Appendix A–
Initial Study and Notice of Preparation

+STAFF USE ONLY

PROJECT NUMBER: *R2008-02340*
CASES: *RCDP200800007/RCUP200800191*
RENV200800127/RPA200800012
RPKP200800010/RVAR200800015

* * * * INITIAL STUDY * * * *

COUNTY OF LOS ANGELES
DEPARTMENT OF REGIONAL PLANNING

GENERAL INFORMATION

I.A. Map Date: 12/10/08 Staff Member: Michael Tripp

Thomas Guide: 672 B7 USGS Quad: Venice

Location: 13483 Fiji Way, Marina del Rey 90292

Description of Project: The proposed project consists of the demolition of all existing uses, which include, a parking lot on Parcel 52, and the Marina Del Rey Sheriff's Station maintenance shop/storage area and the Beaches and Harbors' trailer complex on Parcel GG. This will be followed by the construction of a dry stack storage structure on Parcel 52 which will have the capacity to house 345 boats. The roof of the structure will be 70' tall, with the exception of the roof and enclosure that covers the boat hoist, which will be 82' tall. The proposed dry stack storage building will be a maximum of 354' long by 138' wide and will have a footprint of approximately 47,100 square feet. Said structure will extend 97' over the channel, projecting over the water. The project also involves the construction of a 106' by 50' structure, with an approximate footprint of 5,300 square feet, which will house an office and customer lounge and the Sheriff's Boatwright/Lifeguard facility. Lastly, the project proposes to create a 30-space mast up sail boat storage area, which is approximately 21,206 square feet in size, and a pedestrian promenade. This project entitlement requires a Specific Plan Amendment to change the landside land use classification of Parcels 52 and GG from Public Facilities to Boat Storage with a Waterfront Overlay Zone and to redesignate a portion of Parcel 49M from parking to the Public Facilities Land Use Category. A Marina-wide Local Coastal Program Amendment is needed to add dry stack storage buildings, that are attached to a landside structure, to the list of permitted uses in the "Water" Land Use Category and to allow structures that are over the water portion of parcels to be permitted at the same height as their landside counterparts. A Coastal Development Permit is requested for the demolition of all existing improvements and the subsequent construction of a new dry stack storage building, pedestrian promenade, a boaters' lounge and office, and the Sheriff's Boatwright/Lifeguard Facility. A Conditional Use Permit is being requested to authorize the dry stack storage use, Sheriff's Boatwright/Lifeguard facility and fuel dock in the proposed Boat Storage Land Use Category. A Parking Permit is requested for the reduction of parking spaces from the required 192 spaces to the proposed 135 spaces and to allow for the use of valet parking. A Variance is being requested to authorize construction of the dry stack building within the 5' rear yard setback and within 15' of the bulkhead and to allow the dry stack structure to be 82 feet in height rather than the permitted height of 75 feet.

Environmental Setting: The project site is located at 13483 Fiji Way in the unincorporated Los Angeles County community of Marina del Rey in the southeastern portion of its small craft harbor, near the intersection of Admiralty Way and Fiji Way. Vehicular access is via Fiji Way, an improved local street. The site is currently developed as a public parking lot (Parcel 52) and as a maintenance/storage yard for the Marina del Rey Sheriff's Station and as a temporary office site, containing 5 trailers, for the Department of Beaches and Harbors on Parcel GG. The project site is primarily flat with a slight downward slope to the north. Surrounding land uses consist of a public boat storage and public boat lunch ramp to the north and east of the site, a West Marine boat maintenance and repair facility is located to the west, and the Ballona Wetlands Ecological Reserve is located to the east.

Zoning: Specific Plan

General Plan: Marina del Rey Specific Plan

Community/Area wide Plan: Marina del Rey Local Coastal Plan

Major projects in area:

PROJECT NUMBER	DESCRIPTION & STATUS
R2006-03647	*400-unit apartment development in three separate structures. (Pending)*
R2006-03652	*126-unit apartment development in one structure. (Pending)*
R2006-03643	*19-story hotel with 152 hotel suites and 136 timeshare suites. (Pending)*
98-134	*1022-unit apartment units/10,000 sq.ft. retail, 439 boat slips. (Approved 12/6/00)*
R2007-01480	*10 buildings including 32,600 sq.ft. restaurant, 29,150 sq.ft. retail, 6,500 sq. ft. ferry terminal, 60,500 sq.ft. hotel and 1,012 parking spaces. (Pending)*
R2005-00234	*New 544-unit apartment complex that will replace an existing 202-unit complex. (Pending)*
R2006-01510	*New 114-unit senior retirement facility. (Pending)*
R2006-02726	*New structure with Marine Commercial and retail uses, a new health club and a 6-level parking structure. (Pending)*

NOTE: For EIRs, above projects are not sufficient for cumulative analysis.

REVIEWING AGENCIES

Responsible Agencies

- ☐ None
- ☒ LA Regional Water Quality Control Board
- ☐ Lahontan Regional Water Quality Control Board
- ☒ Coastal Commission
- ☒ Army Corps of Engineers
- ☐

Trustee Agencies

- ☐ None
- ☒ State Fish and Game
- ☐ State Parks
- ☐

Special Reviewing Agencies

- ☐ None
- ☐ National Parks
- ☐ National Forest
- ☒ Culver City
- ☒ City of Los Angeles
- ☐ Los Angeles City Public Works
- ☐ High School District
- ☐ Elementary School District
- ☒ Local Native American Tribal Council
- ☐ Town Council
- ☐ Water District
- ☒ Department of Toxic Substances Control

Regional Significance

- ☒ None
- ☐ SCAG Criteria
- ☐ Air Quality
- ☐ Water Resources
- ☐ Santa Monica Mountains Area
- ☐

County Reviewing Agencies

- ☒ Beaches and Harbors
- ☒ DPW: Land Development, Geotechnical and Materials Engineering, Traffic and Lighting, Waterworks and Sewer Maintenance, and Environmental Programs
- ☒ Sanitation District
- ☒ Sheriff Department
- ☒ Fire Department
- ☒ Health Services

IMPACT ANALYSIS MATRIX		ANALYSIS SUMMARY (See individual pages for details)				
			Less than Significant Impact/No Impact	Less than Significant Impact with Project Mitigation	Potentially Significant Impact	
CATEGORY	**FACTOR**	Pg				Potential Concern
HAZARDS	1. Geotechnical	5	☐	☐	☒	*Liquefaction area*
	2. Flood	6	☐	☒	☐	*Tsunami inundation area*
	3. Fire	7	☐	☐	☒	*Storage of fuel*
	4. Noise	8	☐	☐	☒	*Construction and operational impacts*
RESOURCES	1. Water Quality	9	☐	☐	☒	*Vicinity to Marina and Ballona Wetlands*
	2. Air Quality	10	☐	☐	☒	*Cumulative and construction impacts*
	3. Biota	11	☐	☐	☒	*Brown Pelican, Great Blue Heron, Eel Grass.*
	4. Cultural Resources	12	☒	☐	☐	
	5. Mineral Resources	13	☒	☐	☐	
	6. Agriculture Resources	14	☒	☐	☐	
	7. Visual Qualities	15	☐	☐	☒	
SERVICES	1. Traffic/Access	16	☐	☐	☒	
	2. Sewage Disposal	17	☐	☒	☐	
	3. Education	18	☒	☐	☐	
	4. Fire/Sheriff	19	☒	☐	☐	
	5. Utilities	20	☐	☐	☒	*Government office will be moved in conjunction with the project.*
OTHER	1. General	21	☐	☐	☒	*The building is out of scale with what exists in the area.*
	2. Environmental Safety	22	☐	☐	☒	*Contaminated soil exists onsite*
	3. Land Use	23	☐	☐	☒	*The project requires Plan Amendments.*
	4. Pop/Hous./Emp./Rec.	24	☒	☐	☐	
	5. Mandatory Findings	25	☐	☐	☒	*Potential cumulative traffic impacts*

DEVELOPMENT MONITORING SYSTEM (DMS)

As required by the Los Angeles County General Plan, DMS* shall be employed in the Initial Study phase of the environmental review procedure as prescribed by state law.

1. Development Policy Map Designation: *Category 2: Conservation/Maintenance*
2. ☐ Yes ☒ No Is the project located in the Antelope Valley, East San Gabriel Valley, Malibu/Santa Monica Mountains or Santa Clarita Valley planning area?
3. ☐ Yes ☒ No Is the project at urban density and located within, or proposes a plan amendment to, an urban expansion designation?

If both of the above questions are answered "yes", the project is subject to a County DMS analysis.

☐ Check if DMS printout generated (attached)

Date of printout: ____________________

☐ Check if DMS overview worksheet completed (attached)

EIRs and/or staff reports shall utilize the most current DMS information available.

ENVIRONMENTAL FINDING

FINAL DETERMINATION: On the basis of this Initial Study, the Department of Regional Planning finds that this project qualifies for the following environmental document:

☐ NEGATIVE DECLARATION, inasmuch as the proposed project will not have a significant effect on the environment.

An Initial Study was prepared on this project in compliance with the State CEQA Guidelines and the environmental reporting procedures of the County of Los Angeles. It was determined that this project will not exceed the established threshold criteria for any environmental/service factor and, as a result, will not have a significant effect on the physical environment.

☐ MITIGATED NEGATIVE DECLARATION, in as much as the changes required for the project will reduce impacts to insignificant levels (see attached discussion and/or conditions).

An Initial Study was prepared on this project in compliance with the State CEQA Guidelines and the environmental reporting procedures of the County of Los Angeles. It was originally determined that the proposed project may exceed established threshold criteria. The applicant has agreed to modification of the project so that it can now be determined that the project will not have a significant effect on the physical environment. The modification to mitigate this impact(s) is identified on the Project Changes/Conditions Form included as part of this Initial Study.

☒ ENVIRONMENTAL IMPACT REPORT*, inasmuch as there is substantial evidence that the project may have a significant impact due to factors listed above as "significant".

☐ At least one factor has been adequately analyzed in an earlier document pursuant to legal standards, and has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets (see attached Form DRP/IA 101). The Addendum EIR is required to analyze only the factors changed or not previously addressed.

Reviewed by: Michael Tripp Date: 1/8/08

Approved by: James [signature] Date: 1/8/08

☐ This proposed project is exempt from Fish and Game CEQA filling fees. There is no substantial evidence that the proposed project will have potential for an adverse effect on wildlife or the habitat upon which the wildlife depends. (Fish & Game Code 753.5).

☐ Determination appealed – see attached sheet.

*NOTE: Findings for Environmental Impact Reports will be prepared as a separate document following the public hearing on the project.

HAZARDS - 1. Geotechnical

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☐	☒	Is the project located in an active or potentially active fault zone, Seismic Hazards Zone, or Alquist-Priolo Earthquake Fault Zone? *The subject site is located approximately 1.9 miles from the Charnock Fault, 3.2 miles from the Overland Fault and 4.1 miles from the Santa Monica Fault. (Los Angles County Safety Element-Plate 1, Fault Rupture Hazards and Historic Seismicity Map)*
b.	☐	☒	☐	Is the project site located in an area containing a major landslide(s)? *Los Angeles County Safety Element-Plate 5, Landslide Inventory Map*
c.	☐	☒	☐	Is the project site located in an area having high slope instability?
d.	☒	☐	☐	Is the project site subject to high subsidence, high groundwater level, liquefaction, or hydrocompaction? *Liquefaction (Los Angeles County Safety Element- Plate 4, Liquefaction Susceptibility Map)*
e.	☐	☒	☐	Is the proposed project considered a sensitive use (school, hospital, public assembly site) located in close proximity to a significant geotechnical hazard?
f.	☐	☒	☐	Will the project entail substantial grading and/or alteration of topography including slopes of over 25%? *Topography is relatively flat and only 15,000 cubic yards of grading is expected.*
g.	☐	☒	☐	Would the project be located on expansive soil, as defined in Table 18-1-B of Uniform Building Code (1994), creating substantial risks to life or property?
h.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ Building Code, Title 26 - Sections 110.2, 111 & 113
(Geotechnical Hazards, Engineering Geology and Soils Engineering Report, Earthquake Fault)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☒ Project Design ☒ Approval of Geotechnical Report by DPW

Consult with DPW Geotechnical & Materials Engineering. Project condition will include requirement of approval of geotechnical by DPW prior to issuance of construction permit.

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be impacted by, **geotechnical** factors?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the major drainage course, as identified on USGS quad sheets by a dashed line, located on the project site? *USGS Venice Quad Sheet*
b.	☒	☐	☐	Is the project site located within or does it contain a floodway, floodplain, or designated flood hazard zone? *Tsunami inundation area (LA County Safety Element-Plate 6, Flood Inundation Hazards Map)*
c.	☐	☒	☐	Is the project site located in or subject to high mudflow conditions?
d.	☐	☐	☒	Could the project contribute or be subject to high erosion and debris deposition from run-off?
e.	☐	☐	☒	Would the project substantially alter the existing drainage pattern of the site or area?
f.	☐	☐	☐	Other factors (e.g., dam failure)?

STANDARD CODE REQUIREMENTS

☐ Building Code, Title 26 – Section 110.1 (Flood Hazard)
☐ Health and Safety Code, Title 11 – Chapter 11.60 (Floodways)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☒ Project Design ☒ Approval of Drainage Concept by DPW

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be impacted by **flood (hydrological)** factors?

☐ Potentially significant ☒ Less than significant with project mitigation ☐ Less than significant/No Impact

HAZARDS - 3. Fire

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site located in a Very High Fire Hazard Severity Zone (Fire Zone 4)? *LA County Safety Element-Plate 7, Wildland and Urban Fire Hazards Map*
b.	☐	☒	☐	Is the project site in a high fire hazard area and served by inadequate access due to lengths, width, surface materials, turnarounds or grade? *Vehicular and pedestrian access is taken from Fiji Way, an improved street*
c.	☐	☒	☐	Does the project site have more than 75 dwelling units on a single access in a high fire hazard area?
d.	☐	☒	☐	Is the project site located in an area having inadequate water and pressure to meet fire flow standards? *Public water service is available to meet fire flow standards*
e.	☐	☒	☐	Is the project located in close proximity to potential dangerous fire hazard conditions/uses (such as refineries, flammables, explosives manufacturing)?
f.	☐	☐	☒	Does the proposed use constitute a potentially dangerous fire hazard? *The proposed fuel tanks may be a potential fire hazard*
g.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ Utilities Code, Title 20 – Section 20.16.060 (Fire Flow & Fire Hydrants Requirements)
☐ Fire Code, Title 32 – Sections 902.2.1 & 902.2.2.1 (Access & Dimensions)
☐ Fire Code, Title 32 – Sections 1117.2.1 (Fuel Modification Plan, Landscape Plan & Irrigation Plan)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☒ Project Design ☐ Compatible Use

Project review by the Fire Department is required prior to building permit issuance

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be impacted by **fire hazard** factors?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

HAZARDS - 4. Noise

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site located near a high noise source (airports, railroads, freeways, industry)?
b.	☐	☒	☐	Is the proposed use considered sensitive (school, hospital, senior citizen facility) or are there other sensitive uses in close proximity?
c.	☐	☐	☒	Could the project substantially increase ambient noise levels including those associated with special equipment (such as amplified sound systems) or parking areas associated with the project? *The operation of the hoist is expected to produce more noise than the current use.*
d.	☒	☐	☐	Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels without the project? *Construction and operational noise impacts are potentially significant.*
e.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ Environmental Protection Code, Title 12 – Chapter 12.08 (Noise Control)
☐ Building Code, Title 26 – Sections 1208A (Interior Environment – Noise)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☒ Project Design ☐ Compatible Use

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be adversely impacted by **noise**?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

RESOURCES - 1. Water Quality

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site located in an area having known water quality problems and proposing the use of individual water wells? *There is public water serving the existing facility.*
b.	☐	☒	☐	Will the proposed project require the use of a private sewage disposal system?
	☐	☐	☐	If the answer is yes, is the project site located in an area having known septic tank limitations due to high groundwater or other geotechnical limitations *or* is the project proposing on-site systems located in close proximity to a drainage course?
c.	☐	☐	☒	Could the project's associated construction activities significantly impact the quality of groundwater and/or storm water runoff to the storm water conveyance system and/or receiving water bodies? *Although the proposed project will require drainage approval from DPW, there is still a possible impact because the proposed use is located near the Ballona Wetlands.*
d.	☐	☐	☒	Could the project's post-development activities potentially degrade the quality of storm water runoff and/or could post-development non-storm water discharges contribute potential pollutants to the storm water conveyance system and/or receiving bodies?
e.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☒ Health & Safety Code, Title11 – Chapter 11.38 (Water & Sewers)
☒ Environmental Protection, Title 12 – Chapter 12.80 (Storm-water & Runoff Pollution Control)
☐ Plumbing Code, Title 28 – Chapter 7; Appendices G(a), J & K (Sewers & Septic Systems)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☐ Project Design ☐ Compatible Use ☐ Septic Feasibility Study
☐ Industrial Waste Permit ☒ National Pollutant Discharge Elimination System (NPDES) Permit

Project condition will include the requirement of NPDES Permit issuance prior to construction.

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be adversely impacted by, **water quality** problems?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

RESOURCES - 2. Air Quality

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Will the proposed project exceed the State's criteria for regional significance (generally (a) 500 dwelling units for residential users or (b) 40 gross acres, 650,000 square feet of floor area or 1,000 employees for non-residential uses)?
b.	☐	☒	☐	Is the proposal considered a sensitive use (schools, hospitals, parks) and located near a freeway or heavy industrial use?
c.	☐	☐	☒	Will the project increase local emissions to a significant extent due to increased traffic congestion or use of a parking structure or exceed AQMD thresholds of potential significance?
d.	☐	☐	☒	Will the project generate or is the site in close proximity to sources that create obnoxious odors, dust, and/or hazardous emissions? *Part of the project is a proposed fuel dock. There may be fuel odors related to the dock's operation. In addition, their may be air quality issues related to idling boats and related to onsite boat repair. Lastly, construction related air impacts may occur.*
e.	☐	☒	☐	Would the project conflict with or obstruct implementation of the applicable air quality plan?
f.	☐	☒	☐	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?
g.	☒	☐	☐	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard (including releasing emission which would exceed quantitative thresholds for ozone precursors)?
h.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ State of California Health and Safety Code – Section 40506 (Air Quality Management District Permit)

☐ **MITIGATION MEASURES**

☐ Project Design

☐ **OTHER CONSIDERATIONS**

☐ Air Quality Report

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, or be adversely impacted by, **air quality**?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

RESOURCES - 3. Biota

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site located within a Significant Ecological Area (SEA), SEA Buffer, or coastal Sensitive Environmental Resource (ESHA, etc.), or is the site relatively undisturbed and natural? *LA County SEA and ESHA Map*
b.	☐	☒	☐	Will grading, fire clearance, or flood related improvements remove substantial natural habitat areas?
c.	☐	☒	☐	Is a drainage course located on the project site that is depicted on USGS quad sheets by a dashed blue line or that may contain a bed, channel, or bank of any perennial, intermittent or ephemeral river, stream, or lake? *USGS Venice Quad Sheet*
d.	☐	☐	☒	Does the project site contain a major riparian or other sensitive habitat (e.g. coastal sage scrub, oak woodland, sycamore riparian, woodland, wetland, etc.)? *There is potential of Eel grass in the waterside portion of the project.*
e.	☐	☒	☐	Does the project site contain oak or other unique native trees (specify kinds of trees)?
f.	☐	☐	☒	Is the project site habitat for any known sensitive species (federal or state listed endangered, etc.)? Brown Pelicans and Great Blue Herons have been observed in the vicinity of the project. The site contains no known nests.
g.	☐	☒	☐	Other factors (e.g., wildlife corridor, adjacent open space linkage)?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☒ Project Design ☐ Oak Tree Permit

☐ ERB/SEATAC Review (Biota Report required) ☒ Biological Constraints Analysis

Construction will be halted if Brown Pelicans or Great Blue Herons are observed nesting on the site.

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on, **biotic** resources?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

RESOURCES - 4. Archaeological/Historical/Paleontological

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site in or near an area containing known archaeological resources or containing features (drainage course, spring, knoll, rock outcroppings, or oak trees) that indicate potential archaeological sensitivity? *The site is fully developed.*
b.	☐	☒	☐	Does the project site contain rock formations indicating potential paleontological resources?
c.	☐	☒	☐	Does the project site contain known historic structures or sites?
d.	☐	☒	☐	Would the project cause a substantial adverse change in the significance of a historical or archaeological resource as defined in 15064.5?
e.	☐	☒	☐	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
f.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☐ Project Design

☐ Cultural Resources Records Search (Quick Check) ☐ Phase 1 Archaeology Report

☐ Native American Heritage Commission Sacred Land Files Search

CONCLUSION

Considering the above information, could the project leave a significant impact (individually or cumulatively) on **archaeological, historical**, or **paleontological** resources?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

RESOURCES - 5. Mineral Resources

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Would the project 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.	☐	☒	☐	Would the project result in the loss of availability of a locally important mineral resource discovery site delineated on a local general plan, specific plan or other land use plan?
c.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES**

☐ Lot Size

☐ **OTHER CONSIDERATIONS**

☐ Project Design

CONCLUSION

Considering the above information, could the project leave a significant impact (individually or cumulatively) on **mineral** resources?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

RESOURCES - <u>6. Agriculture Resources</u>

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Would the project 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? *Los Angeles County Important Farmland 2002 Map*
b.	☐	☒	☐	Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?
c.	☐	☒	☐	Would the project involve other changes in the existing environment that due to their location or nature, could result in conversion of Farmland, to non-agricultural use?
d.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES**

☐ Lot Size

☐ **OTHER CONSIDERATIONS**

☐ Project Design

CONCLUSION

Considering the above information, could the project leave a significant impact (individually or cumulatively) on **agriculture** resources?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

RESOURCES - 7. Visual Qualities

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☒	☐	☐	Is the project site substantially visible from or will it obstruct views along a scenic highway (as shown on the Scenic Highway Element), or is it located within a scenic corridor or will it otherwise impact the viewshed? *The site is visible from Fiji Way, a designated Scenic Highway.*
b.	☐	☒	☐	Is the project substantially visible from or will it obstruct views from a regional riding or hiking trail? *Los Angeles County Trail System Map*
c.	☐	☒	☐	Is the project site located in an undeveloped or undisturbed area that contains unique aesthetic features?
d.	☒	☐	☐	Is the proposed use out-of-character in comparison to adjacent uses because of height, bulk, or other features? *The proposed structure is larger than any other in the general area.*
e.	☒	☐	☐	Is the project likely to create substantial sun shadow, light or glare problems? *The project will substantially shade portions of the Marina waters.*
f.	☐	☐	☐	Other factors (e.g., grading or landform alteration)?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☒ Project Design ☐ Visual Simulation ☐ Compatible Use

CONCLUSION

Considering the above information, could the project leave a significant impact (individually or cumulatively) on **scenic** qualities?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

SERVICES - 1. Traffic/Access

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Does the project contain 25 dwelling units or more and is it located in an area with known congestion problems (roadway or intersections)?
b.	☐	☒	☐	Will the project result in any hazardous traffic conditions?
c.	☒	☐	☐	Will the project result in parking problems with a subsequent impact on traffic conditions? *The project is displacing a public parking lot and is requesting a parking permit to have less than the required amount of parking.*
d.	☐	☒	☐	Will inadequate access during an emergency (other than fire hazards) result in problems for emergency vehicles or residents/employees in the area?
e.	☐	☐	☒	Will the congestion management program (CMP) Transportation Impact Analysis thresholds of 50 peak hour vehicles added by project traffic to a CMP highway system intersection or 150 peak hour trips added by project traffic to a mainline freeway link be exceeded?
f.	☐	☒	☐	Would the project conflict with adopted policies, plans, or program supporting alternative transportation (e.g., bus, turnouts, bicycle racks)?
g.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Project Design ☐ Traffic Report ☐ Consultation with DPW Traffic & Lighting Division

A traffic study for this project has not yet been submitted by the applicant.

CONCLUSION

Considering the above information, could the project leave a significant impact (individually or cumulatively) on **traffic/access** factors?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

SERVICES - <u>2. Sewage Disposal</u>

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	If served by a community sewage system, could the project create capacity problems at the treatment plant?
b.	☐	☐	☒	Could the project create capacity problems in the sewer lines serving the project site?
c.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☒ Utilities Code, Title 20 – Division 2 (Sanitary Sewers and Industrial Waste)
☐ Plumbing Code, Title 28 – Chapter 7 (Sanitary Drainage)
☐ California Health Safety Code – Section 5474 (Sewer connection mitigation fee)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on the physical environment due to **sewage disposal** facilities?

☐ Potentially significant ☒ Less than significant with project mitigation ☐ Less than significant/No Impact

SERVICES - 3. Education

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Could the project create capacity problems at the district level?
b.	☐	☒	☐	Could the project create capacity problems at individual schools that will serve the project site?
c.	☐	☒	☐	Could the project create student transportation problems?
d.	☐	☒	☐	Could the project create substantial library impacts due to increased population and demand?
e.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ State of California Government Code – Section 53080 (School Facilities Fee)
☐ Planning & Zoning Code, Title 22 - Chapter 22.72 (Library Facilities Mitigation Fee)

☐ **MITIGATION MEASURES** ☒ **OTHER CONSIDERATIONS**

☐ Site Dedication

Residential units are not proposed with this project.

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) relative to **educational** facilities/services?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

SERVICES - <u>4. Fire/Sheriff Services</u>

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Could the project create staffing or response time problems at the fire station or sheriff's substation serving the project site?
b.	☐	☒	☐	Are there any special fire or law enforcement problems associated with the project or the general area?
c.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ Revenue & Finance Code, Title 4 – Chapter 4.92 (Fire Protection Facilities Fee)

☐ **MITIGATION MEASURES** ☒ **OTHER CONSIDERATIONS**

Nearest Fire Station is 2.12 miles away at 4433 Admiralty Way, Marina del Rey, CA 90292
Nearest Sheriff Station is 0.5 miles away at 13851Fiji Way, Marina del Rey, CA 90292

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) relative to **fire/sheriff** services?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

SERVICES - 5. Utilities/Other Services

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Is the project site in an area known to have an inadequate public water supply to meet domestic needs or to have an inadequate ground water supply and proposes water wells? *There is existing water service to serve the project site.*
b.	☐	☒	☐	Is the project site in an area known to have an inadequate water supply and/or pressure to meet fire fighting needs?
c.	☐	☒	☐	Could the project create problems with providing utility services, such as electricity, gas, or propane? *All utility services are available at the existing site.*
d.	☐	☐	☒	Are there any other known service problem areas (e.g., solid waste)? *The existing sewer line may be undersized.*
e.	☐	☐	☒	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services or facilities (e.g., fire protection, police protection, schools, parks, roads)? *Existing government facilities are proposed to be moved in conjunction with this project.*
f.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ Plumbing Code, Title 28 – Chapters 3, 6 & 12
☐ Utilities Code, Title 20 – Divisions 1, 4 & 4a (Water, Solid Waste, Garbage Disposal Districts)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☐ Project Design ☐ Water Purveyor Will-serve Letter

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CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) relative to **utilities** services?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

OTHER FACTORS - 1. General

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Will the project result in an inefficient use of energy resources?
b.	☒	☐	☐	Will the project result in a major change in the patterns, scale, or character of the general area or community? *The building is larger than those in the surrounding area.*
c.	☐	☒	☐	Will the project result in a significant reduction in the amount of agricultural land?
d.	☐	☐	☐	Other factors?

STANDARD CODE REQUIREMENTS

☐ California State Administrative Code, Title 24, Part 5, T-20 (Energy Conservation)

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

☐ Lot Size ☐ Project Design ☐ Compatible Use

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on the physical environment due to any of the above factors?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

OTHER FACTORS - 2. Environmental Safety

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☐	☒	Are any hazardous materials used, transported, produced, handled, or stored on-site? *Gasoline and diesel fuel will be stored at the site. In addition, hazardous materials related to boat repair may also be stored on the site.*
b.	☐	☒	☐	Are any pressurized tanks to be used or any hazardous wastes stored on-site? *There are no pressurized tanks proposed for the project site.*
c.	☐	☐	☒	Are any residential units, schools, or hospitals located within 500 feet and potentially adversely affected? *Apartments are located approximately 1,440 feet northeast of the site.*
d.	☒	☐	☐	Have there been previous uses that indicate residual soil toxicity of the site or is the site located within two miles downstream of a known groundwater contamination source within the same watershed? *Fuel tanks related to the parcel's previous use leaked into the soil.*
e.	☐	☐	☒	Would the project create a significant hazard to the public or the environment involving the accidental release of hazardous materials into the environment? *There is a potential for the release of fuel into Marina waters.*
f.	☐	☒	☐	Would the project emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
g.	☐	☒	☐	Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or environment? *EnviroStor Database*
h.	☐	☒	☐	Would the project result in a safety hazard for people in a project area located within an airport land use plan, within two miles of a public or public use airport, or within the vicinity of a private airstrip?
i.	☐	☒	☐	Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
j.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES**

☐ Phase 1 Environmental Assessment

☒ **OTHER CONSIDERATIONS**

☒ Toxic Clean-up Plan

CONCLUSION

Considering the above information, could the project have a significant impact relative to **public safety**?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

OTHER FACTORS - 3. Land Use

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☒	☐	☐	Can the project be found to be inconsistent with the plan designation(s) of the subject property? *The current Land Use Designation of Parcels 52 and GG does not allow for the proposed project.*
b.	☐	☒	☐	Can the project be found to be inconsistent with the zoning designation of the subject property?
c.				Can the project be found to be inconsistent with the following applicable land use criteria:
	☐	☒	☐	Hillside Management Criteria?
	☐	☒	☐	SEA Conformance Criteria?
	☐	☒	☐	Other?
d.	☐	☒	☐	Would the project physically divide an established community?
e.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on the physical environment due to **land use** factors?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

OTHER FACTORS - 4. Population/Housing/Employment/Recreation

SETTING/IMPACTS

	Yes	No	Maybe	
a.	☐	☒	☐	Could the project cumulatively exceed official regional or local population projections?
b.	☐	☒	☐	Could the project induce substantial direct or indirect growth in an area (e.g., through projects in an undeveloped area or extension of major infrastructure)?
c.	☐	☒	☐	Could the project displace existing housing, especially affordable housing?
d.	☐	☒	☐	Could the project result in substantial job/housing imbalance or substantial increase in Vehicle Miles Traveled (VMT)?
e.	☐	☒	☐	Could the project require new or expanded recreational facilities for future residents?
f.	☐	☒	☐	Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?
g.	☐	☐	☐	Other factors?

☐ **MITIGATION MEASURES** ☐ **OTHER CONSIDERATIONS**

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on the physical environment due to **population, housing, employment,** or **recreational** factors?

☐ Potentially significant ☐ Less than significant with project mitigation ☒ Less than significant/No Impact

MANDATORY FINDINGS OF SIGNIFICANCE

Based on this Initial Study, the following findings are made:

	Yes	No	Maybe	
a.	☐	☐	☒	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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 possible environmental effects that are individually limited but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. *Cumulative traffic impacts may be significant*
c.	☐	☒	☐	Will the environmental effects of the project cause substantial adverse effects on human beings, either directly or indirectly?

CONCLUSION

Considering the above information, could the project have a significant impact (individually or cumulatively) on the environment?

☒ Potentially significant ☐ Less than significant with project mitigation ☐ Less than significant/No Impact

County of Los Angeles
Boat Central Project – Parcels 52R and GG
Marina del Rey, California

Project Number: R2008-02340
Cases: RCDP200800007, RCUP200800191, RENV200800127,
RPA200800012, RPKP 200800010, RVAR200800015

Initial Study and Notice of Preparation

Prepared For:
Los Angeles County Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Prepared By:
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, CA 92656

January 2009

Contents

Exhibits

1. Project Description

1.1. Project Title

Boat Central

1.2. Lead Agency

County of Los Angeles
Department of Regional Planning
320 West Temple Street, Room 1346
Los Angeles, California 90012

1.3. Lead Agency Contact Person

Michael Tripp
County of Los Angeles
Department of Regional Planning
320 West Temple Street, Room 1346
Los Angeles, California 90012
Telephone: (213) 974-4813
Fax: (213) 626-0434
E-mail: mtripp@planning.lacounty.gov

1.4. Project Location

The project is located in the County of Los Angeles within Marina del Rey. The project site is located at 13483 Fiji Way, west of the intersection of Admiralty Way and Fiji Way. The site can be accessed via the 90 Freeway and Lincoln Boulevard. Exhibit 1, Regional Location Map, depicts the location of the project site within Southern California. Exhibit 2, Project Vicinity Map, depicts the project's location within Marina del Rey.

1.5. Project Sponsor's Name and Address

The project site is the subject of a long-term lease. The property Lessee, MDR Boat Central, and the property owner, the County of Los Angeles, are considered co-applicants for this project.

MDR Boat Central
Tom Hogan and Jeff Pence
3416 Via Lido, Suite G
Newport Beach, CA 92660

County of Los Angeles
Department of Beaches and Harbors
Attn: Gary Brockman
13837 Fiji Way
Los Angeles, CA 90292

1.6. General Plan Designation

The project site is designated "Specific Plan" by the County of Los Angeles General Plan.

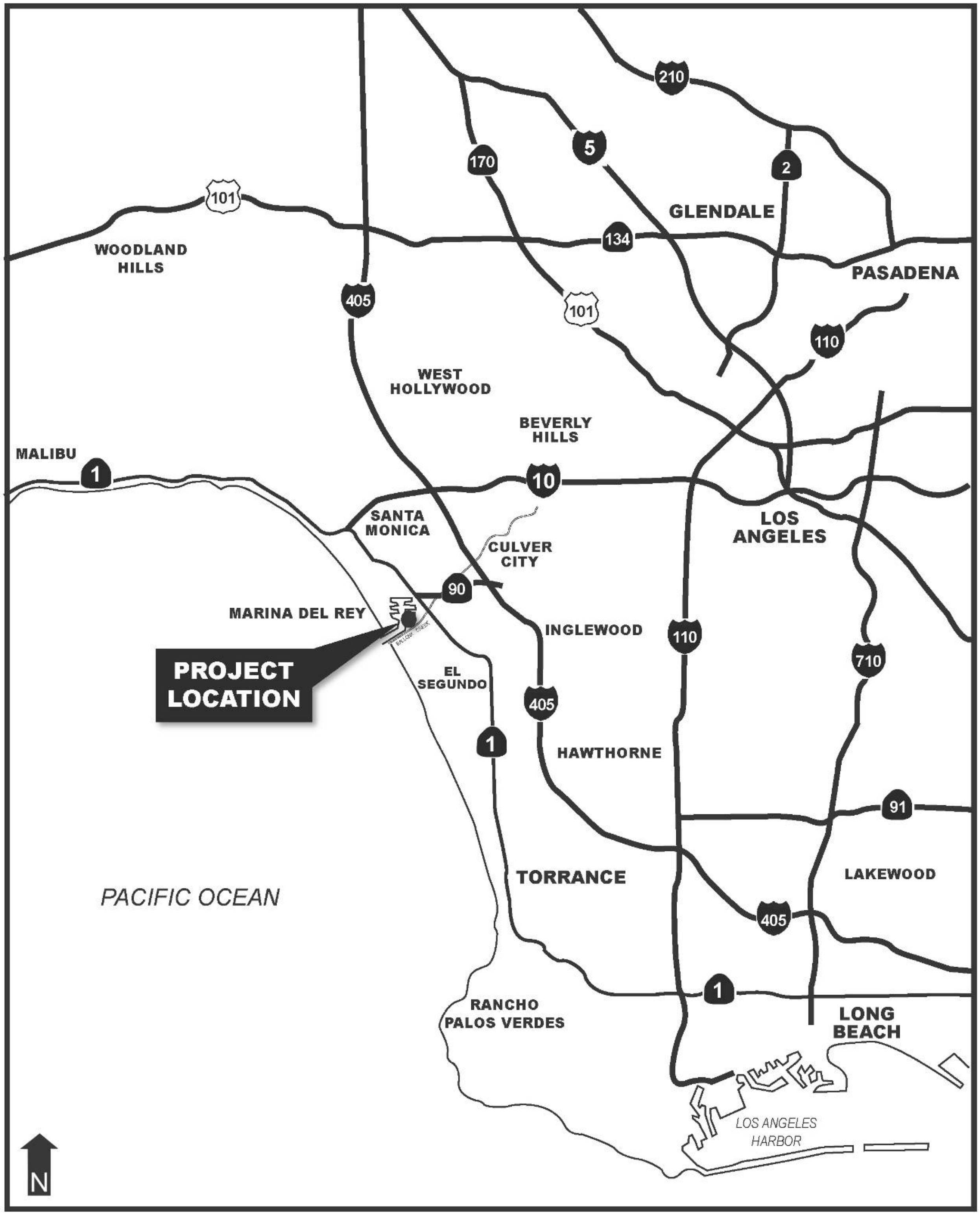


Exhibit 1 – Regional Location Map

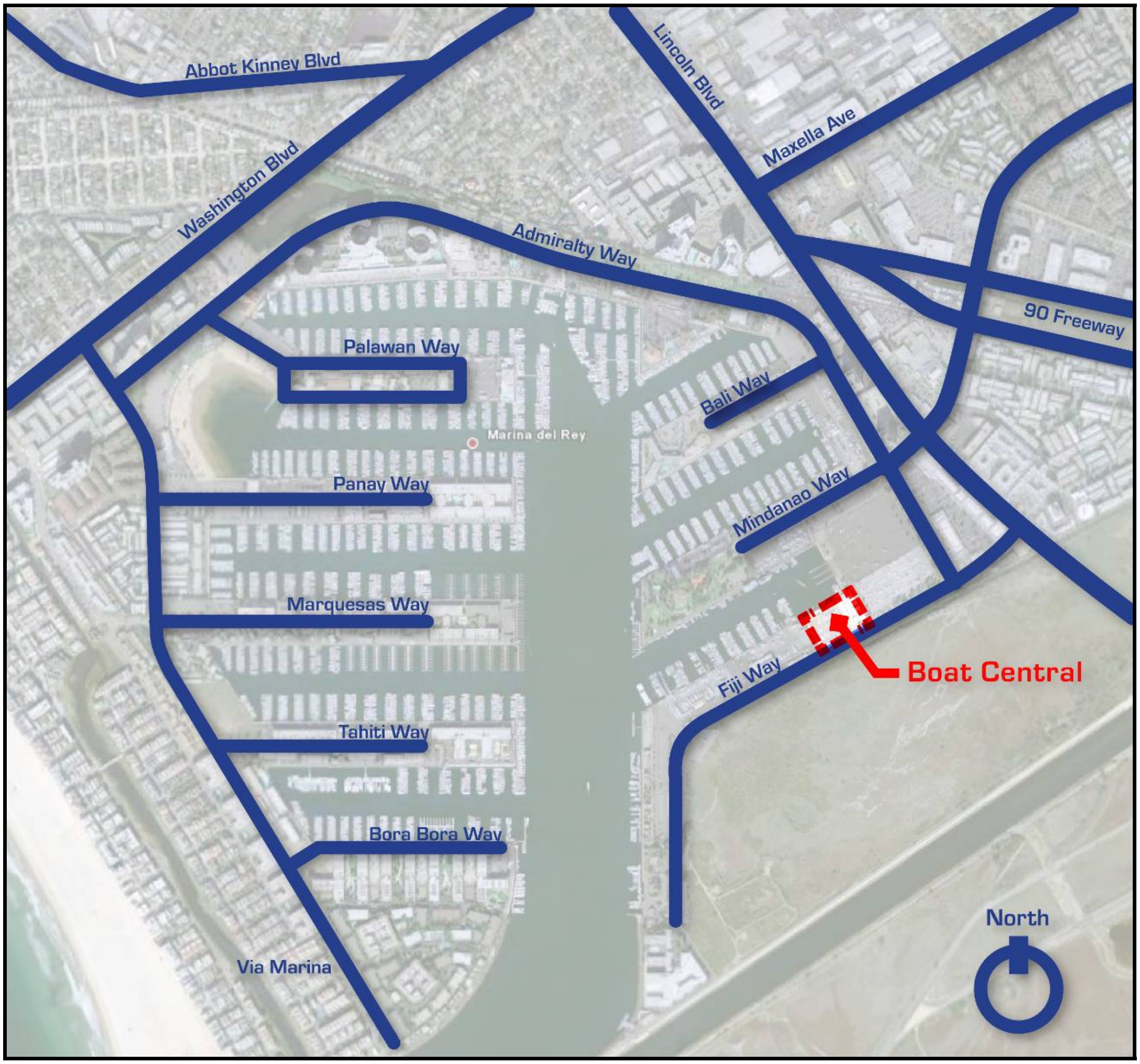


Exhibit 2 – Project Vicinity Map

1.7. Zoning Designation

The project site is zoned “Specific Plan” by the County of Los Angeles Zoning Code. The project is located within the Marina del Rey Specific Plan (Local Coastal Program). The Local Coastal Program designation for the site is “Public Facilities.”

