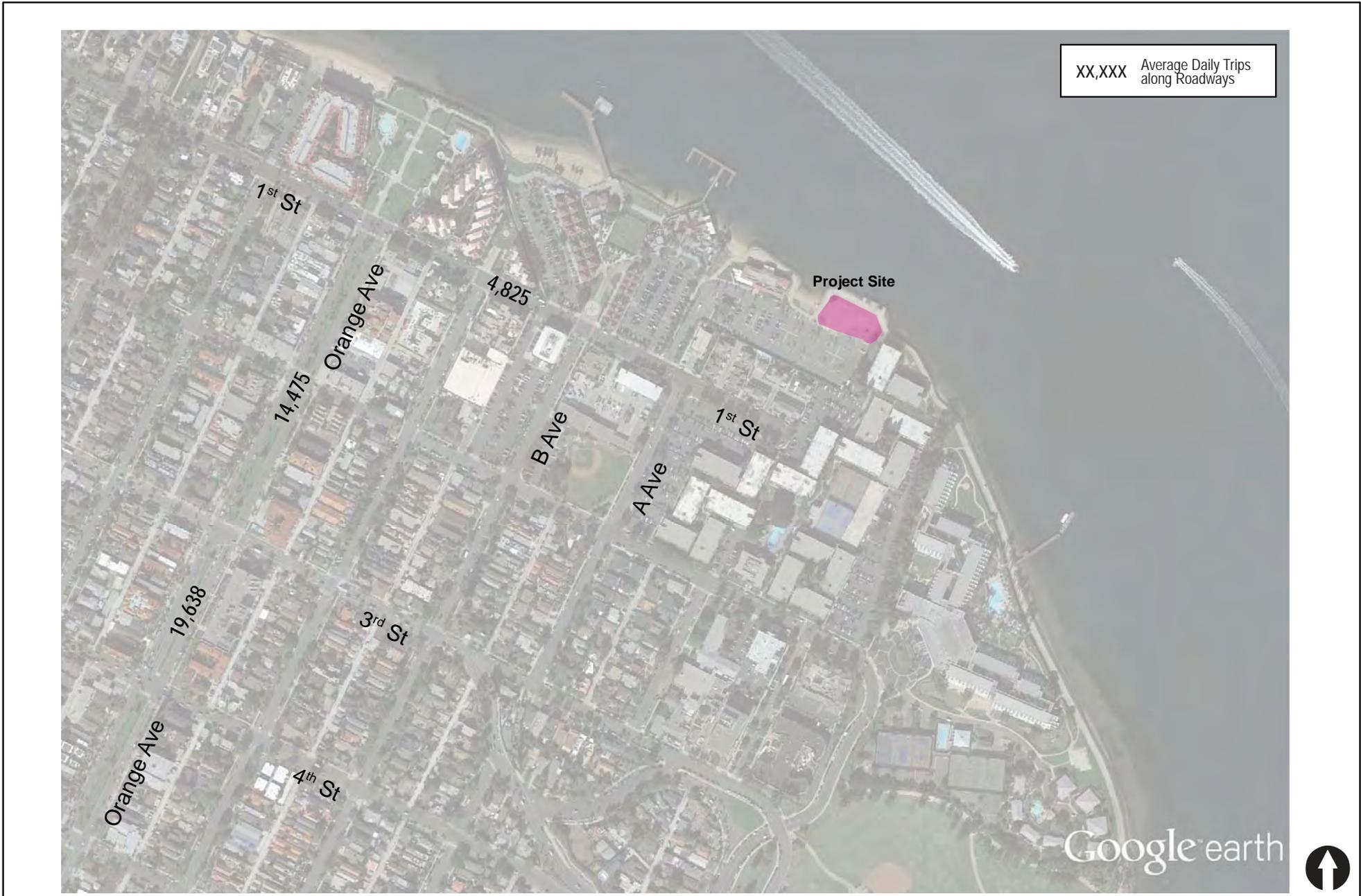


Figure 11-2

Year 2035 with Project Traffic Volumes

13.0 CONCLUSIONS

The 7,500 SF restaurant project's traffic impacts were evaluated in the near-term and long-term conditions. The results of the intersection and street segment analysis revealed no significant near-term direct or long-term cumulative impacts, based on the published significance criteria. No mitigation measures are required or proposed.

The Project will require 70 parking spaces based on the published guidelines. A 63-space surplus is calculated to occur with development of the Project in addition to current development that shares the existing 269-space lot. No parking impacts are calculated.

End of Report

MEMORANDUM

To:	Mr. Aaron Brownwood Helix Environmental, Inc.	Date:	June 11, 2018
From:	Chris Mendiara LLG, Engineers	LLG Ref:	3-16-2697
Subject:	Coronado Ferry Landing (Project) – Left-Turn Mitigation Requirement		

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Linscott, Law & Greenspan, Engineers (LLG) has prepared the following memo regarding the need for a dedicated left-turn pocket from 1st Street into the Project site, located at 1201 1st Street, as conditioned in the Final Environmental Impact Report (FEIR) dated December 1989.

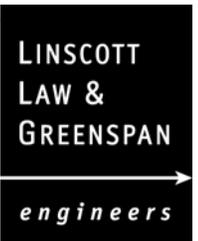
The Project's 1989 FEIR evaluated the effects of what was then called "The Wharf Development" on the current Project site. This proposal envisioned a total site development of 23,000 square feet (SF) of full service (quality) restaurant use, 9,000 SF of fast food restaurant use, and 43,000 SF of retail and office use. With this full suite of uses, the FEIR traffic analysis determined that a dedicated left-turn lane should be installed from 1st Avenue to the Project site at the site's driveway.