1.8. Surrounding Land Uses and Setting

Marina del Rey is home to more than 5,000 pleasure boats and a diverse array of land uses including but not limited to: hotels, restaurants, office and commercial centers, residential uses, and public parks, beaches and bike paths. Marina del Rey is a fairly urbanized area currently undergoing a great deal of redevelopment. The community of Venice is located northwest of Marina del Rey, and Playa Vista is located to the southeast. Los Angeles International Airport is located approximately four miles southeast of Marina del Rey.

A public boat storage facility and public boat launch ramp is located immediately east and north of the site. A West Marine boat maintenance and repair facility is located to the west. A number of wet boat slips are located in front of the West Marine facility within Basin H. Fisherman’s Village and the Villa Venetia apartment complex are located further west of the site, along Fiji Way. Government facilities including the Coast Guard, the County Sheriff and the County Department of Beaches and Harbors offices are also located to the west of the site along Fiji Way. Area A of the Ballona Wetlands Ecological Reserve is located immediately south of the site, across Fiji Way. The South Bay Bike Trail, one of the County’s busiest bike paths, runs adjacent to the site along Fiji Way. Burton Chace Park is located across Basin H, northwesterly of the project site. The park contains picnic areas, paved walkways, a banquet/meeting facility, a snack bar and public restrooms. Additional dry storage in Marina del Rey is provided on parcels 77 and 95. Parcel 77 is located directly across Basin H. Parcel 95 is located approximately 1.25 miles northwest of the project site, at the intersection of Via Dolce and Washington Boulevard.

1.9. Project Description

1.9.1. Existing Setting

The project site is approximately 4.2 acres in size (3.09 acres of land and 1.11 acres of water), and is comprised of 2 parcels, hereinafter referred to as Parcel 52R and Parcel GG. The topography of the site ranges from a height of 15 feet above sea level at the southern portion of the site, sloping down to a height of seven feet above sea level at the northern portion of the site, adjacent to the water. The waterside portion of the site is located within Basin H of the marina, which is the first easterly basin within the marina.

Parcel 52R is oriented to the west and is currently developed with a public parking lot containing 237 parking spaces; there is no charge for parking on Parcel 52R. The parking is primarily utilized for charter fishing tours. Motor homes and vans also utilize the parking on a transient basis. The majority of the site is paved, however a small grassy berm runs parallel to Basin H, and approximately 20 mature palm trees are located on the berm. Access to the site is provided via two driveways along Fiji Way.

Parcel GG is oriented to the east and is currently developed with the Marina del Rey Sheriff’s Station, maintenance shop and maintenance/storage yard. Additionally, five office trailers used by the Los Angeles County Department of Beaches and Harbors are located on the site. A limited number of parking spaces are located on Parcel GG. These parking spaces are utilized by Sheriff and County employees. No public parking is located on Parcel GG.

In addition to the land side parcels, a portion of the water that fronts the Parcels 52R and GG is also a part of the project site. The waterside uses include a dock utilized by charter fishing ventures and a separate dock that is utilized by the Sheriff's Department. The existing setting of the site is depicted on Exhibit 3, Existing Site Plan. Photographs of the project site and surrounding area are provided as Exhibits 4, 5 and 6.

1.9.2. Project Overview

The Boat Central project involves five main development components including: a dry stack boat storage facility, mast-up sailboat storage, an office and customer lounge, a Sheriff's Boatwright/Lifeguard Facility, and a public promenade. The Boat Central project is one of the first of its kind on the west coast and the project would introduce a significant number of new boat storage spaces to Marina del Rey in a space saving fashion. The five main components of the project are described in detail below. The proposed project is depicted on Exhibit 7 – Proposed Site Plan. The following permits and approvals from the County of Los Angeles are being sought for the project: Specific Plan Amendment, Local Coastal Program Amendment, Conditional Use Permit for the Water front and Overlay Zone, Conditional Use Permit for the Dry-Stack Facility and Boatwright Building, and a Parking Permit. The required discretionary permits and approvals required for the project are discussed in more detail in Section 1.11 below.

a. Dry Stack Boat Storage

The dry stack boat storage facility would be located on Parcel 52R and would provide boat storage spaces within the dry stack boat storage structure. The boat storage facility would accommodate up to 345 boats and 28 boat trailers and an indoor boat repair facility. The interior of the boat storage structure would be somewhat modular, and capable of accommodating varying sizes of boats based on demand. The focus is providing for smaller boats from 20 to 35 feet in length with the maximum size limited to about 40 feet in length. The boat storage structure has been designed with an over the water component which facilitates the transfer of boats by a crane from the storage structure to the water and vice versa. New dock structures would be constructed to allow for conveyance of people to and from their boats, and temporary queuing of boats. Permanent wet slips are not proposed.

Upon request or reservation, the boats will be delivered from the structure to the dock. The new dock structure would extend up to 200 feet into Basin H on the western side of the site, which is commensurate with the adjacent docks in front of the West Marine facility. The new docks would extend up to 102 feet into the basin on the eastern side of the site. The proposed structure would be approximately 70 feet in height. A gantry crane, track and protective covering will be approximately 12 feet taller than the roof covering the rest of the structure. Due to the gentle slope of the project site, which descends approximately 7 feet from the street to the bulkhead, the dry stack structure will be approximately 63 feet tall from Fiji Way to about 70 feet tall along the water. The crane and protective covering will range from approximately 75 feet to 82 feet in height. Finally, because of the gentle slope of the project site, which descends approximately seven feet from the street to the bulkhead, the dry stack structure will be approximately 63 feet tall from Fiji Way to about 70 feet tall along the water. Due to the differential in the grade of the site, the crane and protective covering will range from approximately 75 feet to 82 feet in height. The crane, which spans the central 60 feet of the dry stack structure and runs its length, will reach a height of around 80 feet. Per LACC §22.46.1880, the height of the crane is not regulated. To improve aesthetics and reduce the escape of interior noise, a protective structure will enclose the crane. This structural feature is appurtenant to the roof of the dry stack structure and will envelope the central corridor within which the crane will maneuver. This screening is common to improve the appearance and silhouette of the building and ensure protection of the crane from the elements. The boat storage structure would protrude into Basin H and overhang the water in an articulated manner. The structure would overhang by approximately 45 feet on the eastern side, and approximately 97 feet on the western side. Along Fiji Way, the structure frontage would be approximately 138 feet.

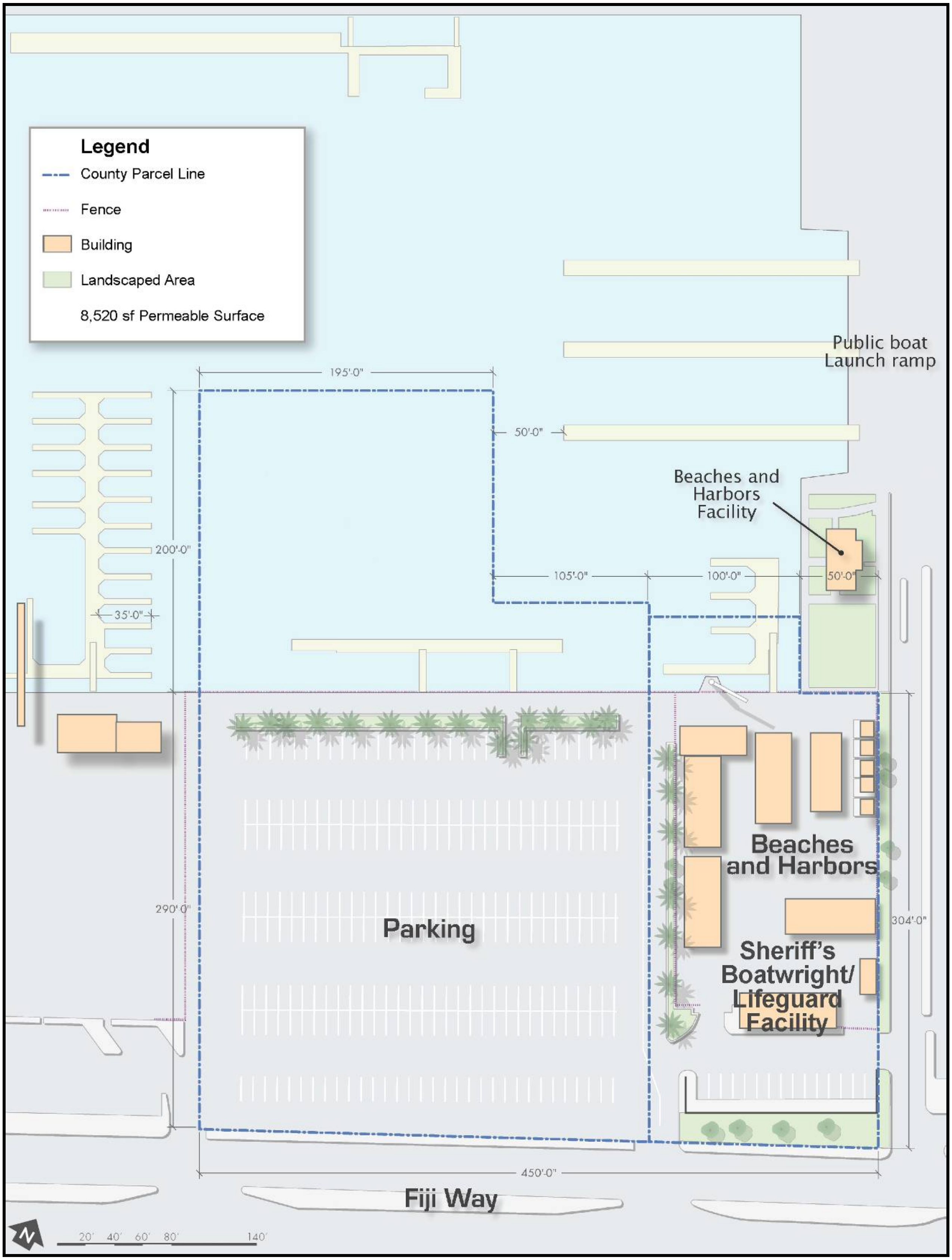


Exhibit 3 – Existing Site Plan

Photo 1 - View to the North from the southwest corner of the existing parking lot, across the channel towards Mindanao Way.

Photo 2 - View to the East from the western edge of the existing parking lot, towards existing Harbor offices/Sheriff's Boatwright facility.

Exhibit 4 – Photographs of Project Site and Surrounding Area – 1

Photo 3 - View south through parking lot towards entrance to site on Fiji Way. Across Fiji Way to the south is the Ballona Wetlands Ecological Reserve.

Photo 4 - View west along Fiji Way from existing site driveway. Ballona Wetlands Ecological Reserve to the south (left) across Fiji Way.

Exhibit 5 – Photographs of Project Site and Surrounding Area – 2

Photo 5 - View from Northern edge of parking lot looking northeast across channel towards public boat launch ramp, high rise buildings on Admiralty Way. Sheriff's Boatwright and docks showing to the east (right).

Photo 6 - View from Northern edge of parking lot looking northwest at charter boat dock and across channel towards Mindanao Way.

Exhibit 6 – Photographs of Project Site and Surrounding Area – 3

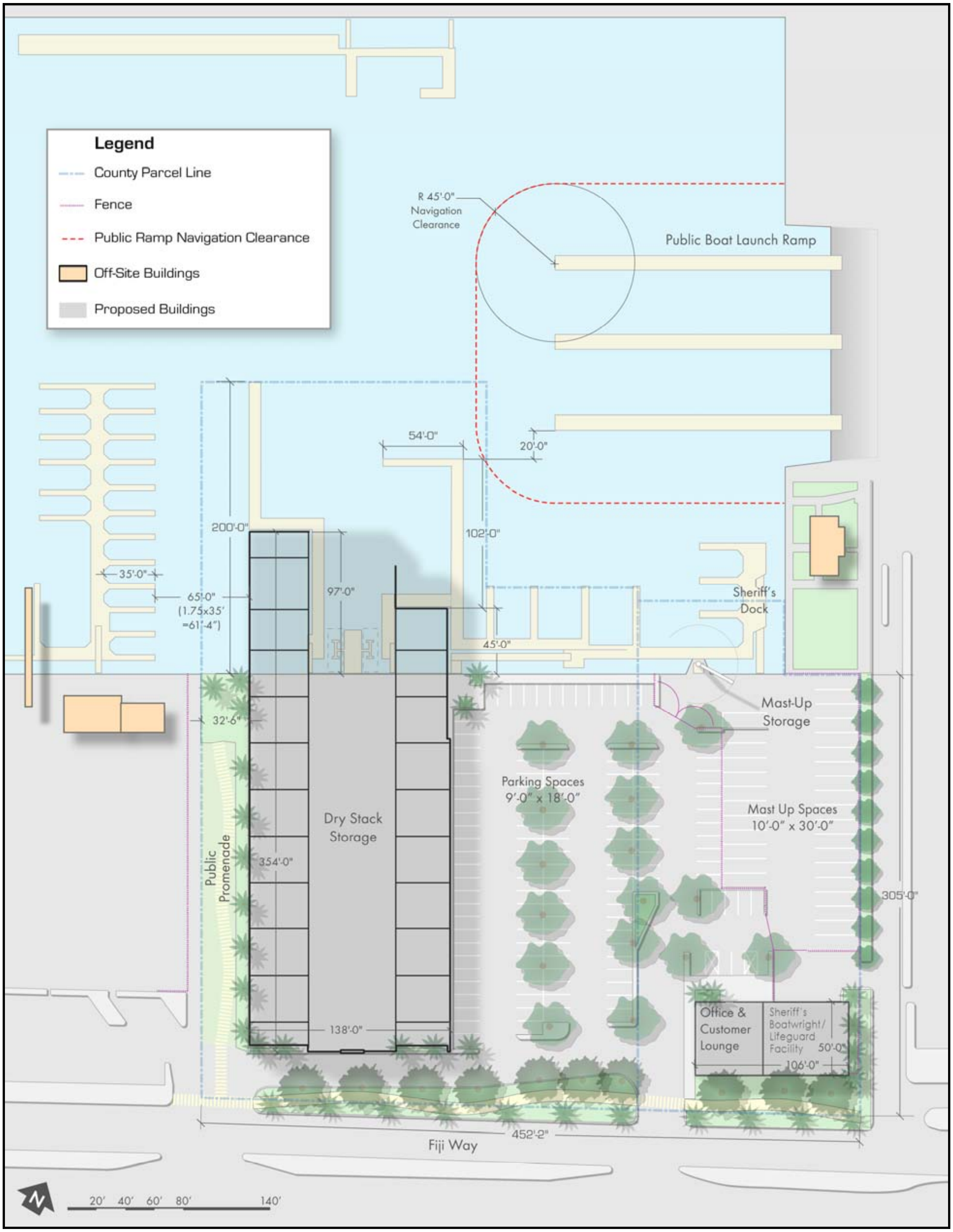


Exhibit 7 – Proposed Site Plan

The structure would include an architectural cladding of translucent polycarbonate or a similar material. Sunlight would penetrate the material, providing a well-lit and sheltered workspace. The polycarbonate also filters UV rays and resists salt corrosion, which increases the longevity of the structure. The visual bulk of the facility is broken up because the boat facility has been designed with polycarbonate panels, which effectively break down the structure's mass into planes. The long ends of the polycarbonate panels are able to slide, giving the impression that they are floating free. The design of the structure is such that the panels are able to slide and fit together such that they form planes that break up the structure's mass. Two shades of panels are planned for the structure, which will aid in visually separating the planes from one another. The shades of material are grey and white. Some portions of the structure (plaster walls and portions of the structure) will have a dark blue/grey color; however, the predominant colors of the structure are grey and white.

A 3,150-square-foot indoor boat repair facility will be located within three bays (each approximately 35 feet by 30 feet) on the ground floor of the boat storage structure. Having the boat repair facility indoors prevents pollutant escape and controls Volatile Organic Compounds (VOCs). The project will include a new pump out facility for boat waste and a fueling station to allow boaters to fill up with fuel. An underground fuel tank will be placed on the landside of the site in the parking lot near the bulkhead and docks. The precise placement of the fuel tank has not been determined.

b. Mast Up Sail Boat Storage

Storage for mast-up sail boats would be provided on Parcel GG. The sail boat storage would be located within a gated area, and would contain 30 dry storage spaces. Unlike the dry stack structure, the sail boats would be stored directly on the ground, and would not be stacked. The proposed sail boat storage spaces are ten feet wide by 30 feet long. A fixed land-side hoist will convey boats to the water. A boat wash down facility will also be incorporated into the sail boat storage area. The wash down facility will be located underneath the boat hoist, and will provide an opportunity to wash boats once removed from the water. The runoff from the wash down facility will be filtered then diverted to the sanitary sewer system; the runoff will not discharge into the marina. The project will also include the creation of two off-site public boat wash down facilities. It is anticipated that the public wash down facilities will be located at the adjacent public boat launch ramp. The off-site wash down facilities may be located elsewhere at the discretion of the County.

c. Office and Customer Lounge

In addition to the dry stack boat storage structure, a building will house the office and customer lounge and the Sheriff's Boatwright/Lifeguard facility. The building will be located on the southeastern edge of the site, on Parcel GG. The building will be two-stories, and will front Fiji Way. The building will be approximately 106 feet by 50 feet in size. The building will be divided into two distinct components, including the office and customer lounge, and the Sheriff's Boatwright/Lifeguard facility. The customer lounge will include a visitor reception facility, showers, restrooms, and personal lockers. The visitor lounge will be approximately 2,320 square feet, and will be located on the first floor of the building. An office for the boat storage facility will be located on the second floor of the building. The office will be approximately 750 square feet, and will be utilized for administrative purposes only.

d. Sheriff's Boatwright/Lifeguard Facility

The new 2,835 square foot Sheriff's Boatwright/Lifeguard shop will be located in the same building as the office and customer lounge. A 430 square foot area for Sheriff's offices will be located on the second floor. A fenced Boatwright yard will be located immediately north of the building. The yard will be approximately 2,200 square feet and will allow for maintenance and repair operations for the Sheriff's Boatwright/Lifeguard facility.

e. Public Promenade

Public access will be provided across the site along Fiji Way, and via a landscaped public promenade along the western edge of the site. All development within the marina is required to provide pedestrian access to the shoreline, except where public safety is an overriding consideration.[1] Because of the project's components, including the heavy machinery associated with the dry stack crane and the sailboat hoist, interface with pedestrians would create potentially dangerous conditions. Therefore, to ensure public safety, a waterfront promenade is not feasible.

However, the project will still provide a promenade that overlooks that marina. The public promenade will be approximately 32 feet wide by approximately 200 feet long and will provide a walking path and landscaping. A small park will be located at the terminus of the walking path overlooking the marina. Approximately five feet of vegetation, including a row of shrubs and trees will be placed alongside the dry-stack facility as a buffer, and will help lead the public to the waterfront area. Signage will be placed to notify the public of the park's existence and their ability to utilize the public park. The park will include hardscape features including a picnic area with benches.

f. Construction Schedule

Construction of the Project, including demolition, is expected to take approximately 11 months, with an anticipated completion date in late 2011 or early 2012. The Department of Beaches and Harbors plans to relocate existing Sheriff and Lifeguard functions to a nearby location during construction and clean-up. Construction staging is expected to be limited to worker parking as well as periodic, short-term storage of materials. The staging area will likely be onsite or in an area of the adjacent launch ramp property or Parcel 77. Construction activities and staging are not expected to result in any closure of the nearby bike path that runs along Fiji Way past the Property. Accordingly, the Project is in accordance with LACC 22.46.1880 which requires that the regional bicycle trail be retained or reconstructed as part of any redevelopment in the development zone.

1.10. Statement of Objectives

Identified below are goals and objectives related to the proposed project:

- Develop State-of-the-Art Dry Stack Boat Storage Facility
- Development of a boat storage facility incorporating boater-friendly, water-oriented design
- Bring a new option of boat storage to the Marina del Rey boating community
- Bring a new level of service to the Marina del Rey boating community
- Increase the number of boat storage spaces within Marina del Rey
- Provide docking facilities that are compliant with the Americans with Disabilities Act (ADA)
- Encourage recreational boating and visitation and use of the Marina's retail, restaurants and public facilities in the project vicinity

1.11. Discretionary Approvals Required

Discretionary approvals are required to implement the proposed development project. These concurrent or subsequent approvals shall be within the scope of the Environmental Impact Report.

[1] Marina del Rey Local Coastal Program, Section e 1, Shoreline Pedestrian Access, page 1-7.

a. Specific Plan Amendment

An Amendment to the Specific Plan is required to allow a change of land use classification from Public Facilities to Boat Storage[2] with the Waterfront Overlay Zone (the "WOZ")[3] on the Land Side to allow for the dry stack storage use and to expand along Fiji Way, the WOZ pattern which current exists on the two Parcels immediately west (Parcels 53 and 54). Additionally, the County is requesting an Amendment to the Specific Plan to add the Public Facilities land use classification to Parcel 49M to allow for the development of the Department of Beaches and Harbors headquarters (a portion of which is currently housed in Parcel GG) on this site.

Table 1 - Proposed Changes to Land Use Classification

Property	Size	Land Use Classification	
		From	To
Water Side	1.11 acres	Water	Water
Land Side	3.09 acres	Public Facilities	Boat Storage + WOZ

b. Local Coastal Program Amendment – Project Specific

An amendment to the LCP, approved by the Commission, is necessary to allow for the amendment to the Specific Plan as described above. As stated in the Specific Plan, "amendments to the County Code that affect sections cited in this Specific Plan shall not apply to this Specific Plan until certified as amendments to the LCP by the California Coastal Commission."[4] To maintain LCP consistency, along with the Specific Plan Amendment, the LUP shall have to be updated to reflect the change of classification on the property from Public Facilities to Boat Storage with the WOZ and to add the Public Facilities classification to Parcel 49M. This would include but may not be limited to updating the description of the Mindanao Development Zone in the Specific Plan and the LUP as well as the labeling of Exhibits 2, 12, 13 & 17 in the Specific Plan and Maps 7, 16, 17 and 21 in the LUP. Table 2 below provides a summary of the changes to the LCP. Table 3 below provides a summary of changes to the Local Implementation Plan ("LIP"). Proposed deletions are indicated by ~~strikeout~~, and proposed additions are indicated with **bold** typeface. Exhibit 8 – Proposed LCP Land Use Designations (page 19) depicts the existing and proposed land use designations for the site.

c. Local Coastal Program Amendment – Marina-Wide

The Applicant requests changes to the Water land use classification to allow boat storage facilities on a parcel's water side. Specifically, the Amendment request includes: 1) a text amendment to LACC §22.46.1670.B to add "Dry stack storage attached to a landside structure" to the list of *Permitted Uses*; and 2) a text amendment to LACC §22.46.1690 to allow dry stack storage facilities on the water-designated portion of a parcel at the heights allowed by the land use category on the land side of a parcel.[5]

[2] Marina del Rey Specific Plan, LACC §22.46.1480.
[3] Marina del Rey Specific Plan, LACC §22.46.1700.
[4] LACC §22.46.1030
[5] The primary land use category on the land side is Boat Storage. Per §22.46.1490, Boat Storage allows heights to "a maximum of 25 feet, except that dry stack storage uses may be allowed a maximum of 75 feet when allowed by Site-Specific Development Guidelines." Per §22.46.1880, the Site-Specific Development Guidelines for the Property allow heights up to 75 feet when an expanded view corridor is provided.

Table 2 – Proposed Amendments to the Marina del Rey Land Use Plan

SECTION (PAGE)	PROPOSED CHANGE
LUP Text Amendments	
A.1. Shoreline Access (Page 1-3)	Public (County) property, subject to restrictions – Parcel ~~GG~~ 49M ~~at the eastern end of Basin H~~.
A.1. Shoreline Access (Page 1-6)	Public safety concerns dictate excluding the public from areas maintaining potentially hazardous activities, such as boat yards, dry stack storage facilities, maintenance yards, flood control projects, Southern California Gas Company facilities, and private launching facilities.
A.1. Shoreline Access (Page 1-6)	Minimum Awareness: Shoreline adjacent to private and commercial uses like apartments, ~~and~~ boat clubs~~.~~ and dry stack facilities.
A.1. Shoreline Access (Page 1-7)	3. All development in the existing Marina shall be designed to improve access to and along the shoreline. All development adjacent to the bulkhead in the existing Marina shall provide pedestrian access ways, benches and rest areas along the bulkhead~~.~~, except where safety may be compromised, such as boatyards and dry stack facilities.
A.2. Recreation & Visitor-Serving Facilities (Page 2–5)	Lot 52R is being proposed as the site for a dry stack facility. ~~the new office headquarters for the Dept. of Beaches and Harbors.~~ The Waterfront Overlay Zone is applied to the landside portion of this parcel in order to insure that opportunities for public access are not limited except with respect to the allocated development intensity. If a use other than Boat Storage is proposed a same-size Boat Storage facility shall be located elsewhere in Marina del Rey. ~~A~~ The new office will be relocated to Parcel 49M. ~~necessitated when the current office site on Parcel 62 is demolished to make way for the new marina channel entrance for Area A. A yet-to-be determined number of public parking spaces will be incorporated into the design of this new office facility.~~
A.2. Recreation & Visitor-Serving Facilities (Page 2–6)	FIGURE 3 COUNTY OWNED PARKING LOTS Lot Parcel Address Capacity Remarks 4 49M 13500 Mindanao Way 227 (min.) Replacement Parking (124 existing, 103 Pcl FF) ~~52 13051 Fiji Way 245 Temporary Parking~~
A.2. Recreation & Visitor-Serving Facilities (Page 2–8)	No designated public parking areas, including, but not limited to Lots OT, UR or FF, except for Temporary Parking areas, shall be converted to uses other than public parking or public park purposes.
A.3. Recreational Boating (Page 3-3)	~~Boats stored at parcel 52 will be brought by trailer to the ramp or will use an on-site hoist. In addition, the lessee of parcel 53 is designing a 140 boat dry stacked storage facility.~~ A dry stack storage facility is proposed for Parcel 52R and mast-up storage with an on-site launch hoist is proposed for Parcel GG. The Water Overlay Zone will provide an opportunity for other potential visitor serving amenities of a limited character (such as a beverage facility at the park, boat rentals, bike rentals, and the like).

SECTION (PAGE)	PROPOSED CHANGE
A.3. Recreational Boating (Page 3-5)	Deck storage for sailboats may be constructed on a portion of parcel 49 and dry stack storage may be constructed on parcels 52R, GG ~~53~~ or on other parcels with a marine commercial or visitor serving commercial designation, as long as ~~public parking and~~ views are preserved and adequate public parking is made available.
C.8. Land Use Plan (Page 8-11)	Water: Permitting recreational uses, wet boat slips, dry stack storage attached to a landside structure, docking and fueling of boats, flood control and light marine commercial.
C.8. Land Use Plan 9. Mindanao DZ (Page 8-18)	WOZ Parcel 52R - ~~Public Facility~~Boat Storage - Water WOZ Parcel GG - ~~Public Facility~~Boat Storage - Water
C.8. Land Use Plan 9. Mindanao DZ (Page 8-18)	Parcel 49M - Parking - Public Facilities
LUP Map Amendments	
C.8. Land Use Plan (Map 17: Mindanao DZ Land Use) (Maps 7, 16 & 21)	52R (land): Boat Storage + Waterfront Overlay 52R (water): Water GG (land): Boat Storage + Waterfront Overlay GG (water): Water
C.8. Land Use Plan (Map 17: Mindanao DZ Land Use) (Maps 7 & 16)	49M: Parking + Public Facilities
LIP Text Amendments	
LACC 22.46.1080	- Water: A category for recreational use, wet boat slips, dry stack storage attached to a landside structure, docking and fueling of boats, flood control and light marine commercial.
LACC 22.46.1670.B	B. The following permitted uses: - Bicycle and pedestrian path rights-of-way - Boat docks, piers; - Boating-related equipment storage; - Dry stack storage attached to a landside structure; - Public view areas; - Schools for boating, sailing and other marine-related activities in which teaching is done on the water; - Wet slips.
LACC 22.46.1690	These standards shall apply for all uses in the Water category: - Building height is limited to a maximum of 15 feet, except that dry stack storage facilities shall be allowed at heights permitted by the land use category on the land side of the parcel; - Development of new boat slips must be accompanied by adequate parking and land-side facilities, including boater restrooms.

SECTION (PAGE)	PROPOSED CHANGE
LACC 22.46.1880	- Parcel 52R Categories: ~~Public Facilities~~Boat Storage Waterfront Overlay Water - Parcel GG Categories: ~~Public Facilities~~Boat Storage Waterfront Overlay Water
LACC 22.46.1880	- Parcel 49M Categories: Parking Public Facilities
LACC 22.46.1880	Required public improvements: -- On Parcels 52R, GG, 53 and 54, said promenade shall only be constructed along the water if determined to be safe. ~~, and shall connect the promenade to Fiji Way~~ Access to the waterfront shall be provided along the property line between Parcels 52R and 53. A view park shall be constructed in lieu of the promenade. -- In the event that a dry stack facility is not constructed on Parcel 52R, no other use may be established until such time as a new site for a dry stack facility is designated in Marina del Rey.

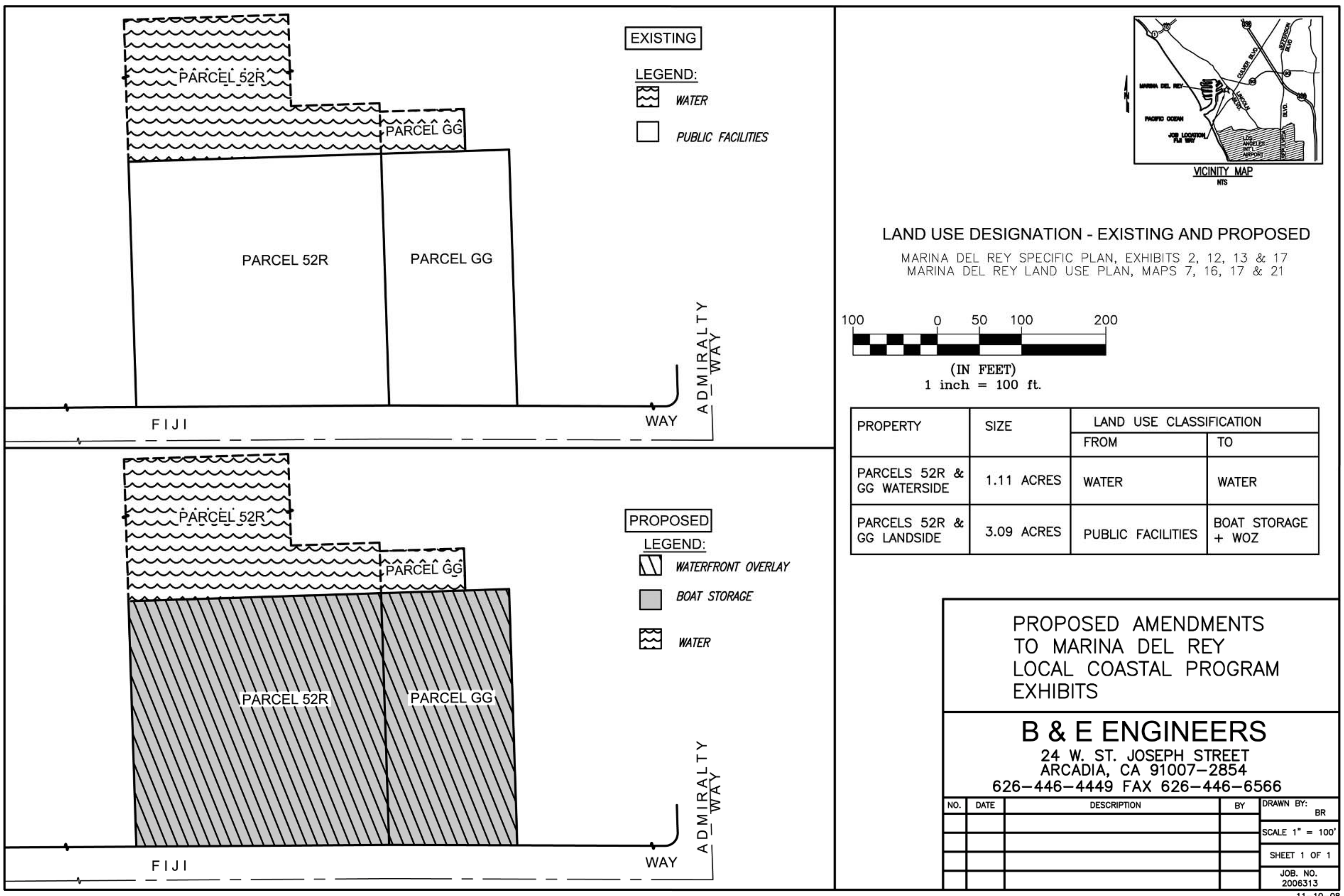
LIP Map Amendments	
Section (Map Name)	Proposed Change
LACC 22.46 (Exhibit 2: Land Use Plan) (Exhibit 13: Mindanao DZ) (Exhibits 12 & 17)	52R (land): Boat Storage + Waterfront Overlay 52R (water): Water GG (land): Boat Storage + Waterfront Overlay GG (water): Water
LACC 22.46 (Exhibit 2: Land Use Plan) (Exhibit 13: Mindanao DZ) (Exhibit 12)	49M: Parking + Public Facilities

Table 3 – Local Implementation Plan (LIP) Text Amendments

Section (Page)	Current Text	Proposed Change
LIP Text Amendments		
22.46.1680	Property in the Water category may be used for: A. The following uses, provided a conditional use permit has first been obtained as provided in Part 1 of Chapter 22.56, and while such permit is in full force and effect in conformity with the conditions of such permit for: - Access to property lawfully used for a purpose not permitted in the Water category; - Boat fuel docks; - Boat repair docks; - Boathouses, rowing clubs and facilities associated with crew racing; - Docking facilities for charter boats, sightseeing tours, party boats, etc.; - Oil and gas wells and observation facilities; - Publicly owned uses necessary to the maintenance of the public health, convenience or general welfare; - Signs as provided in Part 10 of Chapter 22.52 and in §22.46.1060 of this Specific Plan.	Property in the Water category may be used for: A. The following uses, provided a conditional use permit has first been obtained as provided in Part 1 of Chapter 22.56, and while such permit is in full force and effect in conformity with the conditions of such permit for: - Access to property lawfully used for a purpose not permitted in the Water category; - Boat fuel docks; - Boat repair docks; - Boat storage, including dry stack - Boathouses, rowing clubs and facilities associated with crew racing; - Docking facilities for charter boats, sightseeing tours, party boats, etc.; - Oil and gas wells and observation facilities; - Publicly owned uses necessary to the maintenance of the public health, convenience or general welfare; - Signs as provided in Part 10 of Chapter 22.52 and in §22.46.1060 of this Specific Plan.
22.46.1690	These standards shall apply for all uses in the Water category: - Building height is limited to a maximum of 15 feet; - Development of new boat slips must be accompanied by adequate parking and land-side facilities, including boater restrooms.	These standards shall apply for all uses in the Water category: - Building height is limited to a maximum of 15 feet, except that dry stack storage facilities shall be allowed at heights permitted by the land use category on the land side of the parcel; - Development of new boat slips must be accompanied by adequate parking and land-side facilities, including boater restrooms.
22.46.1880	- Parcel 52 Categories: Public Facilities Water - Parcel GG Categories: Public Facilities Water	- Parcel 52R Categories: ~~Public Facilities~~ Boat Storage Waterfront Overlay Water - Parcel GG Categories: ~~Public Facilities~~ Boat Storage Waterfront Overlay Water

Section (Page)	Current Text	Proposed Change
22.46.1880 Required public improvements:	- On Parcels 53 and 54, said promenade shall only be constructed along the water if determined to be safe, and shall connect the promenade to Fiji Way along the property line between Parcels 52 and 53.	- On Parcels GG, 52R, 53 and 54, said promenade shall only be constructed along the water if determined to be safe. A ~~and shall connect the~~ promenade ~~to Fiji Way~~ along the property line between Parcels 52R and 53 shall connect Fiji Way to the waterfront.