In the intervening years from 1989 to present, the site has developed with 11,700 SF of quality use, 6,500 SF of office use, and a public parking lot. This current development envelope represents approximately 50% of the original quality restaurant use, and only 15% of the originally proposed office. Notably, the very high traffic-generating fast-food use has not been developed, and is no longer proposed. The fast-food component alone would generate 5,850 average daily trips (ADT) at the site's driveway to 1st Street, based on the latest SANDAG trip generation rates.

LLG completed a draft traffic impact analysis (February 2018) for the current development proposal to add the additional 7,500 SF of quality restaurant use, which generates 750 ADT at the driveway. Combined with the existing 11,700 SF of the same use, the total quality restaurant use post-project would be 19,200 SF, or 83% of the original quality restaurant use analyzed in the FEIR. LLG's analysis evaluated Project and cumulative project effects on the Project driveway with the existing shared-thru/left-turn lane configuration in question.

The results of the LLG's analysis showed that with existing development traffic, the additional Project traffic and cumulative developments' traffic in the area, the driveway intersection would continue to operate at acceptable overall Level of Service (LOS) B during the weekday and Saturday peak hours. Based on this analysis, no Project impacts were identified, and no improvements to the driveway are required or proposed.

Mr. Aaron Brownwood
June 11, 2018
Page 2



Attachment A shows the results of the intersection analysis from LLG’s February 2018 TIA.

At Helix Environmental’s request, LLG reviewed the more granular “LOS by movement” for the same driveway intersection. This consists of reviewing the LOS for each of the intersection approaches as follows:

- Eastbound shared left/thru (includes inbound left-turns from eastbound 1st Street to the site);
- Westbound shared thru/right (includes inbound right-turns from westbound 1st Street to the site), and;
- Southbound left and right (includes outbound turns to eastbound/westbound 1st Street

Attachment B shows the summary sheets for the individual LOS by movement described above.

Upon review of these individual Levels of Service, LLG confirms that the shared thru-left turn movement in question operates at LOS A. Thus, LLG confirms that a dedicated left-turn lane from 1st Street to the site is not required with the development of the additional 7,500 SF of quality restaurant use.

Please don’t hesitate to call us at 858-300-8800 if you have any further questions.

cc: File
Attachments: **Attachment A**: Table 10-1 (LLG Ferry Landing Draft TIA, 2/8/2018)
Attachment B: LOS by Movement Results, 1st Street/Project Driveway

ATTACHMENT A

TABLE 10-1 (LLG FERRY LANDING DRAFT TIA, 2/8/2018)

TABLE 10-1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative		Existing + Cumulative + Project		
			Delay ^a	LOS ^b	Delay	LOS	Δ^c
1. Orange Avenue / 4 th Street	Signal	Weekday	27.1	C	27.2	C	0.1
		Saturday	15.0	B	15.2	B	0.2
2. Orange Avenue / 3rd Street	Signal	Weekday	17.3	B	17.5	B	0.2
		Saturday	17.2	B	17.4	B	0.2
3. Orange Avenue / 1st Street	Signal	Weekday	7.7	A	8.0	A	0.3
		Saturday	6.9	A	7.2	A	0.3
4. B Avenue / 1st Street	MSSC ^d	Weekday	12.0	B	12.4	B	0.4
		Saturday	16.1	C	17.0	C	0.9
5. Project Driveway / 1st Street	MSSC	Weekday	10.4	B	10.8	B	0.4
		Saturday	10.8	B	11.2	B	0.4
6. A Avenue / 1st Street	MSSC	Weekday	9.8	A	9.8	A	0
		Saturday	10.4	B	10.5	B	0.1
7. A Avenue / 3rd Street	MSSC	Weekday	9.3	A	9.3	A	0
		Saturday	9.3	A	9.3	A	0

Footnotes:

- a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. MSSC – Minor-Street Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

ATTACHMENT B

LOS BY MOVEMENT RESULTS, 1ST STREET/PROJECT DRIVEWAY

Intersection

Int Delay, s/veh 5.2

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	119	71	85	41	17	110
Future Vol, veh/h	119	71	85	41	17	110
Conflicting Peds, #/hr	39	0	0	39	8	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	129	77	92	45	18	120

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	176	0	-	0	497	156
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1400	-	-	-	532	890
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1348	-	-	-	444	855
Mov Cap-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	692	-

Approach EB WB SB

HCM Control Delay, s	5	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1348	-	-	-	761
HCM Lane V/C Ratio	0.096	-	-	-	0.181
HCM Control Delay (s)	8	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7

Intersection

Int Delay, s/veh 4.8

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	137	94	98	49	15	95
Future Vol, veh/h	137	94	98	49	15	95
Conflicting Peds, #/hr	49	0	0	49	29	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	102	107	53	16	103

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	209	0	-	0	612	186
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1362	-	-	-	456	856
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1298	-	-	-	363	814
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	626	-

Approach EB WB SB

HCM Control Delay, s	4.8	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1298	-	-	-	696
HCM Lane V/C Ratio	0.115	-	-	-	0.172
HCM Control Delay (s)	8.1	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6