LIP MAP AMENDMENTS		
Section (Map Title)	Current Map Labels	Proposed Change
22.46 (Exhibit 2: Land Use Plan) (Exhibit 13: Mindanao DZ) (Exhibits 12 & 17)	52R (land): Public Facilities 52R (water): Water GG (land): Public Facilities GG (water): Water	52R (land): Boat Storage + Waterfront Overlay 52R (water): Water GG (land): Boat Storage + Waterfront Overlay GG (water): Water



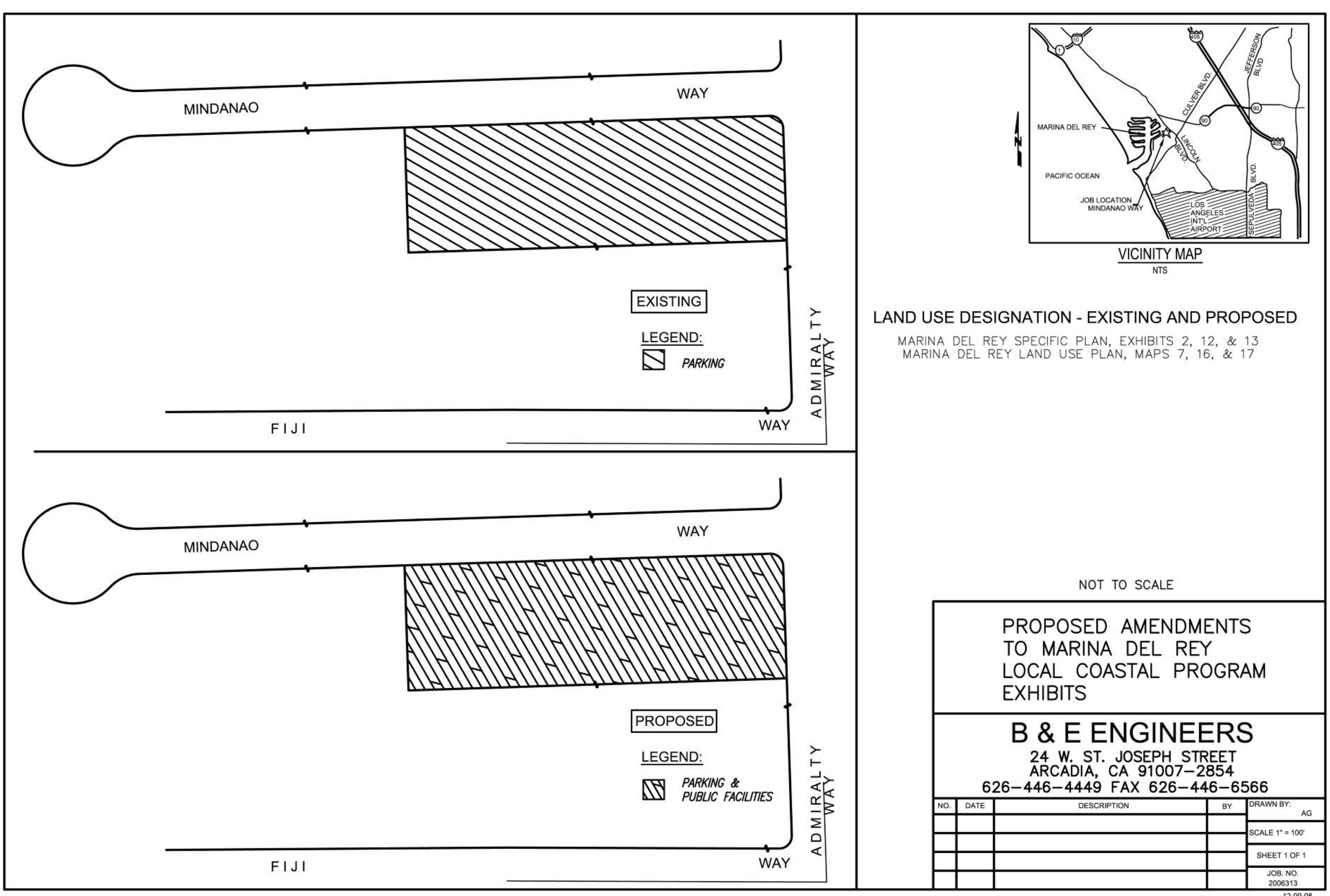


Exhibit 8 – Proposed LCP Land Use Designations

d. Conditional Use Permits

Per LACC §22.46.1480, regarding Boat Storage uses, a Conditional Use Permit (a **"CUP"**) is required for dry stack boat storage buildings and publicly owned uses necessary to the maintenance of the public health, convenience or general welfare (the Boatwright facility). Further, per LACC §22.46.1680, regarding Water uses, the Project will require a CUP to allow for ancillary, dockside fueling of tenants' boats.

e. Coastal Development Permit

Approval of a Coastal Development Permit ("CDP") is required to permit construction within the Specific Plan area,[6] to evoke the authority to locate the pedestrian promenade away from the waterfront in the interest of public safety,[7] and to allow a structure within 15 feet of the bulkhead.[8] The LUP requires that all applications for development go through the Coastal Development Permit process and provide evidence of consistency with Coastal Act policies and the LCP[9]. The Applicant requests that the CDP be conditioned to allow only those uses allowed for in the Boat Storage land use category under this CDP, providing assurance to the community as to the scope of the Project.

f. Parking Permit

A Parking Permit will be requested to permit the provision of on-site parking at a ratio of 0.36 cars per boat space as well as valet parking.[10] The use of valet parking would be instituted only in select instances to ensure that parking demand does not reach capacity. Per the Architectural Standards, dry land boat storage uses must provide parking at a rate of one-half car parking space per boat space provided[11] and per the LACC spaces shall be required for the Boatwright portion of the accessory facility as determined by the Director of Planning[12].

g. Setback Variance

A variance will be requested to allow for variation from the standards of LACC §22.46.1490 which sets forth a rear setback of 5 feet. The over-the-water design of the boat storage structure does not comply with this requirement, when measured from the bulkhead. While the Property's leasehold "property line" extends some 200 feet into the basin channel, the Applicant takes a conservative approach in measuring the setback from the edge of the Land Side. Further, the Variance request is in line with the requirements of the Architectural Standards which state that no structure be permitted within 15 feet from the face of the bulkhead.

1.12. Other Public Agencies Whose Approval Is Required

In addition to an amendment to the Local Coastal Program, other discretionary approvals are required to implement the proposed development project. Other public agencies whose review or approval is required include:

- California Coastal Commission
- Army Corps of Engineers
- Regional Water Quality Control Board
- California Department of Fish and Game
- United States Coast Guard

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[6] Marina del Rey Specific Plan, LACC Section 22.46.1110.
[7] Per LACC 22.46.1160, relocation of public access can be incorporated into the conditions of a CDP.
[8] Manual of Architectural Standards, Page 52.
[9] Marina del Rey Land Use Plan, February 8, 1996: page 8-9.
[10] Marina del Rey Specific Plan, LACC Chapter 22.56 Part 7.
[11] Manual of Architectural Standards, Page 10.
[12] LACC 22.52.1220

2. Initial Study Checklist

The Initial Study and Notice of Preparation for the project were prepared in accordance with CEQA Guidelines §15063 which states:

"Following preliminary review, the lead agency shall conduct an initial study to determine if the project may have a significant effect on the environment. If the lead agency can determine that an EIR will clearly be required for the project, an initial study is not required but still may be desirable.

The County of Los Angeles, as lead agency, has determined that there is substantial evidence that the proposed project may cause a significant effect on the environment. Based on this determination, and in accordance with CEQA Guidelines §15063, the lead agency is required to prepare an Environmental Impact Report (EIR).

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by that project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Impact Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Environmental Determination (to be completed by the Lead Agency)

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.
☐	I find that although the proposed project COULD have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
☒	I find that the proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects 1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and 2) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Shawna L. Schaffner
Signed

January 20, 2009
Date

Evaluation of Environmental Impacts:

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.

4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, “Earlier Analysis,” may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.

9. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	X			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	X			
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
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?		X		
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
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)?	X			
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	
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 Game or U.S. Fish and Wildlife Service?		X		
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 Game or US Fish and Wildlife Service?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?		X		
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?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X
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:		X		
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.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?	X			
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?		X		
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?		X		
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?			X	
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?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?		X		
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?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?		X		
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?			X	
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?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
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?				X
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?		X		
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)?				X
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?			X	
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?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	X			
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?			X	
j) Inundation by seiche, tsunami, or mudflow?			X	
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				X
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?	X			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?			X	
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?				X
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?				X
XI. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
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 expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?		X		
Police protection?			X	
Schools?				X
Parks?				X
Other public facilities?	X			
XIV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		X		
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		X		
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?		X		
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?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?	X			

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
XVI. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?		X		
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?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
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?			X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
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?		X		
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)?	X			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

3. Environmental Analysis

3.1. Aesthetics

a) *Would the project have a substantial adverse effect on a scenic vista?* ***(Less Than Significant Impact)***

The proposed project will introduce a boat storage structure on site as well as a two story office/customer lounge and Sheriff's Boatwright/Lifeguard shop. The dry stack boat storage is planned to be built on parcel 52R and would overhang over the marina by approximately 45 feet on the eastern side, and approximately 97 feet on the western side. The boat storage facility has been designed to accommodate up to 345 boats and 28 boat trailers.

The proposed structure would be approximately 70 feet in height. The gantry crane, track, and protective covering will span approximately 61 feet in width, run the length of the building, and extend approximately 82 feet in height at the highest point. The protective covering, or roof, will cover the crane and track, and offer shielding from the elements. The roof covering the crane will be approximately 12 feet taller than the roof covering the rest of the structure, which will be approximately 70 feet in height, as stated above. Finally, because of the gentle slope of the project site, which descends approximately seven feet from the street to the bulkhead, the dry stack structure will be approximately 63 feet tall from Fiji Way to about 70 feet tall along the water. Due to the differential in the grade of the site, the crane and protective covering will range from approximately 75 feet to 82 feet in height.

The structure will be visible from areas surrounding Basin H as well as from the marina. The predominant building material for the boat storage facility will be translucent grey and white polycarbonate panels, or a similar material, that allow for the absorption of light into the structure during the day. The structure will also have plaster walls that are grey/dark blue in color; however, the structure will be predominantly grey and white, as a majority of the structure will be comprised of the panels. The office/customer lounge and Sheriff's Boatwright/Lifeguard shop will be comprised of a combination of dark blue painted plaster walls and an insulated translucent plastic material. The proposed development on site will decrease the view of the marina from Fiji Way compared to the existing setting. Under the proposed project, approximately 50 percent of the site will remain open and will provide view corridors to the water. The EIR will contain a detailed analysis of the project's affect on scenic vistas throughout Marina del Rey.

b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* ***(Less Than Significant Impact)***

The Marina del Rey Local Coastal Program (LCP) characterizes Fiji Way as a scenic highway. Thus, the project site is visible from a scenic highway and could potentially impact scenic views from the highway to the water. The existing setting allows for uninterrupted views of the marina from Parcel 52R across Basin H. These views will be impacted by the proposed project. However, as part of the proposed project, a significant view corridor will be provided in accordance with the LCP. The EIR will contain a detailed analysis of the project's view corridors.

c) *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?* ***(Potentially Significant Impact))***

The proposed boat storage project is consistent with adjacent uses which include a public boat launch, dry storage, and a boat repair and maintenance facility. However, the project would add a new height and mass component to Fiji Way that does not currently exist. The project has been designed to maximize view corridors, and the boat storage structure will provide architectural articulation and varying colors to break up the massing. The project will limit views of Basin H from Fiji Way. A detailed analysis of aesthetic impacts will be provided in the EIR, and will include visual simulations and elevations of the proposed project. Aesthetics impacts are considered potentially significant.

d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? **(Potentially Significant Impact)***

The boat storage structure has been designed with a unique architectural cladding that absorbs light and allows it to penetrate through the structure, providing all necessary day time lighting. Approximately 40 footcandles of down light will be used to illuminate the storage facility at night. This nighttime lighting will give the structure a soft glow. Light levels at night will be adequate to provide safe working levels for the crane operation and staff. The parking lot will be lit at minimum legal levels. Additionally, cutoff fixtures will be used in the parking lot and on the office/Boatwright building, which will direct light down and will confine light to the project site. The materials used for the boat storage facility and the visitor lounge/office and Boatwright facility will be made of non-reflective materials which absorb light, reducing the amount of glare. It is not anticipated that the project will create a new source of substantial glare, because non-reflective building materials will be used and reflective surfaces on site (such as parked cars) will not be greater than current site conditions. Project lighting will be fully analyzed in the EIR.

3.2. Agricultural Resources

a) *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use? **(No Impact)***

The project site is not identified as Prime Farmland, Unique Farmland or Farmland of Statewide Importance. The site is already developed and is located in an urbanized area. No impacts on agricultural resources will occur as a result of project implementation.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? **(No Impact)***

The project site is not located in an area zoned for agricultural use, nor is it under a Williamson Act contract. No impacts will occur as a result of project implementation.

c) *Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? **(No Impact)***

No farmland exists on or near the project site. No Farmland will be converted to non-agricultural use. No impacts will occur as a result of project implementation.

3.3. Air Quality

Global climate change is essentially a change in the Earth's average weather, which can be measured by changes in temperature, precipitation and wind. Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, called for the California Air Resources Board (CARB) to develop regulations regarding how the State of California would address global climate change. Although there are currently no official thresholds or methodologies for determining the significance of a project's potential to contribute to greenhouse gasses in CEQA documents, an analysis will be completed for the proposed project because it has the potential to contribute to climate change. A full quantitative analysis will be performed in the Environmental Impact Report to assess the project's potential impacts to climate change.

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less Than Significant With Mitigation Incorporated)*

Marina del Rey is located in the South Coast Air Basin (SCAB) and is subject to standards and practices of the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). Additional regulations are governed by the EPA and Southern California Association of Governments (SCAG). SCAG has the primary responsibility for writing the federally mandated Air Quality Management Plan (AQMP). New development is required to comply with AQMP standards. The project will be subject to all applicable regulations and standards.

The proposed project could potentially conflict with or obstruct implementation of the applicable air quality plan. The project will result in new sources of emissions from operation of the mechanical equipment on site, such as the crane, and from new boats in the marina. Emissions will also be generated during the project construction. A detailed air quality report is in the process of being prepared. The air quality report will assess the impacts of the project and will identify mitigation measures to reduce impacts.

b) *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Less Than Significant With Mitigation Incorporated)*

Both short-term (construction) and long-term (operation) of the proposed project could potentially violate air quality standards and could contribute to air quality violations. The new boats that will utilize the dry stack storage facility could increase the amount of pollutants in the project area because more boats will be introduced to Marina del Rey. In addition, the operation of the crane that will move the boats could also increase pollutants. It is important to note that the boat repair facility located inside the boat storage structure will prevent pollutants from escaping and will control volatile organic compounds (VOCs), which reduce the impacts of the project on air quality. The extent of project impacts will be assessed in the project's air quality study. See response to 3.3(a) above.

c) *Would the project 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? (Potentially Significant Impact)*

The project could potentially result in a cumulatively considerable net increase in criteria pollutants during construction and thus, could impact air quality. Air quality impacts will be addressed in the project's air quality study and analyzed in detail in the EIR.

d) *Would the project expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant Impact))*

The project will not expose sensitive receptors to pollutant concentrations because no sensitive receptors exist near the project site. There are no schools within one quarter mile of the project site and the nearest residential land use (Villa Venetia) is more than one quarter mile from the site. Impacts will be less than significant.

e) *Would the project create objectionable odors affecting a substantial number of people? (Less Than Significant Impact)*

The project is not anticipated to generate objectionable odors that would affect a substantial number of people because the proposed project will not contain uses that are odor generating. The indoor boat repair facility located inside the boat storage structure will allow for work on boats to take place inside, which decreases the release of pollutants and odors.

3.4. Biological Resources

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?* ***(Less Than Significant With Mitigation Incorporated)***

Several reports have been/are being prepared to assess the impact of the project on biological resources. The Marine Biological Resource Assessment has been prepared jointly by Dr. Jeffrey Froke and Mr. Rick Ware. This report analyzes the short-term and long-term impacts of the proposed project on both terrestrial and marine species in the project area.

A bird study is in the process of being prepared by Dr. Jeffrey Froke. California Brown Pelicans and California Least Terns are known to forage in Marina del Rey. Additionally, Great Blue Herons are known to nest and forage within the area. However, no nests for California Brown Pelican, California Least Terns or Great Blue Herons occur on the project site. This study will analyze how the proposed project will impact several different bird species present in Marina del Rey, including but not limited to the California Least Tern, the California Brown Pelican and the Great Blue Heron.

An Eelgrass and Invasive Algae Survey /Impact Assessment are `being prepared by Rick Ware. This report represents the findings of the surveys conducted for the presence of eelgrass and invasive algae on the project site. This report will also assess the potential environmental effects of construction and long-term operation of the project.

A Wind Impact Assessment has been prepared by RWDI, which assesses the effect of the proposed project on wind conditions at and near the project site. The assessment also analyzes the potential loss of surface winds that may occur if the proposed project was to be completed. Mitigation measures will be implemented to reduce impacts to species identified in the reports discussed above.

b) *Would the project 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 Game or U. S. Fish and Wildlife Service?* ***(Less Than Significant With Mitigation Incorporated)***

See response to 3.4 (a) above. The project's impacts on biological resources will be analyzed in detail in the EIR.

The Ballona Wetlands Ecological Reserve (Ballona) is located immediately south of the project site, across Fiji Way. Project studies will focus on the indirect effect, and the potential impacts to Ballona. The EIR will include a detailed analysis of the project's potential impacts on Ballona. Mitigation measures focused on avoidance of impacts will be developed.

c) *Would the project 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?* ***(Less Than Significant With Mitigation Incorporated)***

The project involves fill of waters subject to Section 404 of the Clean Water Act. As part of the construction for the boat storage facility, several piles will be driven into the marina to secure the boat storage structure and the new dock structure. Mitigation measures will be implemented to reduce the impacts of the project. In addition, a Section 404 permit will be obtained for the project.

d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?* ***(Less Than Significant With Mitigation Incorporated)***

The project site is not used as a wildlife corridor or wildlife nursery site. However, the site is adjacent to the Ballona Wetlands Ecological Reserve and wildlife may traverse the site to get to Basin H of the marina. The project introduces development to the site which would reduce access to the marina. However, approximately 50 percent of the site will remain open to the marina, which will allow access to and from the marina. The project is not anticipated to substantially interfere with migratory corridors because a large portion of the site will still be open to allow for the free movement of wildlife. The EIR will analyze potential impacts.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?* ***(Less Than Significant Impact)***

The proposed project would not conflict with any local policies or ordinances protecting biological resources. See responses 3.4(a) through (d) above.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?* ***(Less Than Significant Impact)***

The proposed project would not 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 Ballona Wetlands Ecological Reserve is currently the subject of a habitat restoration planning process. The current draft plans involve restoration of wetlands in Area A, which is located south of the site across Fiji Way. The proposed project will not impact or restrict conservation/ restoration plans for the wetlands.

3.5. Cultural Resources

The Local Costal Program (LCP) for Marina del Rey states that there are two known archaeological sites partially within the LCP study area and two partially adjacent to the LCP study area. The LCP also states that there is a limited potential for any additional archaeological and paleontological finds. A Phase I Archeological study was conducted for the project by Matthew A. Boxt dated December 5, 2006. The survey and impact assessment was conducted to identify and evaluate any and all archaeological sites and historic properties that might exist on the project site. The survey included a review of records from the California State University (CSU) Fullerton South Central Coastal Information Center, which yielded no documentation of archaeological sites or historic structures on the project site. As described in the CSU Fullerton records, two archaeological surveys were conducted within the general project area and no prehistoric archaeological sites have been identified within one-quarter mile of the study tract.

The survey and impact assessment also involved a site visit by Mr. Boxt. The site was traversed in north/south transects and all areas that could be reasonably expected to contain prehistoric cultural resources were thoroughly inspected. As detailed in the report, no archaeological sites or isolated artifacts were observed on any part of the proposed development zone. The Phase I reconnaissance-level survey of the project site resulted in no evidence of archeological resources.

The report stated that the field study was limited to a surface inspection and that it is possible that prehistoric archaeological materials could be unearthed during development. However, it is Mr. Boxt's opinion that the likelihood of finding prehistoric archaeological materials is improbable. The report concluded that further archeological testing need not be undertaken and that the proposed project will not have an adverse effect on any known archaeological or historical resources. The report recommended that should any remains be encountered during development, all earthwork shall stop in the immediate area of the finds, and that a professional cultural resource specialist be contacted so that appropriate protection measures can be undertaken. The project will be conditioned to ensure compliance with this measure.

a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)*

The project would not cause a substantial adverse change in the significance of a historical resource. There are no historic structures on the project site and no impact would occur.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (No Impact)*

The project would not cause a substantial adverse change in the significance of an archaeological resource. There are no known archaeological sites on the project site and no known prehistoric archeological sites have been identified within one-quarter mile of the project site. No impacts will occur.

c) *Would the project directly or indirectly disturb or destroy a unique paleontological resource or site or unique geologic feature? (No Impact)*

The project would neither directly or indirectly destroy a unique paleontological resource or site or unique geologic feature since no such resources/features exist on site.

d) *Would the project disturb any human remains, including those interred outside of formal cemeteries? (No Impact)*

No human remains are known to exist on site and no impacts will occur. The project will be conditioned to comply with grading regulations to ensure that no remains are disturbed.

3.6. Geology and Soils

a) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of known earthquake fault? ii) Strong Seismic ground shaking? iii) Seismic related ground failure, including liquefaction? iv) Landslides? (Potentially Significant Impact)*

The proposed project is located in an area with known fault zones and seismic activity. The project site is not located on or near an Alquist-Priolo Earthquake Fault Zone. However, the project site is identified as being within a Liquefaction Zone per the State of California Seismic Hazard Zones Map and the Seismic Hazards map in the Marina del Rey Land Use Plan. A geotechnical study is currently being prepared for the project. The geotechnical study will include project specific mitigation measures to protect against liquefaction.

b) *Would the project result in substantial soil erosion or the loss of topsoil? (Less Than Significant With Mitigation Incorporated)*

Erosion is a concern on project sites when soil or other materials lay dry during construction activities, creating dust, which can be carried away by wind, rain, or other elements. Standard construction practices will be implemented to prevent any erosion or loss of topsoil, such as temporary ground covers, desilting basins, and erosion dams. The EIR will identify specific Best Management Practices and mitigation measures that will reduce project impacts to a level of insignificance.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? **(Less Than Significant With Mitigation Incorporated)***

The project site lies within a Liquefaction Zone per the State of California Seismic Hazard Zones Map. The project would not result in a landslide due to the relatively flat nature of the project site. Lateral spreading, subsidence and collapse could occur as a result of the fact that the project site is in a liquefaction zone. The geotechnical study that is currently being prepared will analyze these issues. See response to 3.6(a) above.

d) *Would the project 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? **(Less Than Significant Impact)***

It is not currently known whether the project site contains expansive soil, as defined in Table 18-1-B of the Uniform Building Code. A geotechnical study is currently being prepared. Specific mitigation measures will be identified in the geotechnical study which will reduce project impacts to a level of insignificance.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal for wastewater? **(No Impact)***

Septic or alternative disposal systems are not included in the project. The proposed project will have no impact because sewers are available for the disposal of wastewater.

3.7. Hazards and Hazardous Materials

A Phase I Preliminary Environmental Site Assessment was conducted for the project site by Methane Specialists. The Phase I report identified that two 1,000 gallon underground storage tanks that were removed from the site in 1998 had leaked, contaminating the soil on the project site. Contamination is limited to Parcel GG and is located near the south east portion of the site. The tanks leaked underneath the maintenance building, a portion of the maintenance yard and a portion of the parking lot fronting Fiji Way. Remediation is needed to clean up the pollution from the leaking underground storage tanks (LUSTS). The County of Los Angeles, as the landowner, is in the process of developing a plan for remediation. However, the full extent of the existing contamination and the level of clean up necessary are currently unknown. Remediation is likely take place concurrent with project construction. The remediation is independent of the proposed project.

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **(Less Than Significant With Mitigation Incorporated)***

The proposed project will not involve the routine transport of hazardous materials. However, potentially hazardous materials will be stored on site such as paints, solvents, and fuel. Hazardous materials shall be accessed by trained personnel only, and not the general public. Best Management Practices (BMPs) will be incorporated into the project to reduce the potential occurrence of upset or accident.

b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? **(Less Than Significant With Mitigation Incorporated)***

The proposed project could create a significant hazard to the public or environment relating to hazardous materials as such materials will be used and stored on site. However, such materials shall be accessed by trained personnel only, and not the general public. BMPs will be incorporated into the project to reduce the potential occurrence of upset or accident. Additionally, mitigation measures will be incorporated into the EIR to further reduce any potential impacts of the project.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? **(No Impact)***

Although the proposed project will handle hazardous materials on site (oils, paint, solvents, fuel), the project is not located within one-quarter mile of an existing or proposed school. Additionally, as described in 3.7(b) above, only trained personnel will have access to potentially hazardous materials. Impacts will be less than significant.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment? **(Less Than Significant With Mitigation Incorporated)***

As detailed in the Waterboard Geotracker database, the project site is listed as a Leaking Underground Fuel Tank (LUFT) site. The project site is listed in the Environmental Data Resources, Inc. (EDR) Radius Report as a hazardous waste generator and a leaking underground storage tank (LUST) site. As described above the County of Los Angeles is in the process of assessing the extent of contamination from the LUST and is developing a remediation plan independent of the proposed project. The project site will be fully remediated prior to project operation.

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? **(Less Than Significant Impact)***

The project is located approximately four miles from the Los Angeles International Airport and is not within the airport land use planning area. The proposed project is not anticipated to create a safety hazard for people residing or working in the project area. The proposed project will include a structure that is up to 70 feet tall, with the gantry crane and protective covering up to 82 feet tall, which is considerably shorter than a number of existing office and residential buildings in the vicinity. The proposed project will not interfere with air traffic.

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? **(No Impact)***

The project site is not located within the vicinity of a private airstrip and no impacts will occur as a result of project implementation.

g) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? **(No Impact)***

The project will not impair the implementation of an adopted emergency response or evacuation plan. Additionally, the project will not physically interfere with an adopted emergency response or evacuation plan. No impacts will occur.

h) *Would the project 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? **(No Impact)***

The proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires because the project site is not located in a high fire hazard area. The project site is located in a developed and urbanized area and is not subject to wildland fires. Area A of the Ballona Wetlands Ecological Reserve is located south of the site, and is the only natural area in the immediate vicinity. Fire risk in a wetland is low. Final building plans for the project will be submitted for the Los Angeles County Fire Department's review. No impacts will occur with project implementation.

3.8. Hydrology and Water Quality

a) *Would the project violate any water quality standards or waste discharge requirements? **(Less Than Significant With Mitigation Incorporated)***

The proposed project will be required to comply with all state and local regulations related to water quality standards and waste discharge. The project will be required to submit a Notice of Intent to the State Water Quality Control Board and obtain a Waste Discharge Identification number. Additionally, since the project is greater than one acre in size, the applicant shall be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) for project construction. The project will involve construction within public waterways, including dredging, and will require an Army Corps of Engineers (ACOE) Section 404 Permit and Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification. The project will also include a boat wash down area. The runoff from the discharge area will be diverted to a filtration system prior to entering the sanitary sewer system.

Source control Best Management Practices (BMPs) and/or treatment control BMPs will be incorporated into the project design to reduce potential pollutants from entering the marina. BMPs will include bio-filtration and bio-retention swales. Additionally, detailed mitigation measures such as requiring filtration of runoff from parking lots and other impervious surfaces will be incorporated into the project. Extensive water quality BMPs will be incorporated into the project design to ensure that no impacts occur to water quality. The discharge from the boat wash-down area will be filtered before reaching the sanitary sewer system. The boat storage structure will also have catchment basins or filters that will catch runoff or leaks prior to discharge. Mitigation measures will also be incorporated where necessary to ensure protection of water quality.

The dry stack boat storage concept will result in water quality benefits when compared to wet boat slips. Dry boat storage spaces reduce the release of pollutants to surface waters when compared to wet boat slips. With wet boat slips, paint, fuel, oil and other pollutants can leak into the water over time. The dry stack boat storage is environmentally preferable to wet slips.

b) *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted? **(No Impact)***

The project will not impact groundwater supplies or groundwater recharge, as no groundwater will be drawn for site use. The project will increase the amount of pervious surface on site by more than 175 percent; however, the project will not interfere with groundwater. No impact to groundwater or groundwater recharge will occur with implementation of the proposed project.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner which would result in substantial erosion or siltation on or off site? **(Less Than Significant Impact)***

The project will not substantially alter existing drainage, including alteration of an existing stream or river. No streams or rivers are located on the site. Additionally, the drainage patterns of the site will be improved to divert runoff to bio-filtration systems. No impact will occur with implementation of the proposed project.

d) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? **(No Impact)***

The proposed project would not alter the existing drainage pattern of the site or area. The proposed project will increase permeable surface approximately 175 percent from the existing setting. Additionally, runoff on the site will be diverted to bio-filtration systems, which will further reduce the amount of runoff discharged from the site. No impacts will occur.

e) *Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? **(No Impact)***

As described in 3.8 (d) above, the project will increase permeable surface approximately 175 percent from the existing setting. The increase in permeable surface will decrease the amount of runoff produced by the project and discharged from the site. Additionally, runoff will be diverted to bio-filtration systems which will further reduce runoff on the site. The proposed project represents a significant benefit to water quality as compared to the existing setting. No impacts will occur.

f) *Would the project otherwise substantially degrade water quality? **(Less Than Significant With Mitigation Incorporated)***

The proposed project could potentially degrade water quality during both short-term construction activities and long-term operation. As described above in Section 3.8(a) BMPs will be incorporated into the project to reduce water runoff and discharge from the site. Mitigation measures will be included in the EIR to reduce impacts to water quality.

g) *Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? **(No Impact)***

The project site is within a flood hazard zone. The water-side portion of the site is located within Flood Zone A2. The northern portion of the site is located within Flood Zone B, and the southern portion of the site is located in Flood Zone C. The proposed project includes the dry stack boat storage structure and an office and lounge building. The project would not place housing within a 100-year flood hazard area, as no housing is proposed. No impacts to housing will occur with project implementation.

h) *Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows? **(Potentially Significant Impact)***

The project is located in an identified flood hazard area. The project EIR will analyze the potential environmental impacts related to flood hazards and will include the following components: an evaluation of the existing groundwater levels on site, evaluation of the current and proposed drainage patterns on site, and evaluation of potential for flooding. Mitigation measures will be incorporated into the project to reduce impacts to an acceptable level.

i) *Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? **(Less Than Significant Impact)***

See responses to Sections 3.8(g) and 3.8(h) above. No impact will occur with project implementation.

j) *Inundation by seiche, tsunami or mudflow? **(Less Than Significant Impact)***

The proposed project is a dry stack boat storage facility within Marina del Rey. While there is slight risk of a seiche or tsunami, such occurrences are not common within Marina del Rey. Additionally, there is limited risk of mudflow on the site. Project impacts will be less than significant.

3.9. Land Use and Planning

a) *Would the project physically divide an established community? **(No Impact)***

The proposed project would not divide an established community. The project would significantly increase the number of boat storage spaces within Marina del Rey, and give the public increased opportunities and options as it relates to boat storage. The proposed project will not physically divide an established community, and no impact will occur.

b) *Would the project 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? **(Potentially Significant Impact)***

The County of Los Angeles General Plan and Zoning designations for the project site are "Specific Plan." The Marina del Rey Local Coastal Program designation for the project site is "Public Facilities." The proposed project would require amendments to the Local Coastal Program (LCP) Land Use Plan (LUP). An amendment of Parcels 52R and GG would be necessary to allow for the boat storage use. The LCP LUP designation for the site would be changed from Public Facilities to Boat Storage with a Waterfront Overlay over the land-side. Parcel 49M would be redesignated to Public Facilities to allow for the relocation of the County's administrative offices and a parking structure for County and public parking. The project EIR will include a detailed analysis of the necessary LCP amendment and the impacts of the amendment. Additionally, the EIR will include a detailed analysis of the project's compliance with the LCP policies and goals, including shoreline access, recreational and visitor-serving facilities, and recreational boating.

The proposed project would not conflict with an adopted plan intended to avoid or mitigate environmental effects.

c) *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? **(Less Than Significant Impact)***

The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. The project site is not covered by a habitat conservation plan or a natural community conservation plan. However, the Ballona Wetlands Ecological Reserve is located immediately south of the site, across Fiji Way. An extensive planning process is currently underway to remediate habitat throughout the reserve. The timeline for adopting a plan for the Ballona Wetlands Ecological Reserve is unclear, and the planning process has been on-going for a number of years.

The proposed project will not interfere with the adoption or implementation of any such plan. Additionally, the proposed project will not have any direct physical effects on the Reserve.

3.10. Mineral Resources

a) *Would the project 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? **(No Impact)***

The proposed project will not result in the loss of availability of either a known mineral resource or a locally important mineral resource recovery site. The project site is currently paved, and developed with a parking lot and County and Sheriff offices. The proposed project will not preclude access to mineral resources, should they be discovered to exist in the future. No impact will occur with the implementation of the proposed project.

b) *Would the project 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?* ***(No Impact)***

See response to item 3.10 (a) above. No impact will occur with the implementation of the proposed project.

3.11. Noise

a) *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?* ***(Less Than Significant With Mitigation Incorporated)***

Potential noise impacts associated with the proposed project are related to construction activities, traffic, and operation of the machinery for the boat storage facility. The County of Los Angeles General Plan Noise Ordinance provides guidelines for the regulation of noise. In addition, a noise study will be prepared and included in the EIR related to the potential noise impacts of the proposed project.

Demolition and construction activities will generate short-term noise on the project site. Construction noise represents a short-term impact on ambient noise levels. Noise impacts will be fully analyzed in the noise study. All construction activity will be required to comply with the County's Noise Ordinance. Biological resources, such as known nesting areas and other sensitive habitat will be taken into account in the noise study. Any significant noise impacts identified in the EIR will be reduced through the application of mitigation measures.

b) *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?* ***(Less Than Significant With Mitigation Incorporated)***

Construction activity for the proposed project could potentially produce groundborne noise levels. This is especially likely during demolition of the existing dock structure, and during pile driving activities. The County's standard construction regulations require that all construction vehicles or equipment, fixed or mobile, be equipped with properly operating and maintained mufflers to minimize noise and vibration. The noise study will include a detailed vibration assessment, and mitigation measures will be identified to reduce potential impacts.

c) *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?* ***(Potentially Significant Impact)***

The proposed project will result in an incremental increase in noise levels in the project vicinity. The project noise study will determine whether the increase in noise levels is considered significant. The majority of noise generated on the site will be associated with the operation of the crane within the boat storage structure. It is important to note that the crane will be shielded on three sides, thus reducing operational noise. Noise will also be generated by new boats in the marina. See response to 3.11(a) above.

The long-term operation of the project will result in an increase in noise levels over existing conditions. However, the project site is located next to a boat repair and maintenance facility, which produces noise throughout the day. Additionally, the public boat launch ramp also produces noise as boats are launched and removed from the marina. The noise study will assess the potential impacts of the project. Any significant noise impacts identified in the EIR will be reduced through the application of mitigation measures. See. 3.11(a) above.

d) *Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? **(Less Than Significant with Mitigation Incorporated)***

It is anticipated that the project will result in a substantial temporary impact to noise levels in the project vicinity due to demolition and construction activities; however, construction impacts are short-term, and mitigation measures will be incorporated to reduce levels to less than significant.

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 expose people residing or working in the project area to excessive noise levels? **(No Impact)***

The nearest airport to the project site is the Los Angeles International Airport, located approximately four miles southeast of the project site. The project is not within the CNEL contour line for noise impact zones. Additionally, the project site is not within the Airport Environs Land Use Plan for any airport. The project will not expose people residing or working in the project area to excessive noise levels and no impact will occur.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? **(No Impact)***

There is no private airstrip located within the vicinity of the proposed project. Therefore, the project will not expose people residing or working in the project area to excessive noise levels, and no impact will occur.

3.12. Population and Housing

a) *Would the project induce substantial population growth in an area, either directly or indirectly? **(No Impact)***

The proposed project will not directly induce substantial population growth, as the project will remain in the general existing boundaries of the site and the marina, and will not involve the construction of residential homes. The project will not indirectly induce substantial population growth. The project site is located in an area undergoing significant redevelopment; however, the provision of additional boat storage spaces to Marina del Rey will not induce population growth. Rather, the project will serve an existing demand. No impacts will occur with the implementation of the proposed project.

b) *Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? **(No Impact)***

The proposed project will not displace housing, and no replacement housing will be necessary. No impact will occur with the implementation of the proposed project.

c) *Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? **(No Impact)***

See 3.12 (b) above. No impact will occur with the implementation of the proposed project.

3.13. Public Services

a) *Would the project result in substantial adverse 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?* ***(Potentially Significant Impact)***

The proposed project involves the construction of a dry stack boat storage facility and associated improvements. The project will require the relocation of existing governmental offices on Parcel GG to an alternate location within Marina del Rey. The project will also temporarily impact the Sheriff's Boatwright/Lifeguard facility, which will be reconstructed on-site. Extensive coordination between the project team and the Sheriff's Department will occur to ensure no adverse impacts on the Boatwright operation. The EIR will include a plan detailing how the County offices and Sheriff's/Lifeguard facilities will be accommodated to ensure minimal to no disruption of service.

The only public boat launch facility within Marina del Rey is located immediately northeast of the project site, at the terminus of Basin H. The proposed project will include new dock facilities that extend into Basin H up to 200 feet on the west side of the site and up to 147 feet on the eastern side of the site. A thorough navigational clearance assessment will be provide in the EIR to determine whether impacts on the public boat launch will occur. Best Management Practices and/or mitigation measures will be developed if necessary to reduce potential impacts from the Boat Central project on the public boat launch facility.

The proposed project will have adequate emergency access, and the project plans must be reviewed and approved by the Fire Department. The proposed project is not a use that creates a significant demand on fire protection services. The Fire Department will be consulted to ensure the project does not result in impacts on fire protection services. Additionally, the project is not anticipated to create a high demand for police protection services. The Sheriff's Department will be consulted to ensure the project does not impact police protection services. The proposed project will not impact schools as no new students or residents are created as part of the project. Additionally, the project will not impact parks. The project includes a public promenade and a view park, and will increase the amount of park space within Marina del Rey.

3.14. Recreation

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?* ***(No Impact)***

The proposed project will add 345 dry stack boat storage spaces, and 30 mast-up sail boat storage spaces to Marina del Rey. The project will significantly increase recreational opportunities within Marina del Rey. The project will also include a public promenade and a view park. The project will not increase use of existing neighborhood or regional parks, but rather will provide new recreational facilities. No impact will occur as a result of project implementation.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?* ***(Less Than Significant with Mitigation Incorporated)***

The proposed project includes recreational facilities, the construction of which may have adverse physical effects on the environment. A detailed analysis of the project's impacts on the environment will be included in the EIR. Best Management Practices and mitigation measures will be incorporated into the project in an effort to reduce physical effects on the environment to a level of insignificance. Project impacts are potentially significant.

3.15. Transportation/Traffic

a) *Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? **(Less Than Significant With Mitigation Incorporated)***

The proposed project will result in a very small number of peak hour vehicle trips. A detail Traffic Impact Analysis is being prepared for the project, which will quantify project specific impacts of the project. Mitigation measures will be introduced where impacts occur. It is anticipated that project impacts will be reduced to a level of insignificance through implementation of mitigation measures.

b) *Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? **(Less Than Significant With Mitigation Incorporated)***

See response to 3.15(a) above. The proposed project will result in a very small number of peak hour vehicle trips. A detail Traffic Impact Analysis is being prepared for the project, which will quantify project specific, and cumulative or incremental impacts of the project. Mitigation measures will be introduced where impacts occur. It is anticipated that project impacts will be reduced to a level of insignificance through implementation of mitigation measures.

c) *Would the project 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? **(No Impact)***

The proposed project will not result in a change to air traffic patterns. The proposed Boat Central project involves the construction and operation of a 70-foot-high dry stack boat storage facility. There are a number of high buildings within the project vicinity, and the introduction of the proposed structure will not result in any safety risks. No impact will occur as a result of project implementation.

d) *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **(No Impact)***

The proposed project would not increase hazards due to a design feature or incompatible use. The proposed project would reduce the number of vehicular access points on the property to one, thereby streamlining circulation on the site. No adjoining roadways will be affected by the proposed project and no impacts will occur with project implementation.

e) *Would the project result in inadequate emergency access? **(No Impact)***

The project would not result in inadequate emergency access. Emergency access will be provided via Fiji Way through the primary driveway. Emergency access will also be provided on the western side of the structure along the public promenade. No impacts will occur to emergency access as a result of the proposed project.

f) *Would the project result in inadequate parking capacity? **(Potentially Significant Impact)***

The proposed project site contains a public parking lot with 237 free parking spaces. The parking is primarily used by charter boat passengers; however, the parking lot is frequently used by other visitors to the marina during weekends and other peak times. The parking is also used by motor homes and vans on a transient basis. The parking spaces currently located on Parcel 52R will be relocated off-site by the County of Los Angeles. The parking for the charter boat use will be relocated to the Fisherman's Village, where a parking structure is planned. Parking used by the County offices will be relocated offsite as part of the office relocation. However, formal plans to relocate the balance of the parking have not been made. Additionally, if the parking is relocated to Fisherman's Village, it is not known when that project will be complete and parking will be available. If the public parking on parcel 52R is displaced prior to the availability of replacement parking at Fisherman's Village, alternate arrangements will be made to ensure the availability of temporary public parking until the ultimate parking lot is available. The project EIR will analyze the impact of relocating free parking to an off-site location.

The Marina del Rey Specific Plan requires parking at the ratio of one half (0.5) parking space per boat stored. This ratio is not supported by industry experience which has shown that a 0.25 parking ratio is adequate for this type of facility.[13] A parking analysis was conducted in summer of 2007 by Hirsch/Green Transportation Consulting, Inc, which indicates that the proposed Project parking ratio of 0.32 (135 full size parking spaces, including 4 handicapped stalls) is more than adequate. Mitigation will be incorporated into the project requiring a valet parking plan for peak periods. For a limited number of peak periods (July 4, Labor Day) when boat usage may approach the capacity of the proposed on-site parking, a valet parking plan will be employed to add 21 additional spaces. The valet parking plan will provide an on-site parking ratio of 0.37 which would also be below the County standard of 0.5. Therefore, a parking variance will be requested to allow less parking than is required.

g) *Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? (No Impact)*

The proposed Boat Central project would not conflict with adopted policies, plans, or programs supporting alternative transportation. Additionally, bicycle storage racks will be incorporated into the customer lounge and office building to encourage employees and boaters to bike to the site. There would be no impacts on alternative transportation due to project implementation.

3.16. Utilities and Service Systems

a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (No Impact)*

The proposed project will not exceed wastewater treatment requirements of the Regional Water Quality Control Board As described in 3.8(d), (e), and (f) above, the project will result in an improvement in water quality, and a reduction in runoff as compared to the existing setting. The project will incorporate BMPs and water quality treatment features to ensure that the project will not exceed wastewater treatment requirements. The project will result in an improvement in water quality, and an increase in permeable surface as compared to the existing setting. No impact will occur with project implementation.

b) *Would the project 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? (Less Than Significant With Mitigation Incorporated)*

See response to item 3.16(a) above. The project will involve the construction of new water runoff treatment and filtration devices. These treatment devices will result in an improvement in water quality discharged from the site. However, all improvements will be contained to the project site, and no new water or wastewater treatment facilities will be required off-site. The construction of new treatment devices will not impact the existing infrastructure off-site, because less runoff will be diverted to the wastewater system.

[13] Linscott, Law & Greenspan report on Boat Central proposed parking ratio.

A sewer line and a tidal conduit currently bisect the project site. The sewer line runs along the bulkhead, and the tidal conduit runs from Basin H through the site to the Ballona Wetlands Ecological Reserve. Potential impacts to utilities on the project site will be analyzed in detail in the project EIR. With implementation of mitigation measures to protect existing infrastructure, project impacts will be less than significant.

c) *Would the project 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? (Less Than Significant)*

See response to items 3.16(a) and (b) above. All new treatment devices will be contained on-site, and will not require the expansion of existing facilities off-site. The project will result in a decrease in impervious surface and water runoff discharged from the site. Project impacts will be less than significant.

d) *Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (Less Than Significant)*

The proposed project would require additional water supplies as compared to the existing setting. Currently, the County offices and Sheriff's Boatwright/Lifeguard facility utilize water. The Sheriff's Boatwright/Lifeguard facility will continue to use water as part of their daily operations. The project will incorporate a locker room facility, complete with showers and restrooms. The project will also include a boat wash-down area, which will create a new demand for water. However, the project does not involve uses that have intensive water demand, such as residential developments. The EIR will address the water demand of the proposed project.

e) *Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (Less Than Significant)*

The project will result in an increase in wastewater generated on-site. However, the project's increase will be minimal because the uses are not considered high wastewater generators. The EIR will contain a detailed analysis of the wastewater treatment provider's ability to serve the site. The additional capacity or increase in demand that will result from project implementation will be low and impacts are anticipated to be less than significant.

f) *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (Less Than Significant)*

The customer lounge and offices will generate a small amount of solid waste. Additionally, solid waste may be generated by the boaters utilizing the dry storage facility. However, the proposed project is not an intensive generator of solid waste and impacts are anticipated to be less than significant.

g) *Would the project comply with federal, state and local statutes and regulations related to solid waste? (Less Than Significant)*

The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. Since the project will result in a small increase in solid waste, impacts are expected to be less than significant.

3.17. Mandatory Findings of Significance

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?* ***(Less Than Significant With Mitigation Incorporated)***

The project will not result in the substantial reduction in the habitat of 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. No traces of artifacts or historical buildings are known to exist on site.

While the project will not threaten or eliminate wildlife, the proposed project has the potential to impact the California Least Tern and the Brown Pelican, both identified as endangered species by USFWS. In addition, dredging activities have the potential to degrade visibility in the water, impacting foraging ability for the Least Tern. However, mitigation measures will be included in the EIR to prevent potential significant impacts to wildlife to a level of insignificance.

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, effects of other current projects and the effects of probable future projects.)* ***(Potentially Significant Impact)***

Marina del Rey is currently experiencing a great deal of redevelopment. There are a number of active projects going on throughout the marina. More specifically, there are two known projects on Fiji Way, Fisherman's Village and Villa Venetia, which are at varying stages in the planning process. The project EIR will contain an in-depth cumulative impacts analysis focusing on these two nearby projects, and other known projects in the surrounding area.

c) *Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?* ***(Less Than Significant Impact)***

Environmental effects of the project are not anticipated to cause substantial adverse effects (either directly or indirectly) on human beings because environmental impacts resulting from the project will be lessened through mitigation.

4. References

Documents Consulted

- County of Los Angeles General Plan, adopted November 25, 1980 and the County of Los Angeles Streamlined General Plan
- County of Los Angeles General Plan Policy Maps:
- Relative Slope Stability Map
- Seismic Zones Map
- Special Management Area Map
- Conservation and Open Space Policy Map
- Marina del Rey Land Use Plan, a component of the Los Angeles County Local Coastal Program, February 8, 1996
- Methane Specialists, *Draft Phase I Preliminary Environmental Site Assessment*, August 3, 2007

Individuals and Organizations Consulted

- Association of Environmental Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (Revised Draft), April 27, 2007
- Michael Kisko, Land and Water Use Scientist of the California Department of Conservation and Farmland Mapping Division
- Jennifer Carter, Van Wert, Inc.
- Roger Van Wert, Van Wert, Inc.
- Steve Matsler, B&E Engineering
- Jeff Pence, MDR Boat Central
- Tom Hogan, MDR Boat Central
- Kathleen Crum, CAA Planning
- Margaret Partridge, CAA Planning
- Shawna Schaffner, CAA Planning
- Paul Shaver, CAA Planning

Appendix B –
NOP Comment Letters

From: Sean P. Bergquist
Sent: Tuesday, January 27, 2009 12:03 PM
To: mtripp@planning.lacounty.gov
Cc: Shelley Luce; Grace Lee
Subject: Boat Central NOP/IS

Michael,

I've quickly scanned the NOP/IS for the Boat Central project. Of particular importance to the Santa Monica Bay Restoration Commission is the Biological Resources and Hydrology and Water Quality sections.

The only unrestricted connection to the Ballona wetlands occurs within the project site. The culvert between Marina Del Rey and the Ballona wetlands is within the project site and will be impacted by the overhanging building and additional docks. The Marina is significant marine fish spawning and nursery habitat, particularly in this area, as this is the only location where larger fish species enter the Ballona wetlands. Ballona wetland is the only major wetland in the Santa Monica Bay and the only remaining large wetland in Los Angeles County. Impacts to this habitat, including habitat linkage will severely degrade regional fish species and other wildlife dependent on fish . These impacts must be considered in the EIR and acceptable mitigation measures should be included (for example, improving the existing connection or creating an additional connection in an alternate location).

Hydrology and Water Quality will also be impacted by this project.

"The dry stack boat storage concept will result in water quality benefits when compared to wet boat
slips. Dry boat storage spaces reduce the release of pollutants to surface waters when compared to wet boat slips. With wet boat slips, paint, fuel, oil and other pollutants can leak into the water over time.
The dry stack boat storage is environmentally preferable to wet slips."

This statement is false. Unless the county proposes to reduce the number of wet slips in the marina in a equal amount to those added by the dry stack storage there will be a net increase of boats in the marina. The result of which is a net decrease in water quality. Water quality and sediment in the back basins, including the location of the dry stack storage, are significantly worse than the main channel of the marina. Increased boat traffic and storage in Basin H will result in a lower water and sediment quality. These issues should be considered in the EIR and proper mitigation should be included (for example, sewage pump out and bilge clean up of all boats when placed in dry stack storage). Additionally, impacts to the hydraulic connection to the wetland should be considered.

If you would like to discuss these issues further you can reach me at 310-216-9899

Please include these comments in the public record.

If you have any further questions, please feel free to contact me via phone or email.

Cheers,

Sean Bergquist
Restoration Program Manager
Santa Monica Bay Restoration Commission

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

January 28, 2009

Mr. Michael Tripp
County of Los Angeles
Department of Regional Planning
320 Temple Street
Los Angeles, CA 90012

FEB - 2 2009

Dear Mr. Tripp:

Notice of Preparation of a Draft Environmental Impact Report (Draft EIR) for the Boat Central Project

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft environmental impact report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality analysis and electronic versions of all air quality modeling and health risk assessment files. Electronic files include spreadsheets, database files, input files, output files, etc., and does not mean Adobe PDF files. Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. Alternatively, the lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2007 Model. This model is available on the SCAQMD Website at: www.urbemis.com.

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

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

It is recommended that lead agencies for projects generating or attracting vehicular trips, especially heavy-duty diesel-fueled vehicles, perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on sitting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. Please call Daniel Garcia, Air Quality Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development and Area Sources

SS:DG:AK
LAC090123-03AK
Control Number

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

January 29, 2009

FEB - 2 2009

Mr. Michael Tripp
LOS ANGELES COUNTY DEPARTMENT OF REGIONAL PLANNING
320 Temple Street
Los Angeles, CA 90012

Re: SCH#2009011058; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Boat Central Project; Los Angeles County, California

Dear Mr. Tripp:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 designated to protect California's Native American Cultural Resources. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the 2007 CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE)', and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following action:

√ Contact the appropriate California Historic Resources Information Center (CHRIS) for possible 'recorded sites' in locations where the development will or might occur.. Contact information for the Information Center nearest you is available from the State Office of Historic Preservation (916/653-7278)/ http://www.ohp.parks.ca.gov. The record search will determine:

- If a part or the entire APE has been previously surveyed for cultural resources.
- If any known cultural resources have already been recorded in or adjacent to the APE.
- If the probability is low, moderate, or high that cultural resources are located in the APE.
- If a survey is required to determine whether previously unrecorded cultural resources are present.

√ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.

√ The Native American Heritage Commission (NAHC) performed:

* A Sacred Lands File (SLF) search of the project 'area of potential effect (APE)': The results: No known Native American Cultural Resources were identified within one-half mile of the 'area of potential effect' (APE)..; However the NAHC SLF is not exhaustive and local tribal contacts should be consulted from the attached list and the there are Native American cultural resources in close proximity..

- The NAHC advises the use of Native American Monitors, also, when professional archaeologists or the equivalent are employed by project proponents, in order to ensure proper identification and care given cultural resources that may be discovered. The NAHC, FURTHER, recommends that contact be made with Native American Contacts on the attached list to get their input on potential IMPACT of the project (APE) on cultural resources.. In some cases, the existence of a Native American cultural resources may be known only to a local tribe(s) or Native American individuals or elders.
- √ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f).
- In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
- Again, a culturally-affiliated Native American tribe may be the only source of information about a Sacred Site/Native American cultural resource.

- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

√ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.

* CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

√ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

<u>√ Lead agencies should consider avoidance, as defined in §15370 of the California Code of Regulations (CEQA Guidelines), when significant cultural resources are discovered during the course of project planning and implementation</u>

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

Cc: State Clearinghouse

From: Grace Lee [mailto:glee@santamonicabay.org]
Sent: Tuesday, February 03, 2009 5:20 PM
To: Sean P. Bergquist; Tripp, Michael
Cc: Shelley Luce; Unica Luna; Vivian Matuk
Subject: RE: Boat Central NOP/IS

Hi Michael,

My name is Grace Lee and I am the program coordinator for the Santa Monica Bay Restoration Foundation Boater Education Program. I have reviewed the NOP/IS for the Boat Central project. Please see below for my comments.

1. The fuel dock will significantly contribute to non-point source pollution in marina waters. Sources of pollution include overflow/backsplash from fueling boats (this spills out of air vents and/or from the fuel nozzle), potential spills from oil changes, and spills from other boat maintenance activities. Please consider these impacts in the EIR. Mitigation should include pollution prevention services such as a bilge pad exchange program, used oil/filter collection, HHW collection, and bilge pumpout.
2. The pedestrian promenade will increase litter in that area. You will need to provide a sufficient number of recycling bins, trash bins, and cigarette butt bins for people using the promenade.
3. There will be increased boat traffic in the area, especially at the launch ramp where boaters will be taking their boats out of the water and to the dry stack storage. This issue need to be considered in the EIR and mitigation should be included (i.e. recycling bins, trash bins, cigarette bins, fish line recycling, fish cleaning station).
4. The dry stack area should include lockers for boaters to properly store HHW like antifreeze, paints, oil filters, oil, solvents, etc.
5. The boater lounge would be an ideal location for a boating education kiosk where clean boating literature could be displayed.
6. The additional vessel sewage pumpout station is a great idea and is important in preventing improper disposal of sewage in the marina, but please consider that maintenance of the facility is equally as important.

Thank you for the opportunity to comment on your NOP/IS. Feel free to contact me if you have questions.

Best,
Grace

Santa Monica Bay Restoration Foundation
1 LMU Drive, North Hall
Pereira Annex MS:8160
Los Angeles, CA 90045

glee@santamonicabay.org
tel. 310.216.9828
fax. 928.223.9828
www.santamonicabay.org

Coastal
Conservancy

February 18, 2009

County of Los Angeles
Department of Regional Planning
320 Temple Street
Los Angeles, CA 90012
Attn: Michael Tripp

RE: Comments on Notice of Preparation for Boat Central

Dear Mr. Tripp:

The State Coastal Conservancy is working in partnership with the Department of Fish and Game, the State Lands Commission and the Santa Monica Bay Restoration Commission to develop a restoration plan for the Ballona Wetlands Ecological Reserve (BWER). As noted in your Notice of Preparation, the project site for the County's Boat Central project is immediately adjacent to the BWER.

I am writing to call your attention to an existing channel that flows under your proposed project site onto the BWER. This channel is currently the only unrestricted tidal connection to the wetlands and any potential impacts to this channel and the biota it supports need to be analyzed in your EIR. The initial study does not mention the existence of this channel or any potential changes to it envisioned by the project. Although it is not a "USGS Blue Line Stream", impacts to its water quality and biological resources should be addressed.

With regard to the long-term restoration plans for the BWER, the initial study states that the proposed project "will not impact or restrict conservation/restoration plans for the wetlands". However, if the project affects the existing tidal channel or the ability to widen that channel, it will impact the restoration options. Restoration alternatives will seek to enhance the function and habitat associated with this channel. Further, there may be impacts on water quality flowing into the BWER as a result of the proposed project even if the channel itself is not changed.

If you have any questions about these comments or would like additional information about the restoration project, please do not hesitate to contact me.

Sincerely,

Mary Small
South Coast Manager
State Coastal Conservancy

cc: Pam Griggs, State Lands Commission
Terri Stewart, Dept. Fish and Game
Shelley Luce, Santa Monica Bay Restoration Commission

1330 Broadway, 13th Floor
Oakland, California 94612-2512
510-286-1015 Fax: 510-286-0470

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www.alston.com

Edward J. Casey **Direct Dial: 213-576-1005** **E-mail: ed.casey@alston.com**

February 18, 2009

Via E-Mail & U.S. Mail

County of Los Angeles
Department of Regional Planning
320 West Temple Street, Room 1346
Los Angeles, CA 90012

Attn: Michael Tripp

Re: Boat Central Project, Project No.: R2008-20340

Dear Mr. Tripp:

This law firm represents Harbor Real Estate Group, LLC (Harbor) in connection with the proposed Boat Central Project. We have received a copy of the Initial Study and Notice of Preparation (IS/NOP). While we look forward to receiving more information about the Proposed Project and its environmental impacts as analyzed in the upcoming Draft Environmental Impact Report, we would like to bring to your attention at this time to an issue concerning the "Statement of Objectives" contained in the IS/NOP.

Harbor is concerned that those Project Objectives (set forth at page 12 of the IS/NOP) are structured in a way that may preclude a meaningful analysis of alternatives to the Project. As you know, crafting the Project Objectives in a way that fits only the Proposed Project and precludes analyses of feasible alternatives is strictly prohibited by federal and State law (see *Simmons v. U.S. Army Corp of Engineers* (7th Cir. 1997) 120 F.3d 664; *Preservation Action Council v. City of San Jose* (2006) 141 Cal.App.4th 1336).

Accordingly, we urge the County (since the County is a co-applicant on this Project) to adopt Project Objectives that will foster an analysis of alternatives to the Proposed Project that would reduce environmental impacts and create greater economic benefits. For example, we believe that one alternative that should be analyzed in detail in the Draft EIR involves the construction of a dry stack facility not built out over the harbor. By utilizing the most prevalent and cost-effective dry stack boat storage design in existence, the project will benefit from a lower cost of construction while avoiding the undesirable precedent of building out over the water. This structure can provide the same number of boat storage spaces by utilizing off-site parking or a reduced number with on-site parking. By reducing project height and massing out over the water, environmental impacts such as shade and shadow and wind disruption are also eliminated.

A second alternative that should be reviewed in the Draft EIR would utilize an off-site parcel, namely contiguous parcel 53. Such an alternative would take advantage of existing excess parking. This approach will provide for a larger number of boat storage spaces and provide for the construction of a more traditional and time tested design. By combining the parcels it would not be necessary to construct a building out over the water while providing a lower cost alternative for the boating community. In addition, as the height and massing are reduced, so are the related environmental impacts.

We look forward to working with the County on this important matter.

Very truly yours,

Edward J. Casey

EJC/ysr

LEGAL02/31160901v1

From: Johntommy Rosas [mailto:tattnlaw@gmail.com]
Sent: Wednesday, February 18, 2009 11:16 PM
To: Tripp, Michael; Dave Singleton
Subject: RE: NOP-MDR BOAT STORAGE BLDG-ETC- TATTN OBJECTIONS AND OPPOSITION TO ILLEGAL LA COUNTY PROCESS- AGAIN

RE: BOAT STORAGE NOP-SPECIFIC PLAN
property owner, the County of Los Angeles Department of Beaches and Harbors, are considered co-applicants for this
project. (Project Number: R2008-02340 Cases: RCDP200800007, RCUP200800191, RENV200800127, RPA200800012,
RPKP 200800010, RVAR200800015)

WE ARE AGAIN VERY DISTURBED BY LA COUNTY INCLUDING THE PLANNING DEPT. FAILURE-ILLEGAL FAILURES TO PERFORM SB 18 TRIBAL CONSULTATION AS REQUIRED.TATTN IS ON THE NAHC CONTACT LIST. SO WE ARE OFFENDED AT LA COUNTYS' FAILURE TO PERFORM THOSE REQUIRED TC.-AGAIN.

IT WAS ONLY BY A CONCERNED PERSON WE FOUND OUT ABOUT THIS AT THE DAY BEFORE THE END OF COMMENTS PERIOD ENDS.

TATTN HEREBY OBJECTS TO THIS LA COUNTY PROCESS ON THIS LA COUNTY PROJECT AND AS CO-SPONSOR OF THE PROJECT, AND THE PROPOSED PROJECT.

WE HAVE SUFFERED GREATLY FROM LA COUNTY FAILURES OF AND ON REQUIRED LEGAL PROCESS' AND PROCEDURES- DUE PROCESS,CEQA, SB18 ,HUMAN RIGHTS.THE COUNTY NEEDS TO CONTACT MR. DAVE SINGLETON OF THE NAHC OF THE GOVERNORS OFFICE, ASAP.

TATTN ALSO IS INVOLVED AND WORKING DIRECTLY WITH THE STATE TO RESTORE THE NOW CALLED BALLONA WETLANDS AND YOUR PROJECT INTERFERES WITH POSSIBLE CHANNEL AND TIDAL WATERS WE HAVE AS A CULTURAL RESOURCE FOR OUR SITES LOCATED ALL AROUND THE WETLANDS.

NO DISCUSSION OF THAT APPEARS OR ANY MAPS SHOWING PLANS TO OPEN CHANNEL RIGHT WHERE THIS PROPOSAL IS NOW POSITIONED.THE STATE BOUGHT THIS LAND TO RESTORE IT, FOR IT IS SOME OF THE LAST OF THE STATES WETLANDS REMAINING. DID YOU KNOW THAT, NO I THOUGHT SO. OBJECTION AGAIN.

YOUR NOP FAILS TO ADDRESS OUR EXISTENCE, SITES LOCATED ON OR NEXT TO THE PROPOSED PROJECT, THAT DELETION OF NO CULTURAL

RESOURCES OR IMPACTS IS OFFENSIVE TO US. I CANT BELIEVE YOU MARKED X'S ON ALL CULTURAL RESOURCES OR IMPACTS. AMAZING.

THE CHANNEL COUNTY INTENDS ON BLOCKING OR RESTRICTING ISNT EVEN ADDRESSED IN THE NOP.ONLY THAT IT WILL BE COVERED.

THE BOAT WASHDOWN WILL FURTHER POLLUTE ALREADY -IMPAIRED WATERS AND THIS HAS HAPPENED UNDER AND WHILE THE LA COUNTY HAS CONTROLLED IT AND CLAIMED OWNERSHIP WHICH WE DO NOT ACCEPT AS WE HAVE TITLE TO THOSE LANDS BY ABORIGINAL TITLE.REHNQUIST WAS WRONG ON SUMMA.

I AM IN DISCUSSIONS WITH EPA,FEMA ON THE ILLEGAL WATER QUALITY-IN THE AREA, THE MARINA IS A TOXIC WASTE DUMP,
ITS A LA COUNTY MARINA, ISNT IT? NICE STEWARDSHIP.

I AM ALSO A USCG CERTIFIED BUILDER OF DOCUMENTED VESSELS AND A FULLY DOCUMENTED USCG MERCHANT MARINER, THAT MARINA IS COMPLETELY OUT OF CONTROL, NEVER IN MY 30 PLUS YEARS AND OVER 50K SEA MILES ON THE WATER, FROM ALASKA TO HAWAII, MID-PACIFIC, HAVE I SEEN SUCH CONDITIONS, I GUESS MAYBE THE EXXON-VALDEZ WAS WORST, I WASNT THERE THEN.

THAT IS A GOOD PROJECT LA COUNTY CAN BEGIN WITH RESTORING THE IMPAIRED WATERS FROM ALL THE LEASES, FUNDS WASTED ON OTHER WORTHLESS PROJECTS . HOW ABOUT SPENDING THOSE FUNDS ON WATER QUALITY? ON ENFORCEMENT COMPLIANCE? ANYTHING FOR RESTORATION.

DID YOU KNOW THE THERE ARE HUNDREDS OF OUR SITES ALL AROUND/ON THE AREA AND IS A REGISTERED SACRED SITE, NO? THATS WHAT I THOUGHT.

AS FAR AS THE 80FT TALL BLDG.NO EXCAVATION OR DEPTH OF PILINGS OR FOOTINGS ARE SHOWN OR DISCUSSED. ANY EXCAVATION WILL BE A POSSIBLE SITE DISTURBING ACTIVITY AND AGAIN WE OBJECT TO THAT.

THE TRAFFIC IS ALREADY OVER BURDENED ON ALL ROADS AROUND THE PROPOSED PROJECT, DUE TO THE PLAYA VISTA FIASCO, ANOTHER CITY OF LA ILLEGAL PROJECT AND DESTROYED OVER 3000 TONGVA BURIALS AND UNCOVERED OVER 150,000 BURIAL ITEMS WITH GOVT BONDS SUPPLYING THE FUNDING.

SO ANY TRAFFIC INCREASES ARE UNACCEPTABLE. AGAIN I SEE NOTHING IN YOUR NOP ON THAT.ACCEPT SOME TOKEN COMMENT.

TATTN OBJECTS AND OPPOSES THIS PROJECT AND THE ILLEGAL CURRENT STATUS OF THIS CEQA PROCESS.

WE EXPECT THAT THE COUNTY WILL SUSPEND ALL HEARINGS AND ANY PROCESSING UNTIL WE ARE CONSULTED WITH AND THE PROPER CEQA ACTIONS ARE ENACTED. WE ARE NOT ASKING , WE ARE DEMANDING THAT.

IF WE ARE NOT SATISFIED WITH YOUR IMMEDIATE RESPONSE, WE WILL SEEK LITIGATION AGAINST ALL PARTIES RESPONSIBLE IN FEDERAL COURT.

/S/ JOHNTOMMY ROSAS

JOHN TOMMY ROSAS
TRIBAL ADMINISTRATOR
TRIBAL LITIGATOR
TONGVA ANCESTRAL TERRITORIAL TRIBAL NATION
OFFICIAL TATTN E-MAIL CONFIDENTIAL

From: slstw@aol.com [mailto:slstw@aol.com]
Sent: Fri 2/27/2009 8:41 PM
To: Tripp, Michael
Cc: Natoli, Gina; levzach@earthlink.net; slstw@aol.com
Subject: Boat Storage

Hello Michael.

I am sorry for this late e-mail regarding the boat storage development due today.

My first suggestion is to insure that after community meetings are held, to insure that residents and other interested parties have more than 1 day to respond to you with comments. Being unable to attend the 2/19/1009 meeting, coupled with understanding that the article reviewing the meeting did not come out until the 2/26/2009 edition of the Argonaut due to the Argonaut's deadlines, only left today to respond to you with your deadline.

Also, it appears that either the parcels on the Redevelopment Status map provided by Beaches and Harbors are not labeled correctly, or they are stated incorrectly in the article.

I do not know if a to scale drawing of the proposed project was supplied at the meeting, but this would be helpful as well. I would think that the developer must have this or would certainly provide for this to be available to the community.

Thanks.

Best regards,
Susan

From: Martimarina@aol.com [mailto:Martimarina@aol.com]
Sent: Friday, February 27, 2009 9:56 PM
To: mtripp@planning.lacounty.govl
Cc: Martimarina@aol.com
Subject: Public comment - MDR Boat Storage

Michael Tripp,

I would like to express my concern regarding the boat storage facility that is currently going into review of public comments for the draft EIR.

As a resident of Marina Del Rey the biggest issue for us continues to be the lack of a "master plan" for the vision of the marina, leaving us with the impression of "who's driving the bus".

Additionally, too much is happening through the "developers" on numerous parcels in the area that are showing a lack of concern to the potential impact of traffic which is already "out of control", our water views that are quickly disappearing in the marina, and taking more pedestrian walkways away rather than increasing them for the better and enjoyment of many.

It is important to separately state the residents or visitors to Marina Del Rey are not wanting to have boat storage facility that is huge like an airport hanger, what is everyone thinking? Please remember that this is a "marina", not a "port". If there is such a need for a boat storage of this size and taking more of the water frontage, then the storage area should move to Wilmington, San Pedro, Long Beach or Los Angeles "ports".
Agree that the dry storage should be centralized, but not at the recommended specifications that have been expressed.

Lastly, there needs to be further clarification and understanding of the boat storage area that is proposing a "sheriff's Boatwright office in a two-story building". Is the plan to have two sheriff locations?

Thank you in advance for including the public comments and your responses to the outcome of the draft EIR.

Marti Meyers
Marina Del Rey resident

From: Gerald Sobel [mailto:sobelsolar@msn.com]
Sent: Fri 2/27/2009 10:46 PM
To: Tripp, Michael
Subject: Dry Stack Proposal? Phooey!

Regarding your invitation for Public Comment on the Dry Stack Building proposal which expires today, as noted on page 4 of this week's Argonuat

The Dry stack is an insult to Marina del Rey, and shame on you for even considering it. The Marina is already illegally developed as you well know. It was supposed to be 8500 slips around a huge lagoon with two jetties to the sea for tidal flushing, not the Micky Mouse yacht harbor we have today, witch is being further destroyed by more high rise over development which has ruined it for recreational boating, supposedly THE REASON FOR WHCICH MDR EXISTS. You illegally used the Ballona Creek Outfall, and left us with polluted water.

Check it out, the 1954 Congressional act that was used to authorize building MDR, that looks nothing like the County/Developer swindle we now see. It expressly forbid commercial development of this public park for private profit.

Hey, man, what is the big idea? You're just a puppet for big developers, and you are doing this, with just a few days notice in the Argonaut just to make what you are doing, ruining a Federal Park, look legal. You don't give a darn about public input and you know it.
I doubt you're even going to read these comments since they are irrelevant to your true motives.

I hope under Obama all of you get investigated for corruption and spend some serious time in a Federal Pen...I mean Mr. Ring, Mr. Knabe, and the rest of your gang. But I'm not holding my breath.

Gerald Sobel

LAMARINER.COM

February 27, 2009

Mr. Michael Tripp
Department of Regional Planning
320 Temple Street
Los Angeles, CA 90012

Re: Boat Central #R2008-02340

Dear Mr. Tripp,

Thank you for extending the deadline to comment on the Notice of Preparation for the Boat Central Project. The boaters in Marina del Rey are very concerned about the impacts of this project on their recreational opportunities. Over the last several years, we have seen a complete change of focus in Marina del Rey from recreational uses (the top priority as written in the certified MDR Local Coastal Program) to the drastic expansion of commercial development. This project is a prime example of how developers/LA County are continuing their efforts to turn our public harbor into a playground for the wealthy.

The slip mix in Marina del Rey has changed drastically over the last decade. During that time, we have lost nearly 2000 wet slips, most of which were in the "affordable"category. Boat Central LLC had projected 345 slips in the 20'-35' range in plans submitted in December 2008. The plans have changed over the last few months to include slips above the 35' range. While the Coastal Commission has identified boats 35' or less as "affordable", the rates that the facility would need to charge would far exceed the "affordable" range and would certainly not cater to the general public that this harbor was intended to serve.

This project does not take into consideration the 60-65% of sailboats currently in the harbor. This storage facility severely impacts much needed land space to assist in alternative boat-storage needs. Boat Central only provides 30 mast-up storage spaces for the sailboats. That is over a 10:1 ratio of power boats to sailboats. The impetus that this project would create would be analogous to widening parking spaces to accommodate wider SUV's like Hummers. The governing agencies should not encourage this behavior. All of the boats that would be housed inside of this facility could be trailored and transported, while sailboats over 25' do not have that ability.

Building 97' over the water is not only against the Coastal Act, it serves to completely discourage recreational boating in the harbor. This facility would certainly disrupt our State's publicly-funded launch-ramp and hinder access for our citizens. As our population and boating needs continue to grow, our currently sufficient launch ramp may need to be expanded. Boat Central would hinder that growth and provide another problem of access in our Marina. The County has stated that it is continually working with engineers to increase the amount of wet slips and boating opportunities in our harbor. This project undermines that ability.

While I am certain that the revenues are the ultimate goal of the developers and Los Angeles County, this project does not meet the needs of the current 61,000 boating citizens that the harbor was intended for. Further studies with a publicly agreed-upon analysis would be a better direction for Los Angeles County over further inappropriate proposed projects.

Sincerely yours,

Jon Nahhas

LA MARINER

PO Box 11131
Marina del Rey,
CA
90293

PHONE (310) 306-4682
FAX (306) 306-4682
E-MAIL lamariner@gmail.com
WEB SITE http://www.lamariner.co
m

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: SM-1

March 3, 2009

TO: Jon Sanabria
Department of Regional Planning

Attention Michael Tripp

FROM: Manuel del Real MDR
Sewer Maintenance Division

REVIEW OF ENVIRONMENTAL DOCUMENTS
NOTICE OF PREPARATION FOR ENVIRONMENTAL IMPACT REPORT
BOAT CENTRAL - UNINCORPORATED MARINA DEL REY

As requested, we have reviewed the Notice of Preparation for the aforementioned project and offer the following comments.

The Environmental Impact Report should discuss the collection and disposal of the additional wastewater that would be generated by the proposed project, especially its impact on the available capacity of the existing local sewer lines for both peak dry- and wet-weather flows pursuant with the Statewide general waste discharge requirements.

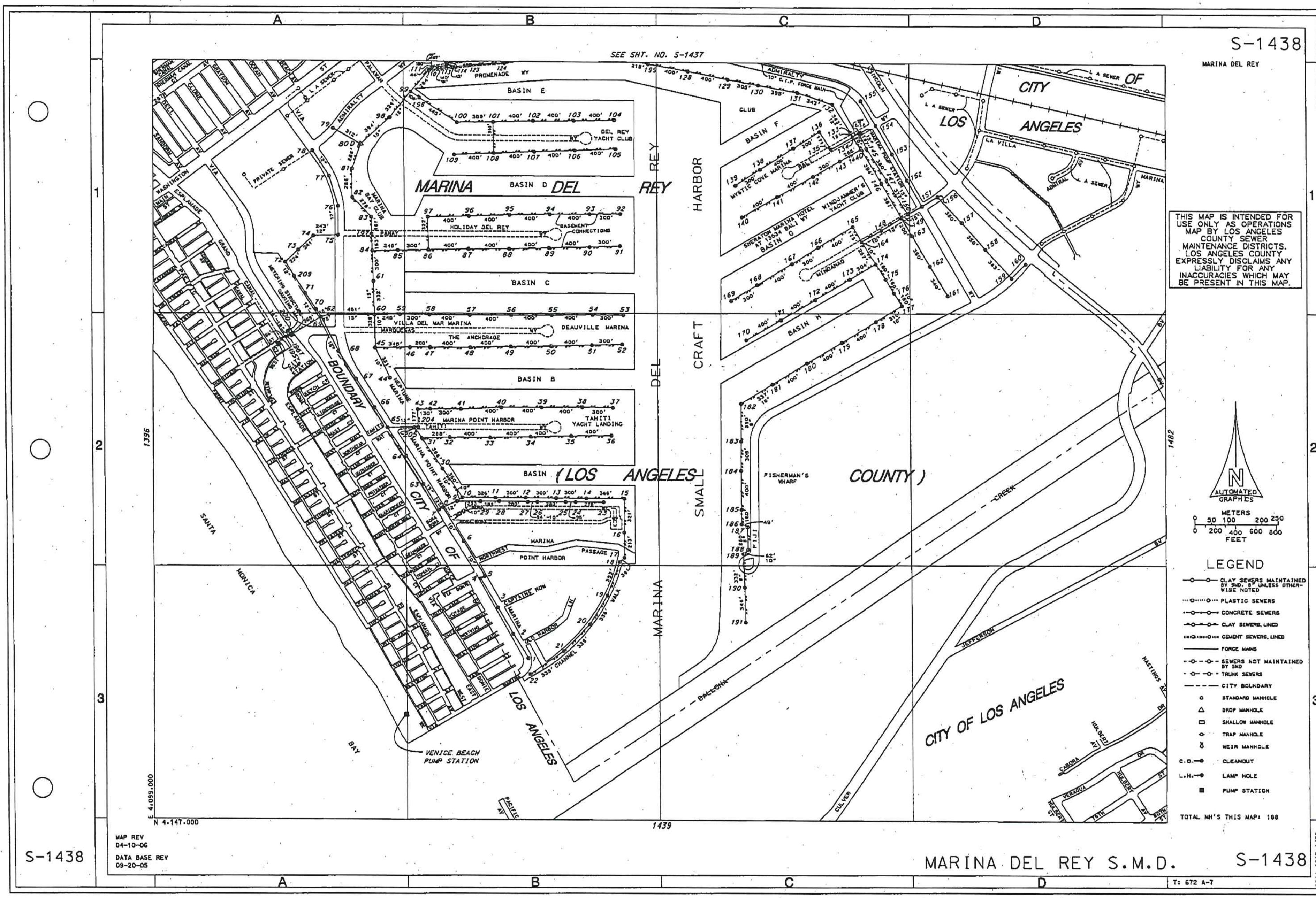
The County of Los Angeles Department of Public Works Marina Sewer Maintenance District is responsible for the operation and maintenance of the local sewers within the unincorporated Marina del Rey. Attached is the Sewer Maintenance Division Map No. 1438 regarding current sewer pipeline locations. Based on the recent Marina Sewer Improvement Study conducted by our Design Division, the existing sewer should be able to accommodate the proposed project.

If you have any questions, please contact May Hong at (626) 300-3388 or at mahong@dpw.lacounty.gov.

MH:kk
1643

Attach.

MAR - 5 2009


S-1438
MARINA DEL REY
SEE SHT. NO. S-1437
THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.
AUTOMATED GRAPHICS
METERS 50 100 200 250
200 400 600 800 FEET
LEGEND
CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
PLASTIC SEWERS
CONCRETE SEWERS
CLAY SEWERS, LINED
CEMENT SEWERS, LINED
FORCE MAINS
SEWERS NOT MAINTAINED BY SMD
TRUNK SEWERS
CITY BOUNDARY
STANDARD MANHOLE
DROP MANHOLE
SHALLOW MANHOLE
TRAP MANHOLE
WEIR MANHOLE
C.O. CLEANOUT
L.H. LAMP HOLE
PUMP STATION
TOTAL MH'S THIS MAP: 188
MARINA DEL REY
BASIN E
BASIN D
BASIN C
BASIN B
BASIN F
BASIN G
BASIN H
HARBOR
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(LOS ANGELES COUNTY)
CITY OF LOS ANGELES
CITY OF LOS ANGELES
CITY BOUNDARY OF LOS ANGELES
DEL REY YACHT CLUB
HOLIDAY DEL REY
BASEMENT CONNECTIONS
VILLA DEL MAR MARINA
DEAUVILLE MARINA
THE ANCHORAGE
MARINA POINT HARBOR
TAHITI YACHT LANDING
MYSTIC COVE MARINA
SHERATON MARINA HOTEL
WINDJAMMER'S YACHT CLUB
FISHERMAN'S WHARF
MARINA BAY CLUB
NEPTUNE MARINA
MARINA PUMP STATION
10" C.I.P. FORCE MAIN
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VENICE BEACH PUMP STATION
SANTA MONICA BAY
BALLONA CREEK
ADMIRALTY
LINCOLN
PROMENADE WY
PALAWAN
WASHINGTON
VIA
ESPLANADE
GRAND
CANAL
LA VILLA
ADMIRAL AV
MARINA AV
CULVER
JEFFERSON
HASTINGS
HULBERT
CABORA
VERACRUZ
PACIFIC AV
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MAP REV 04-10-06
DATA BASE REV 09-20-05
MARINA DEL REY S.M.D.
T: 672 A-7
0811.0913.1438

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

(323) 890-4330

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

RECEIVED
MAY 20 2009

April 24, 2009

Mr. Michael Tripp
Department of Regional Planning
320 Temple Street
Los Angeles, CA 90012

Dear Mr. Tripp:

NOTICE OF PREPARATION, PROJECT TITLE: BOAT CENTRAL, THE PROJECT SITE IS LOCATED AT 13483 FIJI WAY, MARINA DEL REY, (FFER #200900023)

The Notice of Preparation has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. The Initial Study overestimated the distance from the nearest Fire Station to the project site. Fire Station 110 is approximately 1 mile from the project site. We have no additional comments.

LAND DEVELOPMENT UNIT:

1. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water main, fire flows and fire hydrants. Fire Department requirements will be addressed at the building permit stage. Conditions will be set at that time once plans have been submitted for review.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation,

fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Draft Environmental Impact Report.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. We have no comments at this time.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

Frank Vidl

FRANK VIDALES, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

FV:lj

Tripp, Michael

From: Chris Corey [notatwork@pacbell.net]
Sent: Wednesday, February 25, 2009 8:36 PM
To: Tripp, Michael
Subject: Comment on Pacific Marina Development -- "Boat Central"

Dear Mr. Tripp:

I am writing in regard to the Boat Central project that was recently described in the *Daily Breeze*. My comments regard the beneficence of the proposed facility, an expansion of the concierge service, and objections to the facility reported in the *Daily Breeze*.

The County and Pacific Marina Development should be commended for the innovative business described as the Boat Central project. The County and marina lessees appear determined to reduce the number of smaller boat slips in Marina Del Rey. While I regret that development, the effort to creatively supplement the number of small slips is laudable. In going forward I ask the County to keep in mind that the stacking of boats and the reduced access to ones boat actually represents a diminution of service to the boat owner. The service represents less access and more restrictions to the boat owner. As such, it is a method of storage that should be priced at or below the fee that a boat owner would pay for a traditional slip. If one assumes that the average boat would be 30 feet in length, then the facility will be storing 10,350 linear feet of boats. If owners are charged $13 a foot per month (or the mix of storage and concierge fees is roughly equal to this amount) then the facility can be expected to gross $134,550, a month. If Pacific Marina Development can meet their financial obligations and profit at a level that will allow for continued investment in the property I would favor the development. However, if fees must be much higher to be fiscally responsible, then the increased fees and decrease in service represents no benefit to the boating community of Marina Del Rey.

If the Boat Central proposal goes forward, I would urge the County to expand the concierge aspect of the business to the mast-up storage facility currently provided by the County. One of the barriers to using trailerable sailboats is not the availability of storage, but the type of vehicle required to tow the boat. Personally, I cannot find an economic automobile that has a towing capacity much over 1,500 lbs. Those of us considering a trailerable sailboat are also the sort of people looking to save money on our non-recreational transportation. If a concierge service for the mast-up storage was made available (a yard engine operated by Boat Central) the County would, I think, find greater demand for mast-up storage. As I perceive the need to offset the loss of small slips for sailboaters in Marina Del Rey this would be a very desirable outcome assuming that the County can allocate more space to mast-up storage.

I am not sympathetic to the objections to the project expressed in the *Daily Breeze* article regarding the visual presentation of the facility. There is every reason to believe that this facility could be an enhancement to the property. However, the County should imagine the environmental impact of the project broadly. The amount of boat traffic that could result in H Basin and earthquake safety concern me. I trust that these are fundamentally challenges of coordination and planning that the County and Pacific Marina Development will address.

Thank you for the opportunity to comment upon this innovative project.

Sincerely,

Christopher R. Corey

Tripp, Michael

From: Nancyvmarino@aol.com
Sent: Friday, February 27, 2009 12:28 PM
To: Tripp, Michael
Cc: info@wearemdr; davidb@wearemdr.com
Subject: Boat Central NOP
Attachments: WAM_BoatCentral_NOP_2009feb27.doc

Re: Project Number: R2008-02340

Hi, Michael,

Can you still get the attached letter into the public record on the Boat Central NOP? Please advise.

Have a great weekend,

Nancy

We ARE Marina del Rey P.O. Box 9096, Marina del Rey, CA 90295

February 27, 2009

Mr. Michael Tripp
Department of Regional Planning
320 Temple Street
Los Angeles, CA 90012

Re: Project Title: Boat Central
Project Number: R2008-02340
Opposed

Dear Mr. Tripp,

The proposed project for Parcels 52/GG raises a number of concerns that are beyond the purview of the "Boat Central" Notice of Preparation for an Environmental Impact Report. We ARE Marina del Rey holds that these broader issues must be resolved prior to consideration of any individual parcel redevelopment in Marina del Rey. Specifically, these issues are: the lack of an EIR for the comprehensive Marina del Rey redevelopment project (Marina Project), by rendering inoperative the certified Marina del Rey Local Coastal Program (LCP) that governs redevelopment; the failure to inform the public of the full scope of the Marina Project; and the consequent suppression of the public's right to full participation in planning decisions including (but not limited to) the decisions to alter the overall land use configuration of the Marina Project, to change the land use designations for these two parcels and to allow a building to extend out over the water. Furthermore, the "Boat Central" project has several critical design flaws that may result in long term detrimental consequences to the County, to local communities, and to boaters and other recreational users.

Lack of an operative LCP: The unincorporated Marina del Rey is owned by, and under the jurisdiction of, a single entity, the County of Los Angeles (the County). We ARE Marina del Rey believes that the County is piecemealing the redevelopment in violation of state law, including the California Coastal Act (Coastal Act) and the California Environmental Quality Act (CEQA). The County has admitted on the record and it is widely known that it intends to redevelop Marina del Rey. This constitutes "a project" under CEQA. According to Public Resources Code §21065, a project is defined as the whole of an action, which has a potential for resulting in a direct physical change in the environment. thus requiring a comprehensive EIR. While the county is *almost* correct in its correct in its assertion that our LCP is the functional equivalent of an EIR, it is the Coastal Commission's certification process that provides the environmental review necessary to meet CEQA requirements for an EIR, which gives the LCP this status.

The Coastal Commission determined in January 2008 that the county is not effectively implementing the LCP in compliance with the Coastal Act, and recommended that the county prepare a comprehensive LCP Revision, with a comprehensive study covering all proposed or anticipated developments and ESHA habitats, and addressing the cumulative environmental impacts on the Marina and on surrounding communities, in order to bring it into compliance.

Lack of compliance with the certified LCP on at least seven (7) of the currently proposed projects, including this one, renders the LCP moot. Therefore, recertification is needed before the county can legitimately reclaim EIR equivalence for the Marina Project and satisfy the anti-piecemealing provisions of CEQA.

Failure of county to inform the public: The County has steadfastly refused to present its comprehensive plan for the Marina Project redevelopment to the public, and continues to pursue individual parcel projects piecemeal, as it is doing with this "Boat Central" proposal. As a result, most of the local community has only limited awareness of the full scope of the Marina Project, and members of the boating community and other recreational users who live elsewhere remain even less informed. The task of discovery is arduous, and participation becomes prohibitive due to the number of venues and phases involved in this piecemeal approach.

Lack of information about context translates to uninformed assessments of a project's proper place in the overall Marina Project. In response to We ARE Marina del Rey's efforts to educate the community about the overall Marina Project--as much of it as we have been able to discern—public demand is growing for the County to reveal its vision, and subject it to a community-based review to adapt that plan to the needs of the community, both local and regional.

Suppression of the public's right right to full participation in planning decisions:

> **Coastal Act §30006: Legislative findings and declarations; public participation**
> The Legislature further finds and declares that the public has a right to fully participate in decisions affecting coastal planning, conservation and development; that achievement of sound coastal conservation and development is dependent upon public understanding and support; and that the continuing planning and implementation of programs for coastal conservation and development should include the widest opportunity for public participation.

We would like to emphasize that this Coastal Act section does not confer a privilege on the people of California; rather, it affirms our constitutional right to a meaningful role in coastal planning—not merely an opportunity to comment on, or request mitigation for, a predetermined component of that project.

Disregarding this right, the Department of Beaches & Harbors renegotiates lease extensions with existing lessees in secret; its RFP's for new projects on various public parking lots received scant public notice and, again, were done in piecemeal fashion. It became apparent only in the last couple of years that the County intends to destroy at least five of our twelve major public parking lots for private residential and hotel developments, and assign two additional lots to private developers to satisfy their projects' open space and/or view corridor requirements (one reverting to County possession at about the same time that major refurbishment will be needed). Public displacement from all areas of the Marina except the Chace Park/public launch ramp area was revealed in the Coastal Commission's Periodic LCP Review—a hard-won review that the county manipulated (also in secret) while continuing to pursue projects without pause.

Other County departments, as well as the Board of Supervisors, actively discourage public participation: names and addresses of projects are obscured or mis-stated in notices; notices are placed in obscure, locally unavailable publications; serious inquiries and challenges are routinely met with evasive, irrelevant or incomplete replies that leave substantial issues untreated and the public disappointed and frustrated; errors are promulgated or tolerated even after they are exposed; often, public concerns are simply dismissed without justification.

The County needs to address the injustice of excluding meaningful public participation in land use decisions before it proceeds with any project in Marina del Rey—but especially with projects like "Boat Central" that violate several major provisions of our LCP. It upsets the balance of land uses under the existing LCP. We ARE Marina del Rey asserts that we are entitled to the protection of our laws, and demand that our public officials provide that protection until and unless they have changed those laws through a transparent, community based process.

We ARE Marina del Rey P.O. Box 9096, Marina del Rey, CA 90295

Project concerns: The "Boat Central" project as conceived will have a detrimental effect on boating, in particular small boaters, due to the proposed conversion of Mothers Beach into a hotel/commercial zone and the County's intent to concentrate public use in the area of Basin H. Entry level boating will bottleneck on the on Basin H, further crowded into the easternmost end near the boat ramp by the elimination of dry storage further up the basin at Dock 77.

With this consolidation of dry storage facilities, and a maximum Boat Central load/unload capacity of eleven boats per hour, many of the smaller boat owners are likely to encounter limited or no access to their boats on popular weekends and holidays.

Additional dry storage for boats is desirable for Marina del Rey, but only if it is truly added capacity, and not at the expense of small wet slips or other dry storage facilities. The former director of Beaches & Harbors' gave testimony before the Board of Supervisors that contradicted his written staff report on this issue. It is clear from existing and proposed redevelopment projects, however, that small wet slips are being decimated throughout the Marina. This concentration of a less desirable alternative will clearly discourage small boat users from using Marina del Rey.

With most other public use in the same area, the landside traffic will be horrendous in peak recreational periods, backing up into the adjoining Del Rey community, compounding all of the traffic and air quality impacts of other area projects both within and adjacent to Marina del Rey. The Beaches & Harbors Administration building, with its 4-day work week, was clearly a good fit to accommodate additional visitor parking on weekends and holidays. This concentration of parking needs will likely result in a parking structure to accommodate the concentration of visitors, which would further destroy views to and from the water and diminish the Marina experience for all visitors. Privatizing Parcels 52/GG for a competing use is poor planning even in isolation from the rest of the Marina Project.

We ARE Marina del Rey is categorically opposed to any building built out over the water. The carbon footprint of shipping recycled plastic 6,000 nautical miles is an affront to the very idea of "green" building. We have plenty of recyclable trash in this county; we do not need to import any.

We ARE Marina del Rey supports the Ballona Institute, Wetland Action Network and other environmental organizations objections to the placement of this facility as detrimental to the Ballona Wetlands, indicating a relocation to avoid impacts to habitat and wildlife in the vicinity.

Marina del Rey is supposed to be all about boating and recreation. Why, then, is the County's Marina Project focused only on maximizing revenues, at the expense of boating opportunities for the majority of County citizens? Additional dry storage, dispersed throughout the Marina near existing public parking lots is a more desirable solution that will lead to greater recreational boating opportunities, better public access, and a more robust economy in the local and regional community.

Together,
We ARE Marina del Rey,

Nancy Vernon Marino
Director

Appendix C –
Scoping Meeting Transcript

BOAT CENTRAL

ENVIRONMENTAL IMPACT REPORT

PUBLIC SCOPING MEETING

February 19, 2009

CONDENSED TRANSCRIPT AND KEYWORD INDEX

BARKLEY
Court Reporters

(212) 808-8500 New York
(702) 366-0500 Las Vegas
(310) 207-8000 Los Angeles
(915) 922-5777 Sacramento
(858) 455-5444 San Diego
(949) 955-0400 Irvine
(408) 885-0550 San Jose
(951) 686-0606 Riverside
(415) 433-5777 San Francisco
(760) 322-2240 Palm Springs
(818) 702-0202 Woodland Hills

IN THE STATE OF CALIFORNIA
LOS ANGELES COUNTY

BOAT CENTRAL
ENVIRONMENTAL IMPACT REPORT
PUBLIC SCOPING MEETING

HELD AT
MARINA DEL REY HOTEL
13534 BALI WAY
MARINA DEL REY

FEBRUARY 19, 2009
7:00 P.M.

(The public scoping meeting commenced at 7:00 p.m.)

MR. ZOLA: We are ready, the time being officially 7:00. First, I'd like to welcome everybody here tonight. This is a scoping session for the Boat Central Environmental Impact Report. And I'll describe the basic process for tonight is -- I'll describe first what a scoping session is, what are the rules that we're dealing with.

And then what we'll do, we'll actually walk through the environmental report section by section by section and we'll talk about what needs to be in the analysis of that Environmental Impact Report.

I'm not very good at staying real still, you're going to have a little bit of a workout.

AUDIENCE: That's okay (woman with a video camera).

MR. ZOLA: There's a few handouts to make sure that you got them. One is an agenda, and on the back of the agenda is a little place for written comments. And if you have more comments that can fit in that space, as many comments as you want to give in writing, those comments will be accepted up to a week from Friday, February 27th. And you just mail them in. There is a place to mail them, a place to e-mail comments also on the back of the

form. There is also a small fact sheet on the project that gives information on the background that we're going to be talking about tonight.

There is an official study document which is a larger document at the table which was the work done by the County to do, and I'll talk about what that is, is an initial review of the project. And these are the handouts we have.

The purpose of a scoping session, and what we're going to be doing tonight, is a process that is described in state law, in that portion of state law, called the California Environmental Quality Act. One of the terms I will use is CEQA which is a law that we're dealing with.

The purpose of tonight's meeting and the purpose of a scoping session is to take comments from the public as to what should the contents of that Environmental Impact Report be, the next term I will use is EIR. What are the analysis that need to be undertaken so that the public and County decision-makers have an understanding of the project before any action is taken.

So the purpose of tonight, again, is to define what ought to be in the Environmental Impact Report. What is not the purpose of tonight's

meeting is a public hearing as to whether the project should or should not be approved, whether what action the Regional Planning Commission should take, what action the Board of Supervisors should take and what recommendations even County staff should make.

We are here to talk about the content of that Environmental Impact Report. And this is really just the first of a number of opportunities to discuss the environmental evaluation of the project and the project itself. So tonight we'll talk about the content of that Environmental Impact Report. Then about the fall of this year a draft, what is called a draft Environmental Impact Report will be distributed for public review.

And so if you have on the back of that agenda form, given your name and address, you'll get notice of the availability of that Environmental Impact Report. There will, starting in the fall of this year, be a 45-day period to accept written comments on that draft Environmental Impact Report. So the next set of review, an opportunity you will have to comment on the project, is at that 45-day review to discuss the accuracy and depth of analysis.

So tonight we'll talk about what ought to be in it during that 45-day review. You'll get to talk about is that really a complete document, is it accurate. At the end of the 45-day public review period, any written comments that are received by the County will then -- a response will be prepared. So a written response will be prepared to all of the written comments received during that 45-day review period.

That will be put together with the draft Environmental Impact Report and then there will be what is called a final EIR. Late this year, at the end of this year, maybe into the beginning of the next year, the project and that final EIR will be in front of the Regional Planning Commission for a public hearing. So that is a period of time for comments again on the EIR, but more importantly, comments on the project. Do you as the public favor it, not favor it and so on. Sometime after the planning commission is done with hearings, then there will be Board of Supervisor's hearing.

So the review process I talked a little bit about. The very first thing that has happened is Los Angeles County has received applications for three parcels: 52-R, GG and 49M within Marina del

Rey. The applications that the County has received include a specific planned amendment to change designation on two parcels, 52-R and GG from public facilities to boat storage with a water front overlay and from parking to public facilities on parcel 49M.

There is also an application to amend the local coastal program to add dry stack storage to the permitted uses in the water land use category and to allow buildings over the water portion of parcels at the same height as buildings and structures on the land side.

There is also a Coastal Development Permit that has been requested to actually allow demolition of the existing buildings on the site and construction of the project, a conditional use permit to authorize the uses, a parking permit requesting a reduction in required parking and also to permit the use of valet parking.

And the last application is a variance that would allow construction of a dry stack storage facility in the required setback areas and it will increase the maximum allowable height. That is the set of applications that the County has received. Now under the California Environmental Quality Act,

when the County receives applications for what are called discretionary action.

In other words, the County, all that series of applications, the County has the discretion to approve or not approve. It's very different than a building report where if you meet the requirements you must approve, but the County has the ability and the discretion to approve or not approve. What the law says, CEQA says, is when those applications are received, the County must review the potential for significant environmental impact. And the County did that review and the review is included one of those handouts, the initial study.

The County's conclusion was that this project, those applications, could result in significant impact on the environment. And because of that, an Environmental Impact Report is required. And so based on the County's determination, the next thing the County is required to do is send out what is called a Notice of Preparation.

And what that Notice of Preparation is, it is a notice to public agencies and to the public that an environmental impact report is being prepared and inviting comments on the content of that EIR, and that was issued for 30-day review on

January 21st of this year.

As I said, even if you count 30 days from the 21st, it would come out to tomorrow, written comments will be accepted on the Notice of Preparation, NOP, through Friday of next week, the 27th of February.

Now I mentioned a couple of times that an Environmental Impact Report is being prepared. The purpose of that EIR is to serve as a public information document that will assist you as the public and County decision-makers to understand the consequences on the environment of all those applications that I said were filed and proposed of the County.

The second part of that Environmental Impact Report, the purpose of that, is to provide for, once we've identified these, are the environmental consequences, then the next part is to talk about what are the feasible mitigation measures, what can we do to minimize or avoid the impact on the environment that were identified. And then also to evaluate what alternatives to the project are there, lower height, different configuration, different site plans, so on, that might reduce the impact identified in that

Environmental Impact Report.

Only after all of that is done, the draft EIR, the public review, the analysis of that document, comments from the public, only after that final EIR is actually done, can the County take any action on the project.

Now what that Environmental Impact Report will cover and there is the contents. One, an introduction, pretty straight forward, identify what are the rules under which the Environmental Impact Report is being prepared. An executive summary summarizing what is in the rest of the document. A project description so that anybody reading the document can get an understanding of what it is that was proposed that would have environmental impact.

A description of the existing environmental setting, what is the baseline, what do we have today. And I think the baseline is actually, will be this month, so that during the public review period of the NOP as the baseline, when the project is built, what changes. So the existing conditions, what are the impact measured against.

The impact analysis, and we'll talk about what those impacts might be, project alternatives. Cumulative impacts. One of the rules under CEQA is

that the EIR must analyze not only the impact of the project itself, but the impact of the project when combined with past projects, things that have happened in the past, things that aren't yet built, but it may have been approved.

And reasonably foreseeable future actions and future projects, so that a project is analyzed not only by itself in relation to existing conditions, but in relation to what do we reasonably expect and what can we reasonably foresee occurring in the future.

And then, finally growth inducing impact. If this project is built, what kind of other project may follow, what is the growth that this project might induce. So with that, we'll talk about the project description.

I know I launched into this, did I give my name in the beginning?

THE AUDIENCE: No.

MR. ZOLA: I realize that. My name is Lloyd Zola. I'm with HDR Engineering. As I mentioned in the beginning, the County is holding this public scoping session and one of the things that the County requested is that a third-party actually hold the meeting. And that is what I'm

here for. My job is to walk you through the public scoping session, and that is sum total of my involvement in this project.

Project description: This is described in the initial study that you have and it also will be described in that EIR that will be prepared, but there will be a dry stack boat storage structure storing 345 boats, the footage ranging from 20 to 35 feet up to about 40 feet long boats. And also storing 28 boat trailers, a small indoor boat repair facility.

There will be architectural planning, translucent polycarbonate, you can see there is a model back there, is an approximation or some similar material, but it will not be essentially open storage. The structure will be approximately 70 feet in height that actually stores the boats. That structure will overhang Basin H by about 45 feet on the eastern side. I'm not sure what direction I'm pointed, 97 feet on the western part. There will be an overhang over the water.

In the center there will be, between the structure, will be a Gantry crane, and those of you that were here early, saw what that crane was coming down the middle. And the idea of the crane is to

transfer boats from the storage into the water and the crane will actually run the length of that structure and will have a cover on it.

The Gantry down the center, approximately 75 to 82 feet. On the back of that fact sheet is actually a cross section of what this looks like. There will be dock structures extending out from the boat pad 200 feet into the basin on the west side, 147 feet on the east side. And that will be used to convey people to and from their boats and also allows for queuing of about 64 boats to and from as they're being stacked or as they're coming back out.

There will be some mast-up sale boat storage for about 30 spaces, basically ten by 30 feet long for sailboats. There will be a fixed hoist on the land side to convey boats to the water, wash-down facility at that same location. An officer -- an office and customer lounge, about 2,300 square feet, with restaurants, personal lockers, reception facility, so on.

Offices, a 2,800 square foot sheriff's boat ride, lifeguard shop, sheriff's office, and a fenced boat ride yard. There will be a public promenade provided as part of this -- we will show a site plan in a second -- but a 200-foot long public promenade, park and picnic area and signage for the public.

The location is shown in red. There is Fiji Way and just off of Lincoln, so that is the location that's also shown in the initial study that you have.

A couple pictures of the site. One, a view from the north, to the north from the southwest corner. That's the one on top. On the bottom of you from the west to the eastern edge looking across the site as it exists today. On top of you, south through the parking lot, towards the entrance on Fiji Way, the Ballona Wetlands are actually to the south across Fiji Way are the Ballona Wetlands, an ecological reserve. On the bottom you would see the view west along Fiji Way and the Ballona Wetlands Ecological Reserve to the south, essentially to the left of the road.

Here we have a view to the north edge of the parking lot looking across the channel towards the public boat launch area which is on Admiralty Way. The sheriff's boat ride and docks are actually to the east on the right of the picture. The one at the bottom is a view from the northern edge of the parking lot looking northwest across Basin H.

And then the site plan, that is also in the

initial study and that copy we have for you. When you see here, when you look at the site plan in the initial study, the location of the promenade, the building, the storage and structures and so on.

The next is on top, the east elevation, showing the structure from that side with boat storage in the foreground. You'll see the structure extending out over the water. At the bottom is a north elevation looking from the water into the structure.

So that is the project being proposed. Now what we're going to do is actually walk through section by section of the Environmental Impact Report. What I'll do is first give you a summary of all the various issues very generally that would be in the Environmental Impact Report and then we'll actually walk through section by section.

So for example, on aesthetics which is the first issue, I will describe this is what is intended to be, what is being done for that Environmental Impact Report. Then what I'll look for from the audience and raise your hand, I will ask a question on each of these, what else needs to be in these documents in that section of the document. Then when we get to the end, I'll also

ask is there anything else that was missed.

My hope in doing it this way, rather than doing the typical, we go once around the room and you give a three-minute speech, is we make sure we've hit every subject in the Environmental Impact Report, that we don't leave any section out. And then at the end if there is anything that we've missed through that, then you'll have the three minutes to make sure that we've gotten all of these.

So the basic subject in the Environmental Impact Report, that analysis and environmental analysis, will be done as shown here. Aesthetics, air quality, biological resources, including both marine and bird assessments, geology and soils, hydrology and water quality, land use and planning, noise, traffic and transportation, and then utilities and public service systems.

So those are the basic subjects that the environmental analysis will be done for. Now we'll go to this, just so you understand, for each of those sections, there will be this done. One is a description of the existing setting. So for each of those issues what is the existing setting in terms of aesthetics, air quality, so on. Threshold of significance, how do we go about determining whether

there is a significant impact or less than significant impact. So the rules by which that determination will be made is, is it significant, is it not, a line will actually be described in the document.

Then there will be a description analysis of the impacts of the project before mitigation is applied, identification of what mitigation measures are proposed to be applied, and then an evaluation of how effective will that mitigation be. In other words, when the mitigation is applied will impacts be significant still or will those mitigation measures be effective to really eliminate the significant impact and yield either no impact or less than significant impact.

And finally what will happen in each section, will be a general description of cumulative impact. And at the end of the EIR, a more specific discussion of environmental impact. So let's go to aesthetics. For each of those where there's going be a technical study, I will describe what that technical study will be.

In this case of dealing with aesthetics, there will be a study identification of shade and shadow. So as the basic, winter solstice, summer solstice and at various times of the day, that big structure that you saw, where do the shadows fall.

The analysis that will occur in this section will be shade and shadow, where does the shade fall from that proposed structure, height and massing of the building, view corridors, how does that structure affect views both to the water, from the water. Light and glare, what are the issues related to the building in terms of site lighting, glare off the building and then landscaping and the appropriateness of landscaping on the site.

So that is the aesthetic section of the EIR. The question for you as the public now is are there any other issues related to aesthetics. Remember, we will go through the whole list of the others that need to be addressed in terms of aesthetics. Just so you understand, we're going to try and actually type them in as we go. The official public record, we have a court reporter over there who will actually keep the official record and that will be available as part of the Notice of Preparation and its responses.

So what else needs to be in the aesthetics section?

THE AUDIENCE: View disturbances to and

from the marine at location.

MR. ZOLA: Under view corridor, let's make sure we have to and from marina. We're not going to limit it to that.

THE AUDIENCE: Not view corridor. View corridor is another concept. We're talking about view disturbance, views that are protected under the Marina del Rey specific plans.

MR. ZOLA: Okay. View disturbance. Somebody over here.

THE AUDIENCE: David De Lang, director of the Coalition for a Safe Marina. Sort of a subpoint under view disturbance of the corridor, I guess, I'd like to show you on page nine -- page four, chapter nine, it's under policies and actions E-1.

And the section I'd like to see evaluated reads as follows: Views of the harbor a priority. And it goes on maintaining and enhancing views of the marina shall be a priority role of this plan. Enhancing the ability for public experience, the view of the marina and water shall be prime consideration in the design of all new, modified, or expanded development.

MR. ZOLA: Let's make sure we get consistency -- that's from the LCP?

THE AUDIENCE: LCP page nine, chapter page four, chapter nine, policy E-1.

MR. ZOLA: Consistent with LCP view policies and we have on the record the specific one.

Anything else on aesthetics? Yes.

THE AUDIENCE: I'm not sure if it fits in this category either, but in the event this building is not successful as we hear so many times, that small boats are out of the market, how easy is this building to take down?

MR. ZOLA: That's probably land use. Let's make sure we reserve this one. I'll summarize it as potential for demolition or reductive views.

Anything else on aesthetics?

THE AUDIENCE: Tim Riley. A question, in the initial study under resources, visual qualities it talks about the project will shade portions of the marina waters. Is that addressed under aesthetics because you talk about light and glare, but I don't really read it that way.

MR. ZOLA: That's the shade and shadow study.

THE AUDIENCE: Will it be covered in this area?

MR. ZOLA: Yes, it will be.

THE AUDIENCE: What about the wind study of the impact on surrounding boat slips and the walk ramp in the structure.

MR. ZOLA: Yes. Wind study, I think that comes up later. We'll make sure we get that before the end.

THE AUDIENCE: Also when the sun sets low, will that building reflect a mirror back toward the apartments and the buildings that live across the channels, what will be like the light and glare. Do they know how far forward and what big impact of wall of materials will be.

MR. ZOLA: The height of the building is known, that would be part of light and glare, so that would be the analysis that would occur there.

Yes.

THE AUDIENCE: I would like to see something there about the approach to the marina and how that affects the visitors' perception and introduction to the marina when they see a big barn of a building instead of open space and boats and mass and water and marina things.

MR. ZOLA: Now, the test is how well do I summarize that so they can type that in.

THE AUDIENCE: Identity of the marina?

MR. ZOLA: How about affect of visual effects on entry to the marina. That's why we have the court reporter.

THE AUDIENCE: Impressions of the marina.

MR. ZOLA: There is a couple of things that you have. One was loss of open space, the view of a building or structure rather than that. So change in visual character of the site.

THE AUDIENCE: Yes. Also, will the color scheme fit in with the marina. And there is yellow colors and red, will they fit in with the colors of the marina, or is this like a giant McDonald's structure that stands out.

MR. ZOLA: Compatibility of color.

THE AUDIENCE: Well, the color scheme of the area which has to do with the design, will it be a color that is compatible?

MR. ZOLA: Compatibility of color with, we'll use the term for now, "branding of the marina."

Yeah.

THE AUDIENCE: I wanted to add a subpoint consistency with LCP view policies. I cited E-1, there is an E-3 which is in a different way important. It's entitled scenic drive and the

wording is through appropriate signing of scenic drive shall be designated from the Via Marina Avenue north to Admiralty Way, (inaudible) Fiji east to Lincoln.

In other words, encompassing exactly in part in this project, proposed project area. The question is whether or not this structure proposal is consistent with the concept of a scenic drive along that way.

MR. ZOLA: Okay. We have consistency with LCP view and scenic drive policies E-1 and 3.

Anything else on aesthetics?

Are we ready to go on to the next one? Okay. Next, air quality. In terms of air quality, there will be a technical study done that will be an assessment based on CEQA air quality handbook which is the rules that the South Coast Air Quality Management District has. And there will be a number of modeling programs utilized to analyze air quality impact, one called the URBEMIS model, EMFAC and CALINE4 dispersion model.

What will be addressed in this section are one, a comparison of what are the existing air pollutant emissions that are related to the site compared to if this project is built, what are

what will be its short-term impact, impact during construction. And then what would be the long-term air quality impacts as the operation of the project.

Now as we look at, or as the team looks at doing this study, the traffic study that will be done will be used as the basis to the operational impact in terms of how many vehicle miles traveled and the vehicles that are associated with it.

And also looking at that traffic study, so that impact at intersections, if there would be congestion at intersections as a result of this project or traffic would be put at what is called a carbon monoxide CO Hotspot Analysis. In other words at intersections, what kinds of concentrations of carbon monoxide might result.

The third thing that will be analyzed will be a quantitative analysis, in other words, looking at greenhouse gas emissions, and what kind of greenhouse gases would be emitted, during and as part of this project. So that would be the air quality analysis.

So same as we went through aesthetics, anything else that you think needs to be included in the air quality setting? Yes.

THE AUDIENCE: Since traffic trips generate

more traffic, will it be considering taking traffic trips from apartment buildings, other projects, or will that, there will be X amount for this project and they'll have to reduce that amount to be able to utilize this project without adding more traffic trips.

MR. ZOLA: That is actually more to the traffic section. As we look at -- I keep saying "we," as they, because I'm not writing this EIR. As the Environmental Impact Report is done for air quality, the air quality analysis, one, will look at what are the trips that this project will generate and what are the air emissions, the pollutant emissions from this project's traffic.

In the traffic study, that is where the traffic people will look at this project's traffic in relation to growth of traffic on other projects. So in terms of air quality, this is looking at the air analysis, what will this project generate. As I said, with the others, there would be cumulative impact.

We'll go this way.

THE AUDIENCE: I'm not sure if it's here, but you haven't mentioned, did you mean to include emissions from the concentration of boats, motorized boats.

MR. ZOLA: Let's make sure we get that one also. As we talk about operational impacts, let's make sure we get and include emissions from motorized boats. Good.

Yes.

THE AUDIENCE: Mine has to do with the creation of motorized boats in that area, that there are holding docks. So I would like an assessment done for the peak use recreation periods, weekend, holidays and the effect of that, boats waiting to go out. So it's not just the number of boats. It would be how long they're queued is the word, I think is the word.

MR. ZOLA: So concentration at peak hours or peak use periods.

THE AUDIENCE: Idling concentration concentrations at peak hours including idling of engines. If they don't have catalytic converters, they don't have the same standard of EPA required of cars. So they have to be based on what a boat is giving off, not what a car gives off. You can't count ten boats as ten cars when it comes to emissions.

MR. ZOLA: Correct. The boats need to be

analyzed because they're boat engines and not cars.

THE AUDIENCE: They're sitting there to be lifted out of the water, or to be put in the water.

MR. ZOLA: Okay. Anything else on air quality? Yes.

THE AUDIENCE: I missed one thing on the shadows. The first one, if it's okay.

MR. ZOLA: We can go back.

THE AUDIENCE: The rowers, I remember when we went in front of the Design Control Board, the rowers were very concerned about the shadow on the water because they get up very early in the morning. It seems like that aspect disturbed them, so that should be included.

MR. ZOLA: Let's say shade and shadow study including early morning.

THE AUDIENCE: For rowers.

MR. ZOLA: So right at dawn.

THE AUDIENCE: They're the ones that are using it at that time in the morning.

MR. ZOLA: Anything else on air quality? Okay. Biological resources is next.

There is going to be a number of technical studies done in connection with biological resources. One is a study in relation to marine

resources that will analyze the impact on the biological productivity of marine sources and will identify measures to reduce impact.

So there will be a technical study related to marine resources. There will be a survey related to eelgrass and invasive algae aimed at whether eelgrass and invasive algae are present in the vicinity and effects that might occur because of that.

An analysis of marine bird population to identify the marine bird species that are using the site, using the area in the immediate vicinity and how might this project affect those species.

Then somebody mentioned wind impact assessment. This is where it comes up that would describe in terms of, in terms first of birds. The project's effects on wind conditions within the basin, adjacent to the project, effects on loss of surface wind on birds. So there will be a wind analysis. I think you've already said we want to do a wind analysis as how it would affect boating also. Winds on birds

THE AUDIENCE: A correct bird

MR. ZOLA: Let me get to the section. We'll get there. A memorandum related to Great Blue

Herons. Those are the technical studies that will be done -- almost there, almost there -- addressing the section marine environment plant species, fish and wildlife, sensitive species and then the linkage, the channel connection that come across the site to the Ballona Wetland impact, if any, that this project may have on the wetlands.

With that, anything else on biology?

THE AUDIENCE: In January of 2008, (inaudible) that ESHA exists in the marina and asked the County to do further studies that would have to be included in the report.

MR. ZOLA: Let's add a bullet at the bottom, location of ESHA. Okay.

THE AUDIENCE: The water pollution from boats with burning fuel and impact on the environment for birds and they should take water samplings and the cumulative

MR. ZOLA: I picked that up on water quality.

THE AUDIENCE: There is no circulation of water, there would be standing, still water.

MR. ZOLA: Let's add water quality effects on marine wildlife. Yes.

THE AUDIENCE: In addition to David

Barish's remarks on ESHA, a definition has been offered by the public commission has authority over this project initially or potentially, they stated that ESHA includes not only nesting, but also roosting habitats of certain species including the Great Blue Heron. So it turns out that they're roosting in this site, as a matter of fact. So they're roosting there really -- there is an ESHA, in other words, located there.

Second point, just to look at the fact that Los Angeles -- California or National Audubon has recently designated this area an important bird area. The designation includes, in other words, this area, IBA or important bird area, to look at that information would be valuable in the assessment of the level of sensitivity of the importance of these biological species, the Heron birds, egrets.

MR. ZOLA: Water quality effects on marina habitat, roosting

THE AUDIENCE: I'm saying under ESHA that roosting and not merely nesting is protected under ESHA policies. It includes nesting herons and egrets.

MR. ZOLA: Anything else on biological resources? Okay. Geology and soils.

As with other sections, there will be a technical study that will be a geotechnical investigation of the site. And what will be addressed are effects related to faulting and seismicity since there are faults, earthquakes, slope stability and landslides which is interesting on a relatively flat site, but as you abrade and do things there.

Affects potentially of tsunamis, studying of seaways. Liquefaction in an earthquake, what happens to wet soil. Lateral spreading and subsidence, does the ground essentially subside, go down.

Anything else on geology and soils? Yes.

THE AUDIENCE: I'm not sure it has to do with that or environmental impact, but has been with all the different projects, what you can't see in the water where the different part goes -- gets forgotten. The fact there's been old marinas especially in a boat yard, plus marina, there's been a disposal of bicycles, tires, batteries and everything else. You would think that the study was underneath the water, so it would be a part of the cleanup as they install a new dock or launch ramp or whatever.

MR. ZOLA: We'll get to hazardous materials and solid waste. Let me make a note and we'll pick that up.

THE AUDIENCE: That is something that has been lacking in every development. Take out a new marina, take away the new, never make sure the depth has been kept to the same depth and cleanup.

MR. ZOLA: We'll get to the hazardous material. Anything else on geology and soils?

THE AUDIENCE: One more thing also. The bulkheads, what's the structure of the bulkheads with the weight of the facilities on land, will that push those bulkheads out?

MR. ZOLA: Let's get structural integrity of bulkheads. Anything else on geology and soils?

THE AUDIENCE: A question, is there already some study, like with the Army Corps of Engineers that had some recommendations for the area with geology and soils? Is there any source document that we can compare when we get the EIR?

MR. ZOLA: I may get this, the first one that comes to mind is uniform building codes.

THE AUDIENCE: There was a study done to build harbors.

MR. ZOLA: There are standards. So how do

we word this? Comparison to applicable structural design standards.

THE AUDIENCE: Whatever has been done by the Army Corps, prior warning by Army Corps of Engineers.

MR. ZOLA: Good. Previous Corps recommendations, Army Corps recommendations.

THE AUDIENCE: What did you cite?

MR. ZOLA: Uniform building codes. That would be handled with the geotechnical investigation. That is what they would typically do. Yes.

THE AUDIENCE: I'd like to see a study or something addressing the potential rise in sea level.

MR. ZOLA: Okay. That one I didn't have to summarize. That's great. Anything else on geology and soils?

It's starting to feel like an auction, going once, going twice.

THE AUDIENCE: That makes it more exciting.

MR. ZOLA: I can't talk that fast though. The next one is hazards and hazardous materials. There will be a technical study which is a Phase I Preliminary Environmental Site Assessment. And the

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comment that we had earlier is to analyze potential of hazardous materials or debris on the water site that may be under water.

THE AUDIENCE: And the depth levels kept the same, because accumulating soil being discharged from the street levels.

MR. ZOLA: Depth

THE AUDIENCE: Depth of the channel, whatever they're going to build, everything gets cleaned up and restored back to what it's supposed to be according to Army Corps of Engineer standards.

MR. ZOLA: Let's say depth of channel per Corps standard.

THE AUDIENCE: What is the range of hazardous material they look for? Do they set out and test for certain substances? How do they determine what hazardous materials are present?

MR. ZOLA: I don't know that one.

THE AUDIENCE: Survey of solid waste.

MR. ZOLA: Let's make sure that whatever study is done, that the Phase I study clearly identifies how the determination was made of what is a hazardous material, what is not, so you have a source to go back to, to make that identification.

THE AUDIENCE: What hazardous substances

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are tested for? Is hydrogen sulfide one of the hazardous materials that they test for? Obviously, if there is a leaky underground storage tank, there would be the whatever residuals from that. You know, other things from boating and boat residues, paints, bottom paint that wear off and accumulate.

MR. ZOLA: Let's add there, identify how determination of a hazardous material is made and be clear about what was tested for.

THE AUDIENCE: The impact prevention of construction debris to get into the water. Who is going to enforce it? And what are the consequences going to be when it continues dumping. And pile driving, the noise from pile driving which will come later. We have major problems with that in the marina.

MR. ZOLA: We will get to noise. We wanted to identify paint.

THE AUDIENCE: Handling of hazardous material during construction.

MR. ZOLA: Containment of materials during construction.

THE AUDIENCE: Cost and who enforces the cleanup?

MR. ZOLA: Handling of hazardous materials

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during construction, and then responsibility for enforcement. The other thing that will be a part of the final EIR is part of the whole process is as the Environmental Impact Report identifies mitigation measures. So what are the measures to contain those?

There is what is called a mitigation monitoring and reporting program which identifies who's responsible and actually is a reporting program that shows somebody looked, somebody did enforce, so as a way that the public can determine did the developer, did the County really enforce the mitigation measures that were laid out.

THE AUDIENCE: The problem in the past is they keep shifting and say "Call this office." They said, "Call that office." I went back and forth between the controller and the County. We want one agency to have the authority to stop the project, correct the problem, and then if something continues with the violation, issue fines for it.

MR. ZOLA: As we get to the end, we'll get that. Anything else for hazard and hazardous?

THE AUDIENCE: Asbestos concerns. Would it be under hazardous material?

MR. ZOLA: Yes. Yeah one of the projects

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that

THE AUDIENCE: Cleanup of the road as the soil gets on the streets and gets slippery.

MR. ZOLA: Cleanup of roadways. That's a water quality issue if it's wet. If it's dry, it's a dust issue under air quality.

THE AUDIENCE: Part of the environment to make sure, to know how much cubic yards of soil they have to take out and how much they will put in that will add to traffic trips into the marina.

MR. ZOLA: I will make a note as part of the project description.

THE AUDIENCE: Where those big trucks will stand in queuing and their impact from exhaust, which road will end up being blocked off. If you have 20, 30 big trucks standing and waiting to get loaded.

MR. ZOLA: The two we picked up here, one would have been air quality, one would have been at the beginning of project description as part of the project description. Identify the grading numbers, how many yards of dirt is being moved, how much import, how much export.

The second one is, this is part of air quality and again on traffic, queuing of construction vehicles as they're running and waiting. That becomes an air quality issue in terms of traffic, where is the construction staging. Is there room, how many vehicles on construction.

THE AUDIENCE: Because the tires will track all the soil and mud will end up in the storm drain and it goes into the water.

MR. ZOLA: Geology and soils basically to identify erosion. Yes.

THE AUDIENCE: One other thing about the removal of the grading materials or the cut, if they are found to contain hazardous material, you need to identify where it will be -- where and how it will be disposed of.

MR. ZOLA: We'll add a bullet point handling and disposal of hazardous material if found. Okay.

Next hydrology and water quality.

THE AUDIENCE: Is that part of recycling? How much will be recycled of the asphalt and soil and old pilings, whatever they take out, docks.

MR. ZOLA: We'll get to solid waste. I'll make a note there. Hydrology and water quality. We've talked about water quality a couple different times, but a technical report related to water

quality. What are the effects of this water project with water quality, construction and operation. What will be addressed in this section will be what are the regulations related to water quality: What are the permit requirements, what are the laws that must be complied with.

So one of the things that will be done in an Environmental Impact Report is you start with, the project will comply with the law. So the impacts are not, well, these things would happen. If they comply with the law, they won't happen. We start with project will comply with the law.

So the first part of this section is define what the relevant laws are. Then to look at surface water pollutants run off from the site, what are the potential impacts of that. What are the best management practices that will be applied and required.

What is being incorporated into the project design to address hydrology water quality impacts, looking at increases or what are the changes that occur in the amount of permeable surface, how much water now runs off the site and after development how much water will run off the site based on changes in paving, building, landscaping, so on.

THE AUDIENCE: Also

MR. ZOLA: Let me get to the last one.

Then you're looking at how do you incorporate the basic requirements under various laws with vegetated swells, small swales to drain parking lots. That would be used in medians and on perimeter of sites will filter runoff, will they work and what is being proposed. That's the hydrology and water quality.

THE AUDIENCE: Compliance, will it be an onsite person that will log everything or will it be someone from the County? Who will it be? Will there be a log of different things? There has to be an independent person that doesn't just close his eyes and just let things slide. How do you get that incorporated?

MR. ZOLA: So in the document would be discussion of how is compliance with applicable requirements determined. How is it monitored? How is it determined? Anything else on hydrology and water quality? Yes.

THE AUDIENCE: I'd like to see something about gray water recycling.

MR. ZOLA: Gray water recycling. Anything else on the hydrology and water quality? Okay.

Land use and planning, this is the first place there is not going to be a separate technical study. What will be analyzed in this section is consistency of the proposed project and all those various applications and all the things that are being proposed with, first of all the County, the Los Angeles County general plan, consistency with County zoning regulations. And consistency, as one gentlemen mentioned, with the local coastal program for the Marina del Rey area.

So that would be where we would analyze is this project consistent. And the consistency would be analyzed in terms of that, remember all those different applications, the proposed specific plan amendment, the Coastal Development Permit, the conditional use permit parking lot variance.

So the analysis is that whole package consistent with the general plan, the coastal plan, the zoning, and so on. And so that will look at and for each of those -- goals, policies, development standards. There will be an analysis, I think somebody mentioned building standards before, consistency with the Los Angeles County green building standards that became effective back January 1st. The other one in terms of land use is compatibility of the operation and in construction of this with the public boat launch ramp, do they fit and do both operate. So there will be that analysis.

Anything else in terms of land use and planning? We'll start here this time.

THE AUDIENCE: I think this goes under Coastal Development Permit. It more has to do with the operations of the Coastal Commission. They appear to be about in writing to require that all amendments, and this is an amendment situation, that come forward for changes to the LCP, shall come not one at a time, but as part of an entire look at all amendments needed for Marina del Rey.

Something to that effect has essentially been accepted or established by the commission, adopted, and the question is, whether or not this can go forward, this project, toward permitting all by itself or must it be part of that comprehensive planning which looks at all things together and then amends all needed amendments together?

MR. ZOLA: I'm going to try to get that into one simple sentence or little phrase, but need for comprehensive planning prior to submittal of this application.

THE AUDIENCE: As per the Coastal Commission.

MR. ZOLA: Per the Coastal Commission.

THE AUDIENCE: Comprehensive planning and comprehensive amendment proposal to the commission rather than one project at a time.

MR. ZOLA: Good. Go ahead.

THE AUDIENCE: Kind of related to that is, I don't know, I'll need your help with this. It's the question of when you have something that looks like more than just a typical zoning variance. Rather, what appears in this case to be a change effort to change an overall priority, sort of set of priorities in the LCP scenic drives are priorities, views being maintained and enhanced for the public, are priorities when it, in fact, there is going to be such an overall change in amendments that are asked for.

Is that essentially a flawed thing from the outset because it's not merely something like a variance, seven feet higher or two feet longer, which would be a typical variance, but rather an overall policy change. And the policy that would be at stake in the LCP is the one that says, generally speaking, on the mull roads, you're supposed to

have, especially this scenic drive, a maintained and enhanced view of the water. The other one that might be at stake is the bowl, B-O-W-L, concept which states generally the buildings along Admiralty Way can be very tall and as you start going out on the finger roads or the mull roads, the heights are to get progressively lower.

We have a variance up to 82 feet which is higher than anything else I know of. 75 is the max under any condition and 82 feet might be a violation of that overall, as it's written, modified overall bowl concept.

MR. ZOLA: Okay. This is why we have a court reporter, because now with that, I can just say "bowl concept."

THE AUDIENCE: No, there is two parts when we analyze consistency with the coastal program to look also at the priorities set forth in the coastal program. The second would be to analyze the proposed height of the structures in relation to, we'll use in quotes "bowl concept" but the basic concept of gradation and heights through the gradation and building heights through the marina.

MR. ZOLA: Under bowl concept let's put analysis of structure height in relation to intended

gradation of building heights. I think that get us to where we want to go.

Anything else on land use and planning?

THE AUDIENCE: I wanted to add with regard to the Coastal Commission, what they called for specifically was for the County to do a comprehensive study of all the projects that were proposed in the pipeline in anticipation of updating the LCP in a comprehensive matter. As you said, by moving forward with this project without having done that, it's a potential violation of coastal activity in the CEQA.

MR. ZOLA: Let's take two different parts. One is individual comprehensive amendments so the analysis of the Coastal Commission's request for that comprehensive amendment. So that is the Coastal Act part. When we deal in CEQA, we'll talk about cumulative impacts that can be an analysis, as I mentioned earlier, this project along with past projects, known current projects and reasonably anticipated future projects. So that would be the CEQA determination that would fall in that same kind of category.

THE AUDIENCE: Is that the same category or I would bring up issues regarding CEQA or land use.

MR. ZOLA: We can pick it up right now.

THE AUDIENCE: CEQA guidelines in the law says that for a project that an overall EIR is required and Marina del Rey is being re-developed in many, many projects and overall projects which is marina development. So overall EIR is required to CEQA, and in addition -- I can stop there. In addition to that, by putting work in this project, setting this project in motion, it's a potential violation of CEQA in piecemeal projects.

MR. ZOLA: We'll get to that. We have one slide that will talk specifically about comprehensive and talk specifically about cumulative. I did ask you for that, I realize, but let's stick to land use and planning. Go ahead.

THE AUDIENCE: Yes, I would like to address or have this process address the fact that the Design Control Board rejected the concept of this project outright. They said it was not an appropriate building. It was not an appropriate concept for the marina. It was not appropriate to have a building that went over the water 97 feet. It set a bad precedent. They did not support it. They felt it was completely out of sync with the marina.

So I would like a discussion why this project is being moved forward on that basis as well. I think there are many basis that would indicate this project should go back to the drawing board, should be back in the RFP process to find a more appropriate use to include the public in land use determination. They're juggling all of the pieces of the marina and they have not allowed the public to participate in that process. They do it one at a time through the RFP process, but we didn't even know until a certain number of them had come around how much land use was being re-jiggered(sic).

We had no say in that. We had no participation in that. It is not responsive to the community. The Design Control Board recognized this and they rejected the project and yet it is still proceeding on the basis of this project. We want to know why. And I would like to see a full discussion of that right up front in this report, not in some little section afterward, but in the initial part of the report because that's what is key here.

MR. ZOLA: Let's try a couple things. One would be in the introduction section to identify history leading up to what were the actions taken, leading up to the application being filed. Second,

would be in the land use section looking at the issue of the -- you phrased it as appropriateness of the uses on this site and in relation to the coastal program, general plan zoning, so on.

Because that would come up as part of the consistency with all those plans and programs. I think the history of the site would also -- history of the, I guess, the regulatory history of the site.

THE AUDIENCE: But that misses the point. The point is the public did not participate in that planning decision and that is our constitutional right, Section 3 triple 06 of the Coastal Act acknowledges and affirms that it's a right, it's not a privilege conveyed by the Coastal Act. It is a right confirmed by the Coastal Act.

And we did not get to participate in the decisions about all of these planning changes in the marina. That's what I want addressed in this report as a means of going back and giving that opportunity to the community, to the boating community, to the residential community, to the surrounding community, all of whom will experiences significant impacts not just from this development but from the entire redevelopment and from the change in land use relationships of each of the individual parcels, one

to another.

And without that being responsive to the community, it's just bad planning. It's not going to -- it's not going to have a good result. So I want it addressed in this report as perhaps a means to moving toward that process.

MR. ZOLA: Let me pick up one part that is easy. We want to make sure we have in land use, is change in land use relationships related to cumulative land use changes. That's the cumulative impact. It's not just the change, it's a relationship between the series of changes that occur over time.

One limitations of the California Environmental Quality Act, there is a couple we may run into. This is one of them, is that the notion of an Environmental Impact Report and what it can do and what it does for the public is provide analysis of physical impacts on the environment. So those we can get in here.

What it does not do and one of its limitations is the issue of was the RFP, did it have enough public review, did it not have enough public review, did it have the right public review, and all the comments you made about the public part of the actions taken up here, that is not physical impact under CEQA. That's where

THE AUDIENCE: But it's physical impact on us.

MR. ZOLA: We can deem with the physical impacts of this project plus the cumulative one. So the physical impact, that's what CEQA does. What we should probably also do here as a note, although it's not content of the EIR, is we want to make sure, based on the comment you made, that there is, when the draft EIR is available for public review, that there is wide notice that this is available and so the public is well informed. Your comment is part of the record.

THE AUDIENCE: Okay. I know. But the problem is that there is this overall project and the County has not let us know this overall project. We are beginning to find out a little bit here, a little bit there. It's like working a jigsaw puzzle. The County obviously has a plan and has not shared that with us and now what's here with the NOP hearing and all the other NOP hearings and lease options and every other regulatory and proprietary process and conveniently without the ability to make informed analysis and judgments of the project

because we don't know the context.

And so that is what we need. We need a public disclosure. We need transparency by the County in what is their overall plan and we need it first. We need it to be able to know what questions we want to ask.

MR. ZOLA: We'll pick that up when we get to cumulative. Go ahead.

THE AUDIENCE: I want to say, most people do not understand this because it's piecemeal. It happens for a long, long time and in an area of very transient people, people moving in and out. And a lot of boaters don't even live here. So what is real important that the boater can see by number, they want to see how many boat slips are going to be added with this project. They want to see a total number of slips. The County said you cannot take away 2,000 slips or 2,500. This project will distract or add so many slips. And the same with pumping station, parking spaces, public access or parks, this will add X amount of square feet of recreational parking, parks. If that's the question, we want to see the total number. Because the County has not told us what is the bottom line of how many slips are they going to remove? Ten

slips here, 100 slips there, 20 slips here. It happens, originally this marina was designed for 8,000 potential boats. It ended up being 4 to 5,000, 4 to 6,000 boats. Now it's down to 3 to 4,000 boats. The numbers keep going down and down. We'd like to see the exact number, how much will it add or detract from what the County's bottom line is.

MR. ZOLA: Let's quantify effects on number of boat slips.

THE AUDIENCE: A number that they will not go under.

MR. ZOLA: Minimum number of slips for the marina and then quantify impacts on parking.

THE AUDIENCE: Traffic trips.

MR. ZOLA: We'll get to traffic.

THE AUDIENCE: Because they change the traffic trips juggling them.

MR. ZOLA: Minimum number of boat slips, parking, park availability and coastal access.

I'm doing the physical change under land access.

THE AUDIENCE: It has to be numbers, the total people can see.

MR. ZOLA: We want that impact to be

quantified, yes.

THE AUDIENCE: We did get somewhat of an overview, but it was old and so I understand that it's not solidified either, but when you're displacing the public facilities, the administration buildings, so far we don't really know where that's going. We have an idea that it might go on parcel 20.

If that happens, it's one amendment chasing another because parcel 20 was set aside for marine commercial as a condition on another building that's there. And then what they'll do with that marine commercial which right now is a yacht club, they want to take the yacht club and put it on top of a parking structure.

And I don't know how we can do an Environmental Impact Report if we don't know exactly where everything is going. So you do have to have a very comprehensive look at everything. I think it's very appropriate to start with this project because this project will be one amendment chasing another.

We don't know where the admin building is going. We don't exactly know where the parking is going. I don't exactly understand why we're minimizing the number of parking spaces for the

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project, these kind of things.
MR. ZOLA: So under displacement of public facilities, let's put a semicolon, analyze, what you're saying is if we're going to displace a facility, we need to analyze where it ends up.
THE AUDIENCE: How do you address what is the requirement for the plans for public art? Is the building itself the piece of art or is this going to be something to add a piece of art. It's a certain personal one is the master plan has to have two percent of dollars invested in public art and they have to be a little bit on each project.
MR. ZOLA: That we will pick up back in the aesthetics. Make sure we get that.
Go ahead.
THE AUDIENCE: Another point along the lines of consistency or not with the Marina del Ray LCP. I'd like to refer to chapter one, page seven and their policy E-1, 2 and 3. The title is Shoreline Pedestrian Access. We're told in number one, entitled Public Access to Shoreline a priority, maximum public access to and among the shoreline within the LCP area shall be a priority goal of this plan. Number two, we're told existing public access to the shoreline or waterfront shall be protected

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and maintained. And in three we're told all development in the existing marina shall be designed to provide access to and along the shoreline. All development of the bulkhead and the existing marina shall provide pedestrian access ways and resting along the walkway(inaudible).
MR. ZOLA: Somebody back there.
THE AUDIENCE: It says in NOP parcel 49 being re- designated as public facilities to allow for admin offices. And are you going to look at alternatives for other sites for these offices that is currently used for parking, isn't it, or the public boat launching?
MR. ZOLA: Analysis of alternative sites for the admin building.
THE AUDIENCE: Are we going to have the discussion here about cognitive alternatives or at the end of this discussion?
MR. ZOLA: We can do it, if we're talking about land use alternatives
THE AUDIENCE: EIR you have project alternatives identified. There would be three or have additional projects identified.
MR. ZOLA: We can pick that up at the end.
THE AUDIENCE: That's the line of

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questioning I have, because we really haven't thought of other alternatives for this, although there was another dry stack storage proposed. I don't remember what street that was on, but there was another dry stack storage proposed. Do we need two of them?
Can this be thought of for another site that is really not on the water so much? Why not go ahead and trailer something in the way where we can trailer these boats instead of just putting them in the water. It's kind of a nice feature if it's taking up valuable space and not going to give that much value back.
Perhaps we should think about putting it a little more inland and just trailering the boats in. Other possibilities
MR. ZOLA: Go ahead.
THE AUDIENCE: Public as second, will there be a shore boat taxi service that would extend to the dock? Will it be loading and off loading? Will it be public slips? If you bring your own friend, who is going to pull in for the weekend because they have a boat for the weekend or they're going to go out fishing as a group of boaters, will they be able to do it and have their boat serviced?

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MR. ZOLA: That would be a part of the project description is availability.
THE AUDIENCE: Availability, but how much public access will they actually provide and not just for tandems, but temporary.
MR. ZOLA: Anything else on land use?
THE AUDIENCE: Andrew Pasett, (inaudible) president of the Marina del Rey Boat Association. I have two questions. First, I'd like to express my disdain for the way this evening's process has been wrapped so tightly as to restrict and inhibit public's input.
Question number one is, who is responsible, whose idea was this to take away so many of our boat slips and give us back a new business on water for one of you guys? That's question number one. Whose idea was this?
Question number two, whose idea was it to say that it's okay to crowd our public boat launch ramp so badly that a third of it is almost unusable? Those two questions, please.
MR. ZOLA: First of all, nobody has taken action on anything yet. Nobody said anything is okay or not okay. I think in terms of the environmental impact, one of the things we want to

make sure we get is the issue we raised which is potential for crowding of waterways, concentration of boats and essentially the crowding.

THE AUDIENCE: Impact on the launch, crowding of boats.

Whose idea was it?

MR. ZOLA: For CEQA purposes, and this is the law we're operating under, there is an application in front of the County. The County has one and only one option under the law which is analyze it. So that's where we are. If you have questions regarding the process as to how we got to an application, that you need to talk to the County on. I don't know that history.

THE AUDIENCE: So the answer is some developer.

MR. ZOLA: The answer is I don't know that history. I can't help you there. Anything else on land used? Yes.

THE AUDIENCE: On the change in boat slips, the Coastal Commission recommended that no slips be eliminated in the marina and no slips under 35 feet. This facility is made for boats under 35 feet, so the question is what is the need for this given the fact is there should be no further elimination of

slip sizes.

MR. ZOLA: Let's make sure that is analyzed in terms of boat size, not just total numbers.

THE AUDIENCE: After commission recommendation, concern of the public was that this is being pushed by the County as a facilitator for removal and taking slips out of the water and put boats around even though it will attract new boaters. But the impact on this project and its relationship with the removal or staying of slips in the water.

MR. ZOLA: So when we talk about net change in boat slips, let's say add size of slips.

THE AUDIENCE: Maybe a disclosure of the how -- they are juggling the numbers. How can I say it in a better way.

MR. ZOLA: Juggling the numbers sounds like something that accountants are in trouble for. That's why we have qualify the effects on the number. You want to see those numbers, what is the net change.

THE AUDIENCE: What is the County's goal and how the developer is says his role will be used.

MR. ZOLA: Anything else on land use? Yes.

THE AUDIENCE: I don't know if that exactly

fits in, but when you're looking at a limited amount of water space and you're looking at yachts, yacht brokerages especially, they have a lot of large boats. We don't know what kind of turnover those boats have.

Going around the marina I suspect a lot of those boats have been there for a long time. They're not turning over. They're just taking up water space. And since it's at such a premium, it does seem the County's intention is to find a way to take the parking spaces and take the boat slips, so that they can build more on the land, residential, hotel, whatever. It's not very recreational focused.

When you look at the limited amount of water space, are we really being fair in looking at just how the larger yachts, are really -- are they really utilizing that space or are they just big parking spaces for old boats that are not being sold.

Will this be used for brokerage boats, new boats? The County eliminated a lot of those locks. In that particular area where Pier 44 is, they have two or three lots where there is more brokers selling more boats like this. Is the intention to

put those small boats in this building and use of that as a place to shop for a boat basically?

MR. ZOLA: One of the things we should identify is

THE AUDIENCE: What is the range shown between sailboats and tandems that need a space.

MR. ZOLA: Will slips be used for recreational boats or for sale boats, for sale, S-A-L-E.

Anything else on land use? Yes.

THE AUDIENCE: I did, but I forgot.

MR. ZOLA: That's what our catchall at the end is for.

THE AUDIENCE: Did we miss pop-up stations and public restrooms?

MR. ZOLA: Let's put availability of pump-out stations and public restrooms.

THE AUDIENCE: Oil, hazardous material.

MR. ZOLA: Okay. Let's go to noise. There will be a noise study. Somebody had brought that up earlier. And what will be addressed is both noise that you hear through the area and groundborne vibration, but impacts on the project in relation to the County Code, the general plan noise element and Caltrans has criteria for damage that comes from groundborne vibration, noise measurements for existing will be taken at five different locations. Then the study you will see that environmental noise study will analyze construction noise including the pile driving and vibration that comes from that, both noise and vibration related to the construction.

And then operational impact, what's the sound that comes from the crane, from the boats, from the traffic and the traffic noise related to people coming to and from. Anything else on noise? Yeah.

THE AUDIENCE: I have two things on noise. We had a bad experience with pile driving when they built a prior building. They used old equipment. They didn't have proper sound selection. A lot of the neighbors moved out. They complained to the County. Very little was done and had to suffer through this noise, you can hear it five or six basins over. I was in my friend's boat down in the village and you can hear the sound traveling through the air and your whole boat shakes because it comes through the soil.

MR. ZOLA: Before I do that, let's catch need for mitigation.

THE AUDIENCE: No. Modern OSHA approved insulation to the highest standard. They can't put an old crappy rig there that is smoking and doesn't have proper exhaust and catalytic converter and proper mats covering it.

MR. ZOLA: Modern OSHA-approved equipment. OSHA-approved equipment and mitigation.

THE AUDIENCE: They have to be onsite sound testing on a daily basis and with the hours. They can't do it on Saturdays or Sundays or after a certain time or before a certain time.

MR. ZOLA: Rather than testing, let's say noise monitoring and then

THE AUDIENCE: Not start before seven.

MR. ZOLA: Need limitation on hours of construction.

THE AUDIENCE: Who enforces and who is responsible in the County and what action do they do?

MR. ZOLA: That comes in the mitigation monitoring.

THE AUDIENCE: The second thing I was going to say about the building, this is a tall building. They're going to have a skim to cover it outside. What about the harmonic frequencies, is it set up so

it will work like a trumpet setting up through terrible sounds? Will things start vibrating and drive people crazy? How will that be part of something that they can predict with a building?

MR. ZOLA: Harmonic frequency, noise effects of wind on the building.

THE AUDIENCE: Yeah. If you all know about that bridge that's been seen on video from the 50's, the wind tunnel (inaudible) harmonica and it fell apart. In the marina you can hear when the wind picks up and rain starts humming and I can imagine a big building with frequency will start humming.

MR. ZOLA: I'm not sure how that works, but we've got it. Anything else on noise? Go ahead.

THE AUDIENCE: Is there anything about the effects of the noise on the recreational user of Burton Chase Park. Most construction is allowed to have six-day construction schedules, and just to look at that and look at the impact to the public of the construction on the westbound end where they're trying to relax.

MR. ZOLA: Okay. Effects of noise on parks.

THE AUDIENCE: On park visitors.

MR. ZOLA: Right. What will happen, there

is going to be a noise study. It will analyze impact of noise from the project in relation to County noise standards and those noise standards will be analyzed.

THE AUDIENCE: Also, not just the impact of noise from the pile drivers, but from generators, from any kind of equipment they're using, gas motors, drilling trucks that have the proper mufflers complying with California standards when it comes to vehicle standard.

MR. ZOLA: Analyze noise impacts of construction equipment. Anything else on noise? Yes.

THE AUDIENCE: When you talked about pile driving is very noisy, but one concern that doesn't fit under this, the concern about pile driving, it loosens the connections for the seawall where there is erosion. And when those connections are broken, erosion takes place. So I really hope that the County is monitoring that and reporting back to the public. We don't want to come back and see that the seawall is fallen apart.

MR. ZOLA: Potential impact of vibration on the seawall. Anything else on noise? Okay.

Traffic is next. Another technical study, traffic impact analysis. And that will be assessed based on Los Angeles County Public Works and City of L.A. Traffic Study Guidelines. So they're adapting guidelines that lay out the methodology that the study will follow.

Analysis -- I know you've already talked about some of the land use issues, but an analysis consistent with Marina del Rey land use plan, traffic improvement program, guidelines that are in the 2004 Congestion Management Plan. There is six intersections that will be evaluated for evaluation, and let's go to the next slide. There they are.

In the six intersections that will be specifically analyzed are Admiralty Way and Fiji and Mindanao and Bali and then Lincoln Boulevard at those same three intersections: Fiji, Mindanao and Bali. So those are the six intersections shown there.

Go back to our previous slide. The way the analysis is done -- I'll get to the end and we'll get there -- is done there will be an analysis of traffic under the existing conditions, what is there today. Future conditions with the project in place, future conditions without the project in place. So it will actually analyze increases in traffic that

will occur whether or not this is ever built. And then look at if it's built what are the impacts of this project adding to those future conditions.

There will be an analysis of levels of service which is a way of measuring at impacts at an intersection and something called ICU, Intersection Capacity Utilization, how much of the capacity of an intersection actually will be taken up.

And then there will be, and we talked about cumulative impact, we'll get to that section, but 30 projects being proposed or that can be reasonably be foreseen will also be thrown in the mix along with increases in traffic that are already a part of the relevant traffic models.

And then the impact we mentioned earlier, impacts on parking. And so in this session there will be that analysis of impacts on parking because there will be a request for a waiver of the parking ratio of one parking space to four dry storage spaces. So an analysis, will there be adequate parking if that waiver is granted.

With that, anything else on traffic? Yes.

THE AUDIENCE: Will the waiver of 75 percent of floor space, how can that be compatible with the requirement of the coastal plan

of public access? Where will those three out of four public parking spaces go? Will it put to another project? The County has been traveling other parking around that is part of a piecemeal that the public cannot see. We want to see a disclosure up front. What prohibits them from building a garage like the proposing in many other sites to hold four parking spaces to four dry floor spaces.

MR. ZOLA: Let's get two things, one is we have impacts on parking. Is there adequate parking? The impacts on parking need to address potential effects on coastal access by forcing parking off-site. Does that occur, will that occur, and if that would occur, what are the impacts of that?

THE AUDIENCE: And the impact on the adjacent communities because the County is taking out all the public sport facilities in this marina even though this is a community and push it and say, well, other communities have to deal with it. They have to deal with floor parking, gas stations and so on. So I want to see where the parking is going to affect our neighbors.

MR. ZOLA: Effects on coastal access and surrounding community. Yes.

THE AUDIENCE: I would like to see an analysis, or not an analysis, but I would like to see a study and identification and acquisition of this alternate parking site. So far we have Fisherman's Village which is contemplating shared parking arrangements with the public parking lot even though our LCP says that the parking on privately developed parcels is intended to accommodate overflow parking for the public during nonbusiness hours.

In fact, what happens in most places in the marina is exactly the opposite. The private uses on these parcels takes over the public parking capacity whenever there is an overflow. What we're seeing in all of these new projects, not enough parking and reduced combinations of parking, more tandem spaces and more compact spaces as a proportion of the project that is required by County code.

In April of 2006 the Design Control Board identified over 300 public parking spots had disappeared from the Mother's Beach area and there was no plan. It's musical chairs with parking spots. It's musical chairs with open space. What ends up losing in the general public and the low cost visitors serving and the identity of the marina. In other words, all of the social costs is what always gives. And the developers go in and they say, Well, they got a variance for that so we should get one too. But everybody can't get that variance. It's not possible to give that and still satisfy the Coastal Act requirement that the marina serve the public and coastal and access by the public to the coastal resources.

And I think there needs to be some kind of an analysis here of how much of the parking. Maybe it's a study of existing buildings that have been put in, how much of that predicted parking need is actual? How much additional parking demand is there from what has already been built? Everybody is getting squeezed, but there is nothing being built.

We also need to identify if something is going to be built, where is it going to be built and it needs to be acquired and an analysis needs to be done on the diminishment of public access to the marina during whatever period of time it might take to actually build the structure. When will it be built and how will it be phased in so the public will have continuous access to the marina.

MR. ZOLA: Let's get this idea in, do this impact on coastal access, let's put in parentheses

cumulative parking demand. There's demand to all the uses on parking. Where will cumulative parking demand be met.

Go add.

THE AUDIENCE: Are we getting less traffic in L.A., do we need less parking spaces?

MR. ZOLA: So parking demand, cumulative and long-term needs. Go ahead.

THE AUDIENCE: I was curious about the trailers, people that travel across country. Where are they going to be putting their trailers, camping type situations, which we are really lack of. So that's something that we have to consider for that site.

MR. ZOLA: RV parking, question mark.

THE AUDIENCE: And the phasing.

MR. ZOLA: Under parking demand, let's put long-term and phasing.

THE AUDIENCE: Not just for parking demand, but phasing for the roads too.

MR. ZOLA: Let's say phasing of traffic improvements. Go ahead.

THE AUDIENCE: What is the impact on our sewer system since the County is opposing a second sewer line being run on the County property?

MR. ZOLA: You're one page ahead.

THE AUDIENCE: The second thing, it gives short comments because as we start adding, I can feel the developer must be cringing as all the things that would cost more money. But I hope he understands this community had such a bad experience with the County and spending so much money on the consultants and playing all the tricks.

So we have to be very careful with all the details. If you're not careful with the details, our past experience tell us we will get screwed again. That's why we're spending our free time here because we could be home with our family or friends, or working or spending time with our families because we know what happens here will happen for the next 30 or 40 years.

MR. ZOLA: Another comment?

THE AUDIENCE: (Inaudible) Via Marina, Admiralty and Washington Boulevard, people coming from the west side will use that access way to get down to this facility.

MR. ZOLA: Analyze -- what was the intersection?

THE AUDIENCE: Admiralty, Via Marina and Washington Boulevard.

MR. ZOLA: Yes.

THE AUDIENCE: Do traffic mitigation issues, the last EIR issued by the County, they talked about mitigation for the project. That said mitigation has not been approved or even funded. So it's important to when pulling mitigation evidence that are approved and will happen in terms of traffic speaking about the Admiralty.

MR. ZOLA: Let's get need to ensure feasible

THE AUDIENCE: Feasibility of.

MR. ZOLA: Feasibility and implementation of mitigation. Yes.

THE AUDIENCE: Is there a separate section on nonvehicle traffic?

MR. ZOLA: This would be it.

THE AUDIENCE: We need to analyze the need for alternate transportation systems, bicycle lanes for people to do something other than recreational biking for their leisure time. We need to have bicycle paths that go from the residential area to the commercial area and outside the marina that are safe to travel.

Via Marina is actually a death trap for bicycles. There is no -- there is a lane on

Admiralty now, the eastbound lane that will be marked for a bicycle path and used much more safely than it is now. These things need to be identified and they need to be incorporated into the community plan.

If the bus stops are required by LCP, they're supposed to have a turnout for the shuttle system which is basically a tourist thing for weekends and holidays now, but is anticipated to be an alternate transportation system that people can actually use to get around.

There are no pullouts on existing projects that have been built for the shuttle buses, so they're going to stop in the middle of traffic and there is going to be a nightmare. These things need to be put in and dealt with seriously and they need to be dealt with up front. And if you don't have the actual shuttle bus service, at least need to have the areas that will accommodate them once they are up and fully operational.

MR. ZOLA: Need to provide for nonvehicular transportation. In parentheses bicycles, bus turnouts, walks, pedestrian sidewalks.

THE AUDIENCE: Promenade is not for pedestrian. We have to have transportation for

walking along the water. Most people who walk around the marina to get somewhere spend most of their time in the street in the mull roads and in the parking lots and across the parking lots and across the streets. It's not safe and we have families with young children. They're trying to negotiate parking lots with cars and crossing streets.

It's not well marked. There is not direct paths. Sometimes you cross on one mull and you have to walk diagonally across the street to get to the next connection. These need to be

MR. ZOLA: Let's say pedestrian

THE AUDIENCE: Okay. Nonmotorized transportation needs to be designed into the marina.

MR. ZOLA: Anything else on transportation? Pedestrian crosswalks.

Anything else on transportation? We have two more to go, a couple more.

The next one is utilities and service system. What will be analyzed here, somebody mentioned wastewater, demands on water which will include water conservation. Waste water, solid waste, generation of solid waste, we've already mentioned, finding other solid waste. Electrical

demand, natural gas, telephone. There will be thresholds that are significant as we talked about.

Each utility provider will be requested to provide an analysis, what can you and can you not serve. And then a discussion of the tiled conduit and the utility corridor or utilities going through there and impacts on that utility core.

Anything else on utilities and service systems? Yes.

THE AUDIENCE: The impact measure that tsunamis can have to pollute sewer lines, the cumulative effects of the sewer lines. The County doesn't want to have a second one on this property and what is the backup plan if the existing sewer line breaks or has to be shut down for the area. Tsunamis can affect the sewer, the water line, the electricity. What is the backup plans for telephone and gas?

And for example, solid waste, will it be solid waste plan that will have logs that will be required to keep logs so they can present it to the air board or whatever it is?

MR. ZOLA: Let's add two things. Let's add safety of utility systems. The other one is in relation to solid waste. I'm not sure what you're

looking for.

THE AUDIENCE: They're required to have logs, the kind of waste they're disposing of, hazardous waste, who takes it, who picks it up. It should be on the record so anybody can go in and check the record from the County or part of the public record. They have to submit and also that they don't -- oil and stuff goes into the sewer. Pump-out stations to empty the holding tanks of all these vessels.

MR. ZOLA: Add pump-out stations.

THE AUDIENCE: If they're required to have a second sewer line in place prior to building this project.

MR. ZOLA: Sewer lines, put a colon, requirement for second sewer line prior to construction with a question mark. Anything else on utilities? Go ahead.

THE AUDIENCE: Did you say this is where we should mention the gray water recycling?

MR. ZOLA: This is it. So under water, gray water recycling. Yes.

THE AUDIENCE: Justification from the water department what 29 or 27, whichever water department it is that supplies the water in this area, I'd like to know, since we have such a shortage of water why we would consider such a project that's going to be with all the wash-downs.

MR. ZOLA: Water supply availability.

THE AUDIENCE: I would really want to see a report from that department, how they're actually justifying it. Not that they have justified it.

Not only the water needs for the wash-down, et cetera, but all water needs for the landscaping. There is 175 percent more percolation areas. So there will be -- that's something, gray water recycling can address.

MR. ZOLA: Landscape use. Anything else on utilities?

THE AUDIENCE: What kind of power outlets? 15 amps? 30 amps? 60 amps?

MR. ZOLA: Under electric. That would be part of the project description, but let's catch it here. Power connections to boats.

THE AUDIENCE: Will the pump-out station have public access to it?

MR. ZOLA: Can the pump-out stations, will there be public access. Yes.

THE AUDIENCE: And providing restrooms for the general public that is supposed to be walking

around all of this promenade. I'd also like to see if they put a promenade in, I want to see public restrooms and I want to see cutouts for wheelchairs. And I want to know the design of the walkway isn't going to be a beveled thing so if you're in a wheelchair, you're not bumping up and down.

MR. ZOLA: Need for public restroom, question mark.

THE AUDIENCE: What would be the -- that existing restrooms in the corner of the basin, will that be removed or expanded on or added to?

MR. ZOLA: I don't know.

THE AUDIENCE: The public access way, I really do want to make sure that there are cutouts for ADA use and that access is friendly to the people with ADA issues.

MR. ZOLA: That would go under transportation, pedestrian. I have a couple we picked up afterward. Anything else on utilities? Okay.

Cumulative impact. We've hit a lot of this. Cumulative impact and the basic definition under the law is two or more individual effect, when you take them together, there is sometimes far more significance than two pieces separate. That is some

of the concept some of you talked about, analyzing one without looking at the other.

So in terms of cumulative impacts, the air quality analysis will analyze construction, operational impacts. The traffic impact analysis looks at the modeled increases in traffic that are already part of the analysis model, and then adds 30 projects occurring within the two-mile radius within the County, within the City of Los Angeles and Culver City.

And projects that we know are occurring as part of that regional development that are known as of January of 2009. We'll show a map of that, but ten new projects have been completed, three are scheduled or in process. Three more projects pending approval of leases and six that under negotiation will be part of that cumulative analysis.

And there will be, even though in each section there will be a summary of cumulative analysis, there will be one chapter in the EIR devoted solely to the cumulative analysis and will actually take that cumulative analysis and run through all of those different subjects.

THE AUDIENCE: If it's done by a Counsel

from the County, the analysis of this cannot be trusted. It will be a big waste of paper. It has to be done by independent source that will not favor them to the County.

MR. ZOLA: Under cumulative impacts, need to ensure that cumulative list is complete.

THE AUDIENCE: I want to make sure he's not hired by the County to make it fit the County objective.

MR. ZOLA: But the objective to do that is to do what

THE AUDIENCE: Do it in a fair and neutral matter that lists all the pro's and con's of this impact.

MR. ZOLA: Need to ensure that cumulative is complete, need to ensure that analysis is fair and unbiased. Yes.

THE AUDIENCE: Marina development status, as far as my calculations, that is not correct. There is currently 16 projects that is in some stage of the regulatory or proprietary stage as of 1/14 not counting the ten new ones. There is four projects missing.

You left off the section for pending regulatory approvals. There are nine projects pending regulatory approval. You just had the other four categories.

Is that the baseline for the EIR?

MR. ZOLA: That's what it is so far. If there is one that you know over and above that, one of the things that would be very helpful over the next week is to get that on the back of the agenda, to the contact person at the County and so to get that list over to the County would be very helpful.

Anything else on cumulative? Yes.

THE AUDIENCE: I just think it's important to note that in reading this document it says that it's County owned. This is publicly owned. The County has been -- it's in the County's jurisdiction and the County is charged with its maintenance and operation. But I really do think that a major correction has to be made there because this is publicly owned. And the public does have a will with this project and it's stated in the mandate and it's stated in-house Document 389, and a bond was paid for.

So the cumulative impact actually ends up changing our land use plan and manipulates the mandate of the people and I find that a major concern.

MR. ZOLA: The land use that we expressed earlier and maybe we will get it here also -- we have it under land use where we talked about promised set of cumulative projects and changes, how do over all the land use relationships within the marina change.

THE AUDIENCE: But what happens is it denies our mandate. It denies the will of the people. Without change, it's going to be such a cumulative impact on what this project, this scheduled project, was supposed to be, because it's going to be chasing one amendment after another.

So what that does is it undermines the master plan. It undermines the original intent of the marina. It undermines public ownership. It undermines the bidding process.

The real source documents and the heart of what this marina was supposed to be becomes dismissed in that kind of cumulative impact.

MR. ZOLA: We just hit another limitation under CEQA. What the EIR can and needs to do, based on the comments you made, identify the physical changes that will occur, but then it becomes essentially your responsibility. It then goes back to the public. The information on the physical

changes that will occur will be given in that document to the public and then it's your job and the commission's regional planning commission's job and the board's job to make that determination ultimately of the will of the people.

But the EIR provides the information. Then it becomes the approval process and public hearing process to really deal with, now that you have all this information, is the project a good thing, not a good thing. Is it the will of the people? Is it not? That's the hearing process. But what the EIR is intended to do is provide you with the information on what are the physical changes on the environment.

Go ahead.

THE AUDIENCE: First of all, I'd like to commend you for operating this meeting in a fair manner, and I think you've given consideration to all the people and comments that were made. Back to the project alternatives, will you be looking at a couple different project alternatives such as a land-only project and not this is over the water and land look. At one that is just on land, look at other parcels that might accommodate this type of operation.

MR. ZOLA: Very good. There we go. We have a brand-new slide. One is look at a land-only alternative sites.

THE AUDIENCE: No plan or project.

MR. ZOLA: No project. Under CEQA there is always a no project alternative. What will happen is, through this whole process and the Board of Supervisors, whoever makes the decisions on each of these says no, what happens, that's the no project alternative.

THE AUDIENCE: Splitting up the project, smaller projects that fit in scale with the rest of the community in different locations.

MR. ZOLA: Smaller projects and multiple smaller projects.

THE AUDIENCE: Back to cumulative impact, the analysis should review the definition of project under CEQA and advise the requirements of when you have a project and under CEQA in terms of overall EIR in development.

MR. ZOLA: There is two analyses. One you're getting a term that nobody has used yet, you've talked in different places about piecemealing. The other issue that needs to be addressed is what is the term "independent utility" which is an odd term in a way. But independent utility of this project, so one of the issues and what CEQA requires is you need to address the whole of the action. And the difficulty sometimes is what is the whole of the action.

So the whole of the action starts with a lot of what you've been talking about. Second analysis that needs to be done in that case is, is there independent utility to this, whatever this happens to be. So an example of a much larger scale issue that Riverside County went through.

Riverside County was updating its own general plan. At the same time it was adopting a habitat conservation plan, and it was analyzing to support that general plan to actually four major highway corridors. They were going to do what they called, and this makes it difficult to picture, the Riverside County Integrated Project. So you have all those actions called the integrated project. The question the County had to do is do we do one document for all of that, kind of the same way you talked about, the entirety of the marina or do we do separate documents? And that's the independent utility issue.

So you look at what they did in that case

is look at, would we proceed or could we proceed, is there a utility and a reason to proceed with one part of this, with one of these actions in the absence of the others. So you look at those kinds of things.

So that would be the test on the other side of piecemealing is there independent utility. Remember, at the beginning of the list we had that long list of actions that were being proceeded, the variance, the various permits. There it's easy to see this project could not occur except for all of those permits.

So you couldn't reasonably say, Well, let's not analyze the LCP amendment. We'll set that one aside. We'll just look only at this site. As you've talked about, what are the implications of all of those. So one of the things that we should add to the cumulative impact in relation to some of the arguments you've made, need to define the independent utility of this project, because that is the task. Can you, in fact, analyze it in the absence of all the others?

There is two different ways that you deal with that cumulative. One is the issue you raised is that you need all of the projects together,

essentially one EIR in one project. The whole of the action versus the independent utility argument. The second one is analyzing a project that has independent utility in relation to the cumulative effects of other projects.

So that is kind of the task that we'd have to go through or that the writers of the EIR would have to go through in the project description in the determination of what you said, what is the project, what is the whole of the action versus the cumulative effect and cumulative projects that need to be analyzed in a cumulative section.

THE AUDIENCE: There's enough case law to show what I'm saying is accurate.

MR. ZOLA: Yeah.

THE AUDIENCE: I put it out there.

MR. ZOLA: I'm not arguing one way or the other in the way you do that. You have to analyze both. Is there independent utility to draw that line between whole of the action and the cumulative. So what you're asking for alternately is somebody needs to do that task. Yes.

THE AUDIENCE: I have one question here. The Coastal Act and also reflected in our LCP the definition of feasibility and the analysis which

needs to be done to determine feasibility. There are four factors: The financial, technical, environmental and social.

It seems to me the County has done a real good job of exploring financial. The EIR seems so address the technical and environmental. But where is the social analysis done by the County, by the developer and the County in some formal process where members of the public can see these analysis and have those issues addressed?

You say the EIR is only for the physical changes. Most of the social changes are not physical. Some of them are and I think those could be addressed in the EIR, maybe not so much with this project, but certainly with some of the projects that displace residents and displace boaters. I think it could be done there.

But where are we going to get the social analysis that we need to determine whether these projects are physical because some of the social costs that are being imposed will have a financial consequence somewhere down the road and we need to look at that.

So how do we get that looked at in an official capacity?

MR. ZOLA: That's a tough one. We do butt up against that limitation of CEQA. So in terms of when you mentioned displacement of boats, displacement of people, that is a physical impact. So under CEQA that gets analyzed. What doesn't get analyzed under CEQA is the impact on the people that get displaced.

THE AUDIENCE: Well, it's more than that. What is the impact transforming the marina into a residential enclave for most of its land area and the public being relegated to ever smaller areas of their recreational use at the same time that regional population is burgeoning and the need for open space and recreational facilities is growing.

This land was purchased for recreational use. And the idea of converting it now to private utility has a social cost. And those social costs, what about health care services, does the County want health care or health care for its residents? If we want health, we need to provide spaces where kids can run around and play and get exercise and de-stress. There is a very physical impact.

MR. ZOLA: I understand.

THE AUDIENCE: I just want to know where we can get that addressed and maybe we need to start

asking the question, because I don't see where it has been addressed up to this point.

MR. ZOLA: As I said, you found the point that CEQA ends which is here are the physical impacts. The kind of issues you're talking about are the debate of the discussion that goes on in the public hearing process. There is not, that I know of, a formal way of saying those kind of social things and the effects on social interaction, nonphysical things get analyzed.

So that is a limitation of our system, but the idea and the requirement in the public hearings for the public hearing is to take the information provided in that document, in the document identifying the physical impacts and to inform your own decision-makers. This is what your decision means for me and my community. What you're talking about is the debate, public debate, that goes on in the public hearing process.

THE AUDIENCE: Somehow what we want is, we want our decision-makers to do that analysis. We don't have the resources to do that analysis. We can raise questions. We can nibble around the edges, but where do we go to get that formalized into this process? How can we achieve that because

it is an equal component of this feasibility standard which is required to be analyzed. But these things do need to be considered and factors into whether projects are feasible.

MR. ZOLA: Unfortunately, I don't have any good advice on how to get that formal thing. The best I can offer you as part of the record, one of the things I talked about in terms of the Notice of Preparation and the review period on that Notice of Preparation which is the CEQA physical impact law. In terms of what goes in the EIR, that closes on the 27th, next week.

Up until the time that the board takes or whoever takes final action on this, comments that you want to make to the commission, to the board, to the staff on what are the things that they ought to be thinking about in making this decision beyond what CEQA is going to give them. That's a request. Send a letter in. That's the best advice I can give you on that.

Yeah.

THE AUDIENCE: Maybe another way of getting the County to look at it in a physical way, that site that they want to put the Boat Central on, maybe the better recreational use for that site

would be an Olympic size swimming pool.

MR. ZOLA: Part of what you can look at, if you want to make those kinds -- we talked about alternatives earlier. If one of the things you want to do in your comments on the NOP in the next week, is comment on if there are uses that you think of that would better meet the kind of needs you've talked about, you've talked about. Identify those. Please identify those alternatives.

THE AUDIENCE: Thank you.

MR. ZOLA: Go back to alternatives. How do we want to describe that? Other recreational uses. Yes.

THE AUDIENCE: Go back to the second slide. My concern is the person or corporation that's analyzing, are they going to have their views and their opinions, which if they're hired by the County or the developer will more than likely be in their favor. The County has a tendency to pick these people that have a project in their favor. So it's rosy. I would like to see some disclosure to the County of the relationship with the developer, their past performance, the cost of doing this report.

And secondly, failed to do a recreational value or include the recreational value whereas commercial value. In the marina you can't have commercial value if you don't have recreational value meaning if people can't enjoy themselves, there is no point of wanting to live here.

If it's all apartments, all industrial, if there is not a balance, if you take too much of one thing or another which you only can see if you have an accumulated report that covers impact of all the project. There has to be a recreational dollar value whereas a commercial value.

MR. ZOLA: Let's add another bullet point, balance between recreational, residential and commercial uses. Under cumulative all of this together.

THE AUDIENCE: All amounts on the recreational value versus commercial value. Whoever does the analysis, there's a disclosure of his relationship to the County and funding. That's what we are concerned about. Anybody can write a book. If somebody gets paid enough they will write a report you like. And if they've done it in the past, they will write a very nice report and have all the description. But it's in favor of the County's position.

MR. ZOLA: Here is the legal requirement.

It doesn't sound like you're going to like the legal requirement. The Environmental Impact Report, before the County can send it out for public review, staff needs to make -- County staff needs to make a determination that the document reflects the independent judgment of the County.

And so no matter who prepares it, how they prepare it and who spent how much on what, that document must legally reflect the County's independent judgment. The reason that it goes out for public review is members of the public, other agencies, may not agree with the County's independent judgment. That becomes part of the record.

And sometime people ask, well, wait a minute, this is County leads, so they're analyzing their own project. But under the law, The Environmental Quality Act, even if this were purely a public project, so the County is going to build, build a corporation yard somewhere now, they have to do an Environmental Impact of purely their own project, they're required to analyze the impact to their own actions.

THE AUDIENCE: Even if they can say we can live with those (inaudible).

MR. ZOLA: So one, it must reflect the County's independent judgment even if the County is the only one taking the action. The second thing that happens -- not the second, but the other thing that happens is let's say we go through the entire Environmental Impact Report. You have a final Environmental Impact Report report that says there are certain impacts that are going to be significant. There is no mitigation measure form. It is less than significant.

In that case, what the law requires is before the County could adopt the project, they must adopt what is called a Statement of Overriding Consideration. That is state law under CEQA. If you look at California Environmental Quality Act, you can see the rules on that.

What it says is if the agency, the lead agency, in this case Los Angeles County, is to accept essentially those significant unavoidable impacts, they must define and make findings as to why they find those impacts acceptable. What are, as the term says, the overriding considerations that may be, what are the benefits that the County is getting that lead to their determination that they are willing to accept those impacts. And that has

to be part of the findings of prior to adopting a project has a significant impact.

THE AUDIENCE: We realize that they've done that on every project. That's why the County has been in such conflict with the community. They do not consider what we consider a major impact.

MR. ZOLA: I've told you what the process is. Yes.

THE AUDIENCE: I'd like to reiterate the independent utility. Would it be more accurate to say we need to determine if the project has independent utilities? Or determine if it is part of the overall project?

MR. ZOLA: Need to define if project has independent utility. Let's say need to determine if the project has independent utility or is part of a larger project. That would be the correct CEQA term.

Yes.

THE AUDIENCE: The justification for this project financially to the County and for the developer and what happens if it doesn't pan out, especially in this economy. Do they just take the building down? Is that land use assumed still by that developer or does it go up for bid, if the

 Barkley Court Reporters

project fails?

MR. ZOLA: I think the question is what is the effect of the approval independent of the actual project development. That I don't know. That will be a question for County staff. What if the project is approved, but not built.

THE AUDIENCE: I'm sure they'll build it, but they're getting an approval for land use. And if they do build it and it doesn't pan out, it's not viable, it's not making the money they need to make. It's not making them money that the County would like to see on that project on that parcel, I'm hoping that that would make the permits void and it would go back to the County, revert back to the County and a bid would come up.

What I don't really understand why a bid isn't being done in the first place, a public bid where the public is there and we're saying from the outset what kinds of thing we would want. But that's not happening.

But going forward, I would imagine that if this project doesn't pan out, I would really hate to see that it's a land wreck. I don't want to see a land grab here.

MR. ZOLA: In the project description where

there is a list of approvals being sought, include disclosure of how permanent are those approvals?

THE AUDIENCE: Yes. And how viable they are financially.

MR. ZOLA: Next limitation of CEQA, financial analysis. So that would be part of it if you would like financial analysis, that's something you'd have to ask the County for. CEQA does not deal with financial impacts.

We've talked about adaptive reuse that was included there. We're way past the time we had. You guys have been great doing this. Go ahead.

THE AUDIENCE: I have a question in the first or second slide of the environmental review process. It talks about the LCP amendment. Will that be part of the draft EIR? Will we see that? I haven't read this. Is it in here?

MR. ZOLA: The description of what those applications are in there, but the actual applications and application package will not be. So what the EIR will do and what that initial study does is describe the applications. The applications are on file at the County Regional Planning.

THE AUDIENCE: So the amendment is part of that?

MR. ZOLA: This is what has been filed with the County and those applications are on file, if you want to review them.

THE AUDIENCE: I'm sorry I didn't really understand if you answered that concern that I had. Will this end up being a land grab? If this project fails, what happens? Do we consider a new land use?

MR. ZOLA: The answer to that is describing essentially the permanency of the approval. There would be certain approvals that at some point would lapse. There are other approvals that would stay. So one of the things that would be described in the project description is how permanent are those approvals. Is some of the amendments to the coastal program, they just stay.

But then the question is what are the rules on if a project is built and abandoned and how did that work and that can be part of the project description.

THE AUDIENCE: Is that going to be put in this report here?

MR. ZOLA: There are three issues that came up later as we went, or earlier part of the discussion. One is that in the aesthetics section we identified requirements for public art. And the

transportation section, ADA requirements on the promenade. Those are the two we missed. We had to get back to.

In the project description identifying grading numbers, queuing of construction vehicles and so on. We've talked about a number of things, mitigation monitoring authority to enforce and who is responsible for what mitigation every day.

With that I'll take the last comments because I know that the hotel wants their room back.

THE AUDIENCE: What would be a part of the deed restrictions if it's not part of the deed restrictions, we can do all the talking and five years later it will get forgotten. There is no way for the community or the County to go after to enforce it and say, Well, from this point forward it's moving forward even if it's in violation of certain things for a number of years.

MR. ZOLA: When the draft EIR comes out and you're reviewing that and you see what mitigation measurements, what requirements are being placed on the project, when there are conditions of approval on the project, that is the point to really request that all of that package and mitigation be made in deed restrictions.

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That goes beyond what the EIR would do, but that would be an implementation of how you make those enforceable. And here we go, you get the last word in.

THE AUDIENCE: It was hiding in plain sight, because all of the things we've seen on these projects so far mention 52 and GG. Your power point has 49M. Is that a sneak attack? What is that? And where is it and why is this the first we are hearing about it?

MR. ZOLA: I actually pulled 49M on the power point right out of this.

THE AUDIENCE: I don't see a map.

MR. ZOLA: 49M, if you're looking at the initial study, general information, redesignate a portion of parcel 49M from parking and public facility. It's included in the initial study.

THE AUDIENCE: Did that go through the regulatory process?

MR. ZOLA: I'm going to wrap up. Here's the thing that is most important. None of these permits have been approved yet. The County cannot approve any of them and staff is not going to make a recommendation on them until the environmental review process goes through.

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The part we're doing now is the review of the Notice of Preparation, the draft EIR and the final EIR. Only then is a final staff report written and public hearing.

So the next opportunity for public input will be in the fall -- well, through the end of next week, comments on the EIR will be accepted at Regional Planning in writing or e-mail. The next one after that will be the public review 45 days of the draft EIR occurring in the fall. If you want notice of that, anybody who signed the sign-in form, or just send the back of the agenda back saying "I want notice."

That will be in the fall, review of the draft EIR, written comments on the draft EIR. Then public hearings at the planning commission at the end of the year, maybe beginning of next year, whenever the planning commission is done in front of the board. So those are the processes from here and I thank you all for coming. Thank you very much.

(The public scoping meeting ended at 9:35 p.m.)

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Appendix D– Air Quality Assessments Prepared by KPC Environmental, Inc. dated July 21, 2009 and June 2010

1. Air Quality Assessment dated June 2010
2. Addendum to April 2008 Air Quality Assessment dated July 2009

Appendix D1
Air Quality Assessment dated June 2010

KPC Environmental, Inc.

AIR QUALITY ASSESSMENT

Boat Central Project – Dry Stack Boat Storage Project
Marina del Rey, California

June 2010

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AIR QUALITY ASSESSMENT

PROJECT: Boat Central – Dry Stack Boat Storage Project Located within Marina del Rey in the Unincorporated region of Los Angeles County, California.

DATE: June, 2010

PREPARED FOR: CEQA Environmental Impact Report, Air Quality Impacts of the Subject Project.

REVIEWED AND SUBMITTED BY:

Kevin P. Carr
Registered Environmental Assessor

Registered Environmental Assessor I
KEVIN P. CARR
REA I-07873
Expires: 6/2010
STATE OF CALIFORNIA

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CO Hotspot Analysis

1.0 Introduction

1.1 Project Description and Location

The proposed project is located in the unincorporated area of the of Los Angeles County known as Marina del Rey. The site is located at 13483 Fiji Way and is in an air quality region known as the South Coast Air Basin (SCAB) under the jurisdiction of the South Coast Air Quality Management District (SCAQMD) for air quality administration.

The proposed project site is designated and zoned as “Specific Plan” by the County of Los Angeles General Plan and is within the Marina del Rey Specific Plan with a designation of Public Facility within the Local Coastal Program.

This air assessment includes the demolition of existing permanent facilities on the proposed project site including: the demolition of 2 existing permanent structures totaling approximately 3,100 square feet, removal of approximately 120,000 square feet of asphalt paving in the existing parking lot, and removal of 5 temporary structures. Additionally, this assessment includes assessing various phasing in the construction of the proposed project which includes: mass site grading and pile operations; fine site grading; trenching & foundation work; building construction consisting of an approximately 48,800 square foot boat dry stack storage facility, 5,300 square feet of general purpose facility for office space, customer lounge, and Sheriff’s Boatwright/Lifeguard Facility.

Although the unique design concept of the Boat Central project utilizing an architectural cladding of translucent polycarbonate material which allows sunlight to penetrate providing a well-lit workplace will theoretically reduce lighting and electrical consumption of the project no calculations of the energy savings or reduction in emissions were performed as part of this assessment as such data could not be properly quantified.

2.0 Air Assessment Description

This assessment is based on guidance contained in the South Coast Air Quality Management Districts CEQA Air Quality Handbook and acceptable environmental practices. Modeling programs including Urban Emissions Model, (URBEMIS 2007, 9.2.4); emissions inventory program, Emfac; and dispersion model, CALINE 4 were utilized to determine the projects air quality impacts on the environment.

The emissions estimates represent a “worst-case,” because they incorporate the assumption that demolition and construction activities occur at the peak daily levels throughout the entire construction period. Data utilized to forecast emissions was obtained from available project data, development plans, and resource material where indicated. The information for the modeling programs used to forecast emissions is based on the project data, resource material, or default values where no data was available.

3.0 Regional Setting

3.1 South Coast Air Basin (SCAB)

Marina del Rey, Los Angeles County is located in the South Coast Air Basin (SCAB). The SCAB's severe air pollution problem is a consequence of the combination of emissions and meteorological conditions which are adverse to the dispersion of those emissions. The summertime maximum mixing height (an index of how well pollutants can be dispersed vertically in the atmosphere) in Southern California averages the lowest in the U.S. the Southern California area is also an area with abundant sunshine, which drives the photochemical reactions, which form pollutants such as ozone.

In the SCAB, high concentrations of ozone are normally recorded during the spring and summer months, while high concentrations of carbon monoxide are generally recorded in late fall and winter. High PM10 and PM2.5 concentrations can occur throughout the year, but occur most frequently in the fall and winter. Although there are changes in emissions by season, the observed variations in the pollutant concentrations are largely a result of seasonal differences in weather conditions.

3.2 Description Of Regional Climate And Its Effect On Air Quality

Section 15125 of the State CEQA Guidelines requires that environmental studies include a description of the environment in the vicinity of the project, as it exists before initiation of the project. The information describing the Environment Setting of the project site includes information on the climate, the existing quality of ambient air at the proposed project site, significant air pollutant sources, both stationary and mobile.

3.2.1 Climate

The climate of the South Coast Air Basin (SCAB) is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean and high mountains forming the remainder to the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The climate of Southern California found in the Marina del Rey area of the SCAB is described as a Mediterranean-type climate characterized by long warm summers and moderate winters with moderate precipitation and a maritime influence giving a marine layer and a temperature inversion layer.

The extent and severity of air pollution problems in the SCAB is a function of both natural physical characteristics of the region (weather patterns, topography) and man-made influences (traffic, development). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the SCAB.

Historical Climate data is collected by the Western Regional Climate Center with the closest monitoring station located at the Los Angeles International Airport. Data collected includes temperature and precipitation.

3.2.2 Temperature

The annual average temperature varies little throughout the SCAB, averaging 62-degrees Fahrenheit, with the Marina del Rey area annual maximum temperature averaging 70.2-degrees and an annual minimum temperature averaging 55.3-degrees Fahrenheit. The average high temperature in the project area is 65.5 degrees Fahrenheit during the winter and 75- degrees Fahrenheit during the summer. Low temperatures can range from around 48.6- degrees during winter nights to 62.2-degrees Fahrenheit during summer nights. For site-specific analysis, temperatures selected represent the lowest average temperature when assessing CO and No_x impacts and the highest average temperature when assessing ROG.

3.2.3 Rainfall

Practically all of the annual rainfall in the SCAB occurs during the November- April period. Summer rainfall normally is restricted to widely scattered thundershowers near the coast and slightly heavier shower activity in the east and over the mountains. Annual average rainfall in the Marina del Rey area is 12.09 inches.

3.2.4 Humidity

Although the SCAB has a semi-arid climate, the air near the surface is surprisingly moist because of the presence of a shallow marine layer on most days. Except for infrequent periods when dry, continental air is brought into the SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent; and low stratus clouds, sometimes referred to as “high fog” are a characteristic climate feature. Annual average relative humidity in the SCAB ranges from 70% coastal to 57% inland.

3.2.5 Wind

Winds play a significant role in the air quality conditions of the SCAB. The area is characterized by light average wind speeds which limit the capability to disperse air contaminates horizontally. The average wind speed in the project area is between 5 and 12 miles per hour (mph) out of the West-Southwest. The dominant daily wind patterns consist of sea breezes during the day with nighttime offshore breezes as the air drains off the mountains that surround the region.

During spring and early summer days, most of the pollution produced on an average day is lifted by the warm air and moved out through the mountain passes. This effectively creates a flushing of the SCAB of pollutants away from the valleys. During the late summer and winter months, this flushing effect is less pronounced due to the lower wind speeds and early off-shore winds. This stagnation causes the pollutants to be trapped in the regions valleys.

3.2.6 Inversions

Vertical dispersion of air pollutants in the SCAB is hindered by the presence of a temperature inversion in the layers of the atmosphere near the earth's surface. The height of the base of the inversion is known as the "mixing height." The mixing height changes under atmospheric conditions while the top end of the inversion remains constant. Usually the mixing height is lower in the morning and increases in altitude as the day progresses. The mixing height presents a barrier to the vertical dispersal of air contaminants. During winter months the inversion normally breaks down by mid morning.

Pollutants generated by both stationary and mobile sources mix with less contaminated air beneath the inversion layer and will become more concentrated unless the inversion breaks down. On days of no inversion layer or when winds average 15 mph or greater, there will be no significant smog effects.

The potential for high concentrations varies with each season. Late spring, summer and early fall, light winds, low mixing height, and increased sunlight combine to produce conditions for the production of photochemical oxidants, e.g. ozone.

When strong inversions are formed on cool winter nights with light winds, carbon monoxide generated by automobile exhaust becomes concentrated. CO values are normally at their highest levels from the period of November through February.

4.0 Air Quality Data for SCAB

4.1 Air Quality Management Planning & Regulatory Setting

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. Table 4-1 contains the federal and state emissions standards with relevant health concerns.

Table 4-1 Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MAJOR SOURCES	MOST RELEVANT EFFECTS
Ozone (O_3)	1 hr - 0.09 ppm 8 hrs - 0.07 ppm	1 hr - * 8 hrs - 0.08 ppm	Motor vehicles, paints, coatings, solvents.	Short-term exposures: Pulmonary function decrements and breathing difficulty. Long-term exposures: Risk to public health, vegetation damage, property damage.
Carbon Monoxide (CO)	1 hr - 20 ppm 8 hrs - 9 ppm	1 hr - 35 ppm 8 hrs - 9 ppm	Internal combustion engines (vehicles).	Aggravation of aspects of coronary heart disease; decreased exercise tolerance in persons w. vascular and lung disease; impairment of CNS functions; possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	Annual Average - 0.03 ppm 1 hr - 0.018 ppm	Annual Average - 0.053 ppm 1 hr - *	Internal combustion engines (vehicles).	Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration.
Sulfur Dioxide (SO_2)	Annual Average - * 1 hr - 0.25 ppm 24 hrs - 0.04 ppm	Annual Average - 0.03 ppm 1 hr - * 24 hrs - 0.14 ppm	Fuel combustion, petroleum refining processes, chemical facilities.	Broncial constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness during exercise or physical activity in persons w. asthma.
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean - 20µg/m3 24 hrs - 50µg/m3	Annual Arithmetic Mean - * 24 hrs - 150µg/m3	Construction, industry, agriculture, vehicles, and natural occurrences (wind, storms)	Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients w/ respiratory disease; declines in pulmonary function especially in children; increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean - 12µg/m3 24 hrs - *	Annual Arithmetic Mean - 15µg/m3 24 hrs - 35µg/m3	Construction, industry, agriculture, vehicles, and natural occurrences (wind, storms)	
Lead (Pb)	Monthly - 1.5µg/m3 Quarterly - *	Monthly - * Quarterly - 1.5µg/m3	Battery manufacturing and recycling. Combustion processes.	Learning disabilities in children; impairment of blood formation and nerve conduction.
Sulfates (SO_4)	24 hrs - 25µg/m3	*	Industrial Processes.	Decrease in ventilatory function; aggravation of asthma symptoms; vegetation damage; degradation of visibility.

Sources – CARB and SCAQMD * - no standard established ppm – parts per million , µg/m3 – micrograms per cubic meter

The South Coast Air Basin (SCAB) could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with airshed designated with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The currently adopted clean air plan for the basin is the 1999 SIP Amendment, which accelerates the schedule for a number if new SCAQMD rules and regulations, approved by the U.S. EPA in 2000. The U.S. EPA has yet to approve the 2003 Air Quality Management Plan (AQMP).

The Air Quality Management District (AQMD) adopted the most recent updates to the clean air "blueprint" in June 2007. The 2007 Air Quality Management Plan (AQMP) provides an outline for achieve reductions in emissions while increasing air quality within the SCAB.

Table 4-2

Regional Criteria Pollutant Attainment Status SCAB		
Pollutant	**State**	**Federal**
Ozone	Extreme Non-attainment	Non-attainment
PM10	Serious Non-attainment	Non-attainment
PM2.5	Non-attainment	Non-attainment
SOx	Attainment	Attainment
CO	Attainment	Attainment
NOx	Attainment	Attainment
Lead	Attainment	Attainment
Other (vinyl chloride, hydrogen sulfide, etc)	Unclassified or Attainment	Unclassified or Attainment

Ozone: The EPA has replaced the one-hour ozone standard with an eight-hour standard set at 0.08 ppm. The new standard accepted by the USEPA includes a calculation where the three highest measurements are disregarded and the fourth highest measurement is averaged over a 3-year period in determining if the standard is met.

PM10 (Course particulate matter): On September 21, 2006 the Federal standard of 50 ug/m3 was replaced with a new 24-hour standard of 150 ug/m3.

PM2.5 (Fine particulate matter): In September 2006 the Federal standard of 65 ug/m3 was reduced to 35 ug/m3 for the new 24-hour standard.

Nitrogen Dioxide: California reduced the NO2 1-hour standard from 0.25 ppm to .18 ppm in February of 2007.

Greenhouse Gases (GHG):

Presently there are no federal regulations on the reduction of Greenhouse Gases (GHG) or to reduce their effects on global climate changes.

In the State of California Assembly Bill 32 (AB32), known as the Global Warming Solutions Act was passed by the state legislature in August of 2006. AB32 requires that levels of GHG be reduced to 1990 levels by the year 2020 and by 80 percent of the 1990 levels by the year 2050.

In order to address GHG emissions and comply with AB32 in General Plans and CEQA documents Senate Bill 97 (SB97) required the State's Governor's Office of Planning and Research (OPR) to develop guidelines for CEQA compliance on how to address GHG emissions along with mitigation measures to reduce project GHG emissions. Guidelines with changes to CEQA 15064.4 Determining the Significance of Greehouse Gas Emissions encourages lead agencies to quantify GHG emissions of proposed projects where possible and recommends that lead agencies consider several other qualitative actors in determining significance including: 1) the extent to which a project may increase or reduce GHG as compared to the existing environmental setting; 2) whether the project emissions exceed a threshold of significance that the lead agency determines is applicable to the project; and 3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

4.2 Regional Air Quality Summary 2006

According to the current data from the South Coast Air Quality Management District (SCAQMD) and the California Air Resource Board (CARB) in 2006, there were a total of 35 days on which the federal standards for 1-hour ozone and 86 days for the 8-hour ozone standard in the SCAB (Basin) locations were exceeded. The number of days exceeding the federal ozone standard varied widely by area, from zero to 59 exceedances, depending on location with the majority of exceedances occurring in the Riverside and San Bernardino County regions. Exceedances were fewer at the coast, increasing to a maximum in the Basin's Central San Bernardino Mountains and inland valleys, and then decreasing further downwind in the Basin's far inland areas. The Perris Valley area exceeded the federal ozone standard most frequently, 50 days. The more stringent state standard was exceeded on 76 days in the same area. The highest 1-hour average and 8-hour average ozone concentration recorded in 2006 (0.18 ppm and 0.142 ppm) were approximately 150% and 178% of the federal 1-hour and 8- hour standards, respectively.

In 2006, carbon monoxide concentrations did not exceed the Federal or State standards in the SCAB. The highest carbon monoxide concentrations were recorded in Orange County and central Los Angeles county areas. The maximum 8-hour average concentration of 6.4 ppm, recorded in South Central Los Angeles County, which is below the federal standard by 3.1 ppm and below the state standard by 2.6 ppm.

The following tables contain the most recently released air quality monitoring data for the area closest to the project site according to the SCAQMD SRA/City Table. Table 4-3 includes the data from station #2 which is located in Northwest Coastal Los Angeles

County. Table 4-4 includes data from station #3 since no collection of PM10 or SO2 were performed at station #3.

The data from the air quality monitoring station SRA #2 in 2006 indicates there were no days on which the Federal 1-hour ozone standards were exceeded however, the State 1-hour standard was exceeded a total of 3-days. The CO concentrations in the Northwest Coastal Los Angeles County region did not exceed federal or state standards.

Table 4-3 Regional Air Quality Summary
Source Receptor Area 2 Years 2004 - 2006

Pollutant	California Standard	Federal Standard	Year	Maximum Measured Concentration	Number of Days samples exceed State/Federal Standards
Carbon Monoxide	**9.0 ppm 8-hour**	**9.5 ppm 8-hour**	**2004 2005 2006**	**4.0 3.0 3.0**	**0/0 0/0 0/0**
Ozone	**0.09 ppm 1-hour**	0.12 ppm 1-hour	**2004 2005 2006**	**0.107 0.114 0.08**	**5/0 7/0 3/0**
Nitrogen Dioxide (NO2)	**0.25 ppm 1-hour**	0.0534 ppm AAM (a)	**2004 2005 2006**	**0.09 0.08 0.08**	**0/0 0/0 0/0**
Sulfur Dioxide (SO2)	**0.25 ppm 1-hour 0.04 ppm 24-hour avg. (b)**	0.03 ppm AAM 0.14 ppm 24-hour avg. 0.50 ppm 3-hour avg. (b)	**2004 2005 2006**	**-- -- --**	**0/0 0/0 0/0**
Fine Particulate Matter (PM-10)	**50 ug/m3 24-hour**	150 ug/m3 24-hour	**2004 2005 2006**	**-- -- --**	**0/0 0/0 0/0**
Fine Particulate Matter (PM-2.5)	**35 ug/m3 24-hour**	**65 ug/m3 (d) 35 ug/m3 24-hour**	**2004 2005 2006**	**-- -- --**	**0/0 0/0 0/0**

ppm - Parts Per Million AAM – Annual Arithmetic Mean --- Pollutant Not Monitored
(a) The federal standard is annual arithmetic mean N)2 greater than 0.0534 ppm.
(b) The state standards are 1-hour average SO2 > 0.03 ppm, 24-hour average > 0.04 ppm, and 3-hour average > 0.05 ppm. The federal standards are annual arithmetic mean SO2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.
(c) Less than 12-months of data available.
(d) Revised Federal standard for PM2.5 from 65 down to 35 ug/m3 effective December 17, 2006.

Table 4-4 Regional Air Quality Summary
Source Receptor Area 3 2004 - 2006

Pollutant	California Standard	Federal Standard	Year	Maximum Measured Concentration	Number of Days samples exceed State/Federal Standards
Carbon Monoxide	9.0 ppm 8-hour	9.5 ppm 8-hour	2004 2005 2006	6.0 (c) 3.0 3.0	0/0 0/0 0/0
Ozone	0.09 ppm 1-hour	0.12 ppm 1-hour	2004 2005 2006	0.069 (c) 0.086 0.066	0/0 0/0 0/0
Nitrogen Dioxide (NO2)	0.25 ppm 1-hour	0.0534 ppm AAM (a)	2004 2005 2006	0.08 (c) 0.09 0.10	0/0 0/0 0/0
Sulfur Dioxide (SO2)	0.25 ppm 1-hour 0.04 ppm 24-hour avg. (b)	0.03 ppm AAM 0.14 ppm 24-hour avg. 0.50 ppm 3-hour avg. (b)	2004 2005 2006	0.03 (c) 0.04 0.02	0/0 0/0 0/0
Fine Particulate Matter (PM-10)	50 ug/m3 24-hour	150 ug/m3 24-hour	2004 2005 2006	52 (c) 44 45	2/0 0/0 0/0
Fine Particulate Matter (PM-2.5)	35 ug/m3 24-hour	65 ug/m3 (d) 35 ug/m3 24-hour	2004 2005 2006	-- -- --	0/0 0/0 0/0

ppm - Parts Per Million AAM – Annual Arithmetic Mean --- Pollutant Not Monitored
(a) The federal standard is annual arithmetic mean N)2 greater than 0.0534 ppm.
(b) The state standards are 1-hour average SO2 > 0.03 ppm, 24-hour average > 0.04 ppm, and 3-hour average > 0.05 ppm. The federal standards are annual arithmetic mean SO2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.
(c) Less than 12-months of data available.
(d) Revised Federal standard for PM2.5 from 65 down to 35 ug/m3 effective December 17, 2006.

4.3 Determining Emission Significance

4.3.1 Emission Significance Thresholds

To identify projects that will adversely affect the regional air quality through direct and indirect sources the SCAQMD has established significance thresholds to determine air quality impacts of a project. The SCAQMD established these significance thresholds, in part, based on Section 182 (e) of the Federal Clean Air Act, which identified levels of volatile organic gases from stationary sources operating in extreme non-attainment regions for ozone at 10 tons per year. The value set by the CAA was converted into threshold levels in pounds per day for the construction and operational phases of a project.

The SCAQMD states that any project located in the South Coast Air Basin (SCAB) having daily emissions from both direct and indirect sources that exceed the emissions thresholds should be considered significant.

To determine whether or not air quality impacts from the proposed project are significant, impacts will be evaluated and compared to the significance criteria in the following table. If impacts equal or exceed any of the following criteria, they will be considered significant.

Table 4-5

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_x	100 lbs/day	55 lbs/day
ROG/VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
PM2.5	55 lbs/day	55 lbs/day

In addition to the significance threshold for NOx, ROG/VOC, PM10, SOx and CO, the California State 1-hour and 8-hour CO standard will be used for determining the existence of CO Hotspots created directly or indirectly by a project. The criteria for CO Hotspots are covered in the CO Hotspot Analysis of this report.

4.3.2 Sensitive Receptors

When considering land uses and population densities in their jurisdiction, local public agencies should be aware of land use compatibility issues, particularly in reference to sensitive receptors. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant than is the population at large. Sensitive receptors and associated facilities that house them in proximity to local CO sources, toxic air contaminants or odors are of particular concern.

Sensitive receptors include the very young, elderly, and persons suffering from illness are normally associated with locations such as schools, day-car facilities, convalescent care facilities, medical facilities, and residential areas and in the case of the proposed project the proximity to the Ballona Wetlands Ecological Reserve, sensitive receptors could include the area wildlife.

Evaluations according to SCAQMD recommendations need to be conducted to ensure that sensitive receptors will not be exposed to localized concentrations of the criteria pollutant carbon monoxide (CO). High levels of CO are associated with traffic congestion in particular slow-moving and idling vehicles. Depending on the existing background concentrations of CO, roadways have the potential to be CO hot spots. Therefore projects with sensitive receptors or projects that could negatively impact levels of service (LOS) should utilize the Emfac 2007 v. 2.3 and CALINE 4 programs to evaluate the effects of vehicle emissions to determine if the project will cause the state 1-hour or 8-hour CO standards to be exceeded, creating a “CO hotspot.”

4.3.3 Additional Indicators

Additional indicators to be considered when screening criteria to evaluate the need for further analysis with respect to air quality can be found in the SCAQMD's CEQA Handbook. The additional indicators noted by the SCAQMD are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation.
- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP.
- Project could generate vehicle trips that cause a CO hot spot.
- Project might have the potential to create or be subjected to objectionable odors that could impact sensitive receptors.
- Project will have hazardous materials onsite and could result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.
- Project could emit an air toxic contaminant regulated by District rules or that is on a federal or state air toxic list.
- Project could involve burning of hazardous, medical, or municipal waste as waste-to-energy facilities.
- Project could be occupied by sensitive receptors within a quarter mile or an existing facility that emits air toxics identified in District Rule 1401 or near CO hot spots.
- Project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.

According to the SCAQMD if the project has significant air quality impacts, an Environmental Impact Report (EIR) should be prepared. If impacts of a project can be reduced to below the emissions significance levels through mitigation, then a Mitigated Negative Declaration (MND) can be prepared. The MND or EIR should use the methods recommended by the SCAQMD and ARB to quantify the levels of emission using the SCAQMD CEQA Handbook, URBEMIS, CALINE, and Emfac. All feasible mitigation measures to reduce emission to the lowest possible level should be identified and applied to the greatest extent possible.

5.0 Air Quality Impact Analysis

Air quality impacts/emissions associated with a project can be placed into two categories, temporary (short-term) or long-term emissions. Temporary (short-term) emissions are generally associated with the demolition, grading, and construction activities of the project while long-term emissions are associated with the day-to-day operation, use, and area emissions from such activities as vehicle use, consumer product use, and energy generation/consumption. Short-term emissions will be covered under section 5.1 Construction Emissions while long-term emissions will be covered under section 5.2 Area and Operational Emissions.

The emissions estimates for the proposed projects present the “worst-case” scenario with limited mitigation included in the modeling and PM-10 (fugitive dust) from mass grading activities calculated at the worst-case level of 38.2 lbs./day instead of the average 10 lbs./day.

The construction schedule is based on 30-days for demolition and 308-days for all construction related activities (mass grading and removal of existing asphalt, fine grading, construction, new paving, and architectural coating) for a total project schedule of approximately 12-months. The emissions calculations assume that the majority of the equipment is operating 5-days per week for 8-hours each day. It is highly unlikely that the majority of the equipment on-site will be operated at this projected schedule producing the calculated emissions each day.

Construction equipment estimates are based on URBEMIS Defaults, SCAQMD LST estimates, similar construction site equipment usage, and project proponent estimates as available. The type and number of equipment chosen for each phase has been selected to present a “worst-case” scenario for construction related emissions.

The area and operations emissions were generated with no mitigation measures to present the “worst-case” scenario for the site’s impact on the local area.

Mitigation measures that shall be employed along with additional mitigation measures that could be employed to further reduce emissions of the construction and operation of the proposed project will be discussed in section 6.2 of this assessment.

5.1 Construction Emissions:

Construction emissions can be distinguished as either onsite or offsite. Onsite emissions generated during construction principally consist of exhaust emissions (CO, ROG/VOC, NO_X, SO_X, PM_{10}, CO_2 and $PM_{2.5}$) from construction equipment, fugitive dust (PM_{10} and $PM_{2.5}$) from grading and excavation, and ROG emissions from asphalt paving and architectural painting. Offsite emissions during construction typically consist of exhaust emissions from truck traffic and worker commute trips; road dust associated with traffic to and from the construction site; and fugitive dust (PM_{10} and $PM_{2.5}$) from trucks hauling materials, construction debris, or excavated soils from the site.

5.1.1 Demolition

Demolition assessment includes 2 structures located at the site with the total demolition equaling approximately 3,100 sq. ft with an estimated total volume of 30,000 cubic feet of material and a daily volume of 7,500 cubic feet.

Demolition was based on a 30 work days period using 6 pieces of heavy equipment, 2 dump trucks, 1 hydraulic hammer, 1 dozer, 1 tractor/loader/backhoes, and 1 rubber tired loader, each operating at 8-hours per day.

Demolition estimates also include the removal of all building material from the site using 20-cubic yard hauling on-road trucks with a 100 mile round trip for disposal.

Table 5-1 contains the demolition emission estimates using the URBEMIS modeling program for the project. All modeled emissions are below the daily SCAQMD thresholds of significance. The highest levels of emissions are from NOx and CO2 emissions generated predominately be as a result of exhaust emissions from heavy equipment operating on the sites. Daily emissions can be reduced by extending the schedule for demolition and employing the mitigation measures in listed in Section 6.4.

Table 5-1 Demolition

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	6.62	6.62	75
NOx	60.43	60.43	100
CO	24.98	24.98	550
PM 10	5.91	5.91	150
SO_2	.02	.02	150
PM 2.5	3.16	3.16	55
CO2	6,808.70	6,808.70	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.1.2 Site Mass Grading Emissions

Mass Grading includes land clearing and grubbing operations and in the case of the proposed project the removal of the existing asphalt parking lot and pile driving operations along the waterfront was included in the emissions estimate for this portion of the site work. Mass Grading estimates in this assessment are based on worst-case PM10 levels at 38.2 lbs/day utilizing a total of 11-pieces of heavy equipment including: 9-pieces of heavy equipment for grading operations and 2 pieces of equipment for pile driving operations. Equipment includes: 1 dozer, 1 dump truck, 1 excavator, 2 scrapers, 1 loader, 1 crane, 1 bore/drill rig (Pile Driver), 1 roller/compactor, 1 street sweeper, and 1 water truck over a period of approximately 30 active work days. Grading was estimated to start in the year 2010 with the entire project site of 3.09 acres being graded and with an estimated daily disturbance of 1- acre / day.

The Mass Grading emissions estimates also include the removal from the site of approximately 28,050 cubic yards of soil and asphalt material from the site for disposal with 47 trips per day using 20-yard on-road trucks traveling 100 miles round trip for disposal purposes.

Table 5-2 contains the site grading emission estimates using the URBEMIS modeling program for the project site. All modeled emissions are below the daily SCAQMD thresholds of significance with the exception of Nox emissions. The resulting NOx emissions generated will predominately be as a result of exhaust emissions from heavy equipment operating on the site and off site hauling/exporting of soil and asphalt material from removal off-site. Daily emissions can be reduced by extending the schedule for grading, decrease equipment operating time, decreasing the total number of heavy equipment operating each day and employing the mitigation measures in listed in Section 6.4.

Table 5-2 Mass Grading

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	22.62	22.62	75
NOx	**<u>246.86</u>**	**<u>246.86</u>**	100
CO	101.19	101.19	550
PM 10	49.41	32.81	150
SO_2	.19	.19	150
PM 2.5	17.89	14.43	55
CO2	30,714.00	30,714.00	N/A

<u>Bold-underline</u> indicates exceedance of SCAQMD Threshold.

5.1.3 Site Fine Grading Emissions

Fine Grading includes work on the site to prepare the ground surface for project construction and achieving final site grade. Fine Grading estimates in this assessment are based on a default URBEMIS scenario with PM10 levels at 20 lbs/acre/day utilizing 4-pieces of heavy equipment including 1 grader, 1 rubber tired dozers, 1 roller/compactor, and 1 water truck over a period of approximately 14 active work days. Fine Grading was estimated to start in the year 2010 with the entire project site of 3.09 acres being part of the fine grading operation and with an estimated daily disturbance of 1 acre / day.

Table 5-3 Fine Grading

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	1.92	1.92	75
NOx	15.79	15.79	100
CO	7.94	7.94	550
PM 10	20.80	12.11	150
SO_2	0.00	0.00	150
PM 2.5	4.91	3.09	55
CO2	1,599.20	1,599.20	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.1.4 Site Trenching/Foundation Emissions

Trenching/Foundation includes work on the site to prepare the site for utilities and foundation/footing work to support the site structures. Trenching estimates in this assessment are based on utilizing 4-pieces of heavy equipment including 2 concrete trucks, 1 roller/compactor, and 1 water truck over a period of approximately 14 active work days.

Table 5-4 Trenching / Foundation

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	5.50	5.50	75
NOx	46.49	46.49	100
CO	20.30	20.30	550
PM 10	2.13	2.13	150
SO_2	0.00	0.00	150
PM 2.5	1.95	1.95	55
CO2	5,238.90	5,238.90	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.1.5 Building Construction Emissions

Building construction includes the actual fabrication of the boat storage facility, customer lounge/offices, and Sheriff's Boatwright/Lifeguard Facility. Building construction estimates were based on utilizing 11 pieces of equipment including: 1 dozer, 1 aerial lifts, 1 concrete truck, 2 cranes, 2 forklifts, 1 excavator, 2 loaders, and 1 street sweeper over a period of approximately 180-days.

Table 5-5 Building Construction

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	9.44	9.44	75
NOx	79.32	79.32	100
CO	43.51	43.51	550
PM 10	3.88	3.88	150
SO_2	0.01	0.01	150
PM 2.5	3.53	3.53	55
CO2	8,774.40	8,774.40	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.1.6 Architectural Coatings

Architectural coatings estimates were based on coatings taking place over a 60-day period using URBEMIS defaults with mitigation for using Low VOC coatings. Additional decreases in ROG (VOC) can be obtained by using High Velocity Low Pressure Applicators (HVLP), and NO VOC coatings, which contain <1g/l VOC. The majority of architectural coatings will be applied as interior paints which would offer the best reduction using Low VOC and No VOC paints. Using Low and No VOC coatings along with HVLP equipment it is estimated would likely reduce the VOC emissions below the calculated mitigated values generated in the URBEMIS model for the proposed projects.

The projects unique design and use of an architectural cladding of translucent polycarbonate material also will decrease the amount of coating operations that will be taking place at the project site both during and after construction.

Table 5-6 Architectural Coatings

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	19.47	19.47	75
NOx	.01	.01	100
CO	0.22	0.22	550
PM 10	0.00	0.00	150
SO_2	0.00	0.00	150
PM 2.5	0.00	0.00	55
CO2	28.20	28.20	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.1.7 Asphalt Emissions

Asphalt estimates are based on utilizing 1 paving unit, 2 rollers, 1 street sweeper, 1 tractor/loader/backhoe, 1 loader, 1 water truck and 2 dump trucks paving 1.13 acres over a 10-day period. No mitigation values were used for the asphalt operations.

All emissions are below the daily SCAQMD thresholds of significance. The levels for ROG are predominately as a result of emissions generated through the architectural coatings and asphalt portions of the building projects. Daily emissions of ROG can be reduced by extending the schedule for construction and employing the mitigation measures in listed in Section 6.4.

Table 5-7 Asphalt

Pollutant	Unmitigated (lbs/day)	Mitigated (lbs/day)	SCAQMD Threshold
ROG	6.96	6.96	75
NOx	54.88	54.88	100
CO	24.47	24.47	550
PM 10	2.79	2.79	150
SO_2	0.00	0.00	150
PM 2.5	2.56	2.56	55
CO2	6,302.50	6,302.50	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

5.2 Construction Impacts

Construction emissions would be below the SCAQMD's significance thresholds for CO ROG, PM10, PM2.5 and SO_X. With an exceedance of Nox during the mass grading phase. Nox could rise above the significance threshold if according to the current planned schedule all building equipment and asphalt equipment were operating at the same time. Nox levels could be reduced by limiting the building construction equipment in use while asphalt operations are taking place. As modeled the predicted emissions for all other categories would be considered to have a less than significant adverse impact during the construction phase of the project. All emissions levels however, can be further lowered through implementation of mitigation measures found in this study. The highest level of emissions from the project will be short-term and cease at the completion of the construction of the project.

PM10 and PM2.5 generated as a result of grading operations can be mitigated to the lowest possible levels by adhering to SCAQMD Rules 402, 403, and 403.1 along with the implementation of mitigation measures recommended in this assessment.

5.3 Area and Operational Emissions:

Data contained herein was obtained from default values for similar projects using the URBEMIS program and includes the calculated values for Area and included traffic values from the Traffic Study conducted by Linscott, Law & Greenspan, Engineers dated February 25, 2008 for Operational Emissions. The Operations Emissions Table 5-8 includes emissions from the day-to-day operation and maintenance of the facilities, consumer product use and from vehicle trips associated with the movement of materials, products, residents, visitors and employees. Area Source emissions include consumer products, natural gas use, and landscaping equipment. URBEMIS default values were used for all proposed sites with no mitigation measures employed in the model.

Table 5-8 Area and Operational

Pollutant	Unmitigated (lbs/day)	SCAQMD Threshold
ROG	3.95	55
NOx	5.11	55
CO	42.13	550
PM10	5.80	150
SO_2	0.03	150
PM 2.5	1.14	55
CO2	4,470.84	N/A

Bold-underline indicates exceedance of SCAQMD Threshold.

The operation of the boat storage facility will include the use of an electrical powered hoist for the movement of boats from the water to the stacked units and back and both the Sheriff's Boatwright/Lifeguard Facility and boat storage facility will conduct cleaning, coating and blasting operations as part of routine boat maintenance.

Coating and blasting operations are currently regulated by the SCAQMD and the facilities will be required to obtain appropriate permits, maintain records and comply with but will not be limited to Rules 1106 Marine Coating Operations, 1106.1 Pleasure Craft Coating Operations, and 1140 Abrasive Blasting.

5.4 CO Hotspot Analysis

The CO Hotspot analysis for this study was performed using intersection modeling comparable to what has been used on similar intersections in Los Angeles and Orange County during previous studies on major intersections in the vicinity of the proposed project.

The intersections included in the separate intersection models include:

1. Admiralty Way at Fiji Way
2. Admiralty Way at Mindanao Way
3. Admiralty Way at Bali Way
4. Lincoln Boulevard at Fiji Way
5. Lincoln Boulevard at Mindanao Way
6. Lincoln Boulevard at Bali Way

The study includes the modeling CO emissions using future project traffic with the existing traffic plus ambient growth plus the proposed project using both the AM and PM peak periods for the year 2011.

An air quality analysis was performed utilizing the Emfac program and traffic values from the Traffic Study conducted by Linscott, Law & Greenspan, Engineers dated February 25, 2008 to determine the emissions factor, and CALINE 4 program to determine the 1-hour concentration of CO using a background CO level of 4 ppm which represents the highest level of CO measured at SRA #2 over the past 3-years to represent a worst-case scenario. The 8-hour concentration was determined using a ratio between the recorded high 1-hour and 8-hour concentrations over a three year period. The calculated ratio is .64. SCAQMD's persistence factor table in the CEQA Handbook indicates that when monitored CO is not available that the persistence factor should be .8. The CO hot spot analysis took into consideration the local traffic network, and the "worst-case" scenario for wind, temperature, and sensitive receptor locations were based on receptor locations utilized in previous environmental studies for the project area and at each intersection corner along the sidewalks/pedestrian areas.

The intersection model is recommended in the CALINE user guide since it takes into account the various speeds and mixes generated at an intersection of interest. Intersections are generally chosen based on the Level of Service, since many of the intersections in the area are at LOS D or better the intersections chosen for the model are the major intersection used in traffic study for this project.

Table 5-9 CO w/ AM Peak Traffic

Intersection	1-Hour	8-Hour
Admiralty Way x Fiji Way	4.9	3.1
Admiralty Way x Mindanao Way	5.2	3.3
Admiralty Way x Bali Way	5.1	3.2
Lincoln Blvd x Fiji Way	6.2	3.9
Lincoln Blvd x Mindanao Way	5.8	3.7
Lincoln Blvd x Bali Way	5.3	3.4
CO State Standard	**20 ppm**	**9 ppm**
# of Exceedances	**0**	**0**

NOTE: only the highest calculated CO level displayed for each intersection.

Table 5-10 CO w/ PM Peak Traffic

Intersection	1-Hour	8-Hour
Admiralty Way x Fiji Way	5.2	3.3
Admiralty Way x Mindanao Way	5.4	3.5
Admiralty Way x Bali Way	5.3	3.4
Lincoln Blvd x Fiji Way	5.9	3.8
Lincoln Blvd x Mindanao Way	5.8	3.7
Lincoln Blvd x Bali Way	5.6	3.6
CO State Standard	**20 ppm**	**9 ppm**
# of Exceedances	**0**	**0**

NOTE: only the highest calculated CO level displayed for each intersection.

5.5 Impacts of Area and Operational Emissions (including CO Hotspot)

The majority of emissions associated with Area and Operational Emissions are generally due to vehicle exhaust emissions. Area and Operational Emissions associated with the project would be below the SCAQMD's significance thresholds for PM10, CO, NOx, ROG, PM2.5 and SOx. As a result regional emissions associated with the combined area and operational emissions for the project would be considered to have a less than significant impact on regional air quality.

Project and area traffic have the potential to create local area air quality impacts such as CO Hotspots. The results of the analysis performed as summarized in Tables 5-10 and 5-11 indicates that no CO Hotspots exist or are created at the study intersections and receptor locations used in the analysis. The results of the analysis indicate a "worst-case" scenario almost zero winds and a background CO concentration of 4 ppm. The background concentration used represents the an average of the highest CO concentrations recorded at Source/Receptor Area #2 located in Northwest Coastal Los Angeles County from the latest 3-years of data released from the AQMD (2004, 2005, 2006). Since the highest level of CO is 6.7 under existing, plus project, plus ambient growth for 2011 traffic conditions no existing or future CO hotspots are forecast to occur at the intersections near the proposed project area as a result from the traffic conditions forecasted with the project and future ambient growth. The Hotspot analysis therefore indicates that the CO concentrations generated by traffic in the area of the projects have a less-than-significant impact.

Operational use of emissions generating equipment will be regulated under the SCAQMD and new sources subject to review prior to use. Permits are required by the SCAQMD prior to construction, installation, or operation unless specifically exempted for all equipment that emits or controls air contaminants.

6.0 Conclusion

6.1 Consistency with the Air Quality Management Plan (AQMP)

The proposed project is in an area covered by a Specific Plan and designated for the type of land use(s) that the project is proposing and would be covered under the County's General Plan. The County requires that the projects conform to population and traffic forecast contained in the current General Plan. General Plan forecasts for development and traffic are used within the AQMP. The AQMP provides a basis for assessing air quality within the South Coast Air Basin (SCAB) and provides for pollutant control strategies and is used in establishing the State Implementation Plan (SIP). The SIP defines how the SCAB will achieve the federal ambient air quality standards. Because the projects are not predicted to increase the population or traffic conditions beyond what is forecast in the General Plan, regional emissions associated with the project are accounted for within the AQMP and are therefore consistent with the AQMP.

6.2 Cumulative Impacts

Completion of the proposed projects in conjunction with growth and development within the SCAB would further hinder achieving conformance with the regional AQMP. Because the SCAB has been classified as a non-attainment air basin for compliance with the Federal Clean Air Act, the proposed projects will have an incremental impact on cumulative air quality conditions. The proposed projects will contribute to exceedances of the SCAQMD's significance thresholds.

Emissions modeling using URBEMIS for the construction of the proposed project indicates that the project emissions should remain below levels of significance for each of the air quality constituents with the exception of Nox emissions during the mass grading phase of the project. The higher level Nox during mass grading emissions would be short-term in duration and cease following the end of the grading phase. Emissions for which the SCAB is currently in non-attainment (Ozone, PM10 and PM2.5) are at levels less than the level of significance and as such the project would not significantly add to the cumulative impacts or increases in the non-attainment criteria pollutants in the SCAB.

6.2.1 Cumulative Climate Change (GHG) Impacts

The SCAQMD recommends that GHG emissions from a regionally significant project be quantified. The proposed project would not be considered regionally significant; however the operation of any project would contribute to climate change through GHG emissions from energy consumption, equipment operation and associated traffic production.

The current state annual GHG emissions are approximately 541,000,000 tons per year, to model the current project URBEMIS defaults were used to present a worst-case scenario including natural gas use and basic landscaping upkeep which would generate 796.20 tons of GHG per year from the proposed project. The GHG emissions generated by the proposed project represents 0.00000147 percent (1.5x10-6) of the state GHG burden and would not contribute significantly to the global or state GHG emissions.

The guidelines submitted by OPR in section 15064.4 Determining the Significance of Greenhouse Gas Emissions also states that "A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

> *(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.*

The proposed project is replacing existing maintenance and Sheriff's Boatwright/Lifeguard facilities on the site which do not conform to current Title 24 standards with new construction which is required to conform to the current Title 24 standards. From this it can be inferred that the newly constructed facilities will have no greater impact on the environment then the existing structures and will more than likely reduce the environmental impact from that of the existing maintenance and Sheriff's Boatwright/Lifeguard facilities being replaced.

Additionally, because the proposed project does not include area and operational emissions from the proposed facilities that would add significantly to the emissions for criteria pollutants the project would be considered as less than significant for operation and is not considered a regionally significant project therefore the impacts of the project on climate change are considered less than cumulatively significant.

6.3 Level of Significance Before Mitigation

As indicated in the impact sections the proposed projects it is projected that the project could generate short term Nox emissions during mass grading and construction phases that exceed the Nox significance thresholds. Long-term area and operational emissions are not projected to exceed significance thresholds. The cumulative air quality impacts with the proposed project are considered less than significant.

6.4 Mitigation Measures:

In addition to the included mitigation measures further reductions in estimated emissions can be achieved by extending the schedule for construction, decreasing the amount of equipment operating on-site each day, and decreasing the number of hours each piece of equipment operates on-site.

Grading/Building Construction: The following mitigation measures are recommended in order to comply with regional rules such as the SCAQMD's Rules 402, 403, and 403.1, which would assist in reducing short-term air pollutant emissions.

• **Air Quality Mitigation Measure (AQ-1)**
During construction, the contractor shall ensure all construction equipment is properly serviced and maintained in good operating condition to reduce emissions. The SCAQMD requires that fuel injection timing be retarded 2 degrees for the manufacture's recommendation and use high-pressure injectors.
• **Air Quality Mitigation Measure (AQ-2)**
During construction, the contractor shall ensure low emission mobile construction equipment is used (replace diesel-powered equipment with gasoline-powered equipment), where feasible, during site preparation, grading, excavation, and construction of the proposed project components.
• **Air Quality Mitigation Measure (AQ-3)**
During construction, the contractor shall ensure proposed project specific sites are watered and that construction trucks pass through a shaker grate to remove excess dirt prior to exiting the site.
• **Air Quality Mitigation Measure (AQ-4)**
During construction, the contractor shall ensure that when soil is transported the operator (1) employs water to moisten earthen surface prior to disturbance and immediately after disturbance; (2) controls runoff so it does not saturate the surface of unpaved haul road and cause track-off; and (3) employs watering as an emergency measure during high wind events to stabilize actively dusting surface including but not limited to soil pile, unpaved road, and unpaved parking areas.
• **Air Quality Mitigation Measure (AQ-5)**
During construction, the contractor shall ensure that water-wetting methods and soil-binders are used on exposed soil stockpiles, unpaved roads, and unpaved parking areas. Active grading areas shall be watered at least two times each workday, as needed, to prevent visible plumes from exiting the project site.
• **Air Quality Mitigation Measure (AQ-6)**
During construction, the contractor shall ensure that during site preparation, grading, excavation and construction, chemical soil stabilizers are applied, according to the manufacturer's specification, to all inactive construction areas, defined as previously graded areas, which are inactive for 96 hours or more.
• **Air Quality Mitigation Measure (AQ-7)**
During construction, the contractor shall ensure groundcover is re-established through seeding and watering on those parts of the Project site that would not be disturbed for lengthy periods, generally defined as two or more months.
• **Air Quality Mitigation Measure (AQ-8)**
During construction, the contractor shall ensure that site preparation, grading, excavation and construction, public streets are swept if silt is deposited on these roads from construction activities within the project site.
• **Air Quality Mitigation Measure (AQ-9)**
During construction, the contractor shall ensure that site preparation, grading, excavation and construction speed limits on unpaved roads are restricted to 15 miles per hour.
• **Air Quality Mitigation Measure (AQ-10)**
During construction, the contractor shall ensure that site preparation, grading, excavation and construction operations are suspended when wind speeds exceed 25 miles per hour.
• **Air Quality Mitigation Measure (AQ-11)**
During construction, the contractor shall ensure that during site preparation, grading, excavation and construction, low sulfur fuel is used for stationary construction equipment.
• **Air Quality Mitigation Measure (AQ-12)**
During construction, the contractor shall ensure that during site preparation, grading, excavation and construction, onsite power sources are used rather than temporary diesel or gasoline ICE generators when feasible.

• **Air Quality Mitigation Measure (AQ-13)**
During construction, the contractor shall ensure that during site preparation, grading, excavation and construction, the contractor will establish a car-pool program for construction employees which will include incentives with the goal of achieving a 1.5 persons per vehicle ridership for this project.
• **Air Quality Mitigation Measure (AQ-14)**
During construction, a lunch shuttle or catering program shall be implemented during site preparation, grading, excavation and construction to reduce the number of lunch time trips to and from the site.

Architectural Coatings and Asphalt:

• **Air Quality Mitigation Measure (AQ-15)**
During construction, low VOC coatings and solvents be used on all structures where feasible.
• **Air Quality Mitigation Measure (AQ-16)**
During construction, low VOC asphalt be used on paved portions of the project site where feasible.

Operational Mitigation Measures:

• **Air Quality Mitigation Measure (AQ-17)**
Idling of delivery trucks shall be kept to a minimum and where feasible idling should be limited to no longer than 5 minutes.
• **Air Quality Mitigation Measure (AQ-18)**
Idling of pleasure craft shall be kept to a minimum and where feasible idling should be limited to no longer than 5 minutes.

Area Mitigation Measures:

CEQA requires that impacts be reduced to the greatest extent feasible; therefore the following additional mitigation measures shall be implemented:

• Air Quality Mitigation Measure (AQ-19)
The off-site intersection traffic signals be synchronized to prevent congestion of traffic flow in the area of the project.

6.5 Level of Significance After Mitigation Implementation

Implementation of the mitigation measures identified in section 6.4 would result in further reductions in PM10 and PM2.5 construction emissions. Long-term emissions associated with the project are not expected to exceed the significance thresholds and implementation of mitigation measures and adherence to SCAQMD rules/regulations would further reduce the impacts of the project on the regions air quality. Project-specific and cumulative air quality impacts are thus projected to remain less than significant with mitigation measures implemented with the exception of Nox estimated emissions during the mass grading phase of the project. Nox emissions however can be reduced by extending the project schedule, reducing the amount of equipment being operated simultaneously on-site during the grading and construction/asphalt phases, reducing the hours of operation for larger pieces of equipment, and limiting idling time to 5-minutes.

References:

1. South Coast Air Quality Management District, (SCAQMD), (2003) Air Quality Management Plan.

2. South Coast Air Quality Management District, (SCAQMD), (2007) Air Quality Management Plan.

3. South Coast Air Quality Management District, (SCAQMD), (1993) CEQA Air Quality Handbook.

4 South Coast Air Quality Management District, (SCAQMD), SRA/City Lookup Tables.

5. Jones & Stokes Associates, (2007) Urban Emissions Model, (URBEMIS) 2007, v. 9.2.4.

6. Emfac 2007 version 2.3, Calculating emission inventories for vehicles in California.

7. CALINE 4 dispersion model.

8. Western Regional Climate Center: www.wrcc.dri.edu

9. NOAA Historical Records Winter Temperature 2000 – 2007.

10. Caltrans CO Protocol Manual.

11. Linscott, Law & Greenspan, Engineers, Traffic Impact Analysis Dry Stack Boat Storage, February 25, 2008.

APPENDIX A

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Owner\Application Data\Urbemis\Version9a\Projects\MDR-Boat Central rev 3-2010.urb924

Project Name: Marina Del Rey Boat Central

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	22.62	246.86	101.19	0.19	38.88	10.54	49.41	8.20	9.69	17.89	30,714.01
2010 TOTALS (lbs/day mitigated)	22.62	246.86	101.19	0.19	22.28	10.54	32.81	4.73	9.69	14.43	30,714.01
2011 TOTALS (lbs/day unmitigated)	35.86	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
2011 TOTALS (lbs/day mitigated)	33.92	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.77	0.90	5.52	0.00	0.01	0.01	1,020.28

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.18	4.21	36.61	0.03	5.79	1.13	3,450.55

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.95	5.11	42.13	0.03	5.80	1.14	4,470.83

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 08/30/10-10/08/10 Active Days: 30	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Demolition 08/30/2010-10/08/2010	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Fugitive Dust	0.00	0.00	0.00	0.00	3.15	0.00	3.15	0.66	0.00	0.66	0.00
Demo Off Road Diesel	5.74	49.53	19.26	0.00	0.00	2.25	2.25	0.00	2.07	2.07	5,150.47
Demo On Road Diesel	0.83	10.81	4.15	0.01	0.05	0.44	0.49	0.02	0.41	0.42	1,471.67
Demo Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 10/11/10-11/19/10 Active Days: 30	22.62	**246.86**	**101.19**	**0.19**	**38.88**	**10.54**	**49.41**	**8.20**	**9.69**	**17.89**	**30,714.01**
Mass Grading 10/11/2010-11/19/2010	22.62	246.86	101.19	0.19	38.88	10.54	49.41	8.20	9.69	17.89	30,714.01
Mass Grading Dust	0.00	0.00	0.00	0.00	38.20	0.00	38.20	7.98	0.00	7.98	0.00
Mass Grading Off Road Diesel	11.35	101.07	42.14	0.00	0.00	4.56	4.56	0.00	4.20	4.20	10,526.30
Mass Grading On Road Diesel	11.17	145.60	55.90	0.19	0.66	5.96	6.62	0.22	5.49	5.70	19,814.52
Mass Grading Worker Trips	0.10	0.19	3.14	0.00	0.02	0.01	0.03	0.01	0.01	0.01	373.18
Time Slice 11/22/10-12/09/10 Active Days: 14	1.92	15.79	7.94	0.00	20.00	0.79	20.80	4.18	0.73	4.91	1,599.22
Fine Grading 11/22/2010-12/09/2010	1.92	15.79	7.94	0.00	20.00	0.79	20.80	4.18	0.73	4.91	1,599.22
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	1.89	15.74	7.16	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,505.93
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30
Time Slice 12/10/10-12/29/10 Active Days: 14	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching 12/10/2010-12/29/2010	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching Off Road Diesel	5.45	46.39	18.72	0.00	0.00	2.11	2.11	0.00	1.95	1.95	5,052.38
Trenching Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59

Time Slice 01/03/11-06/10/11 Active Days: 115	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Time Slice 06/13/11-07/29/11 Active Days: 35	28.90	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 08/01/11-08/12/11 Active Days: 10	**35.86**	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
Asphalt 08/01/2011-08/12/2011	6.96	54.88	24.47	0.00	0.02	2.77	2.79	0.01	2.55	2.56	6,302.58
Paving Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.63	53.97	21.98	0.00	0.00	2.74	2.74	0.00	2.52	2.52	5,905.60
Paving On Road Diesel	0.06	0.77	0.30	0.00	0.00	0.03	0.04	0.00	0.03	0.03	117.15
Paving Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Time Slice 08/15/11-09/02/11 Active Days: 15	28.90	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 09/05/11-09/09/11 Active Days: 5	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18

Phase Assumptions

Phase: Demolition 08/30/10 - 10/08/10 - Demolition of 2 Existing Structures 3,100sf.

Building Volume Total (cubic feet): 30000

Building Volume Daily (cubic feet): 7500

On Road Truck Travel (VMT): 347.22

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 11/22/10 - 12/09/10 - Fine Site Grading/Excavation

Total Acres Disturbed: 3.09

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 10/11/10 - 11/19/10 - Initial Mass Site Grading/Excavation

Total Acres Disturbed: 3.09

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

38.2 lbs per acre-day

On Road Truck Travel (VMT): 4675

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 12/10/10 - 12/29/10 - Foundation & Trenching

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 08/01/11 - 08/12/11 - Paving - asphalt & concrete work

Acres to be Paved: 0.77

Off-Road Equipment:

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 01/03/11 - 09/09/11 - Building Construction

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

2 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

Phase: Architectural Coating 06/13/11 - 09/02/11 - Architectural Coating

Rule: Residential Interior Coatings begins 01/01/05 ends 06/30/08 specifies a VOC of 100

Rule: Residential Interior Coatings begins 07/01/08 ends 12/31/40 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 01/01/05 ends 06/30/08 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 07/01/08 ends 12/31/40 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 01/01/05 ends 12/31/40 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 01/01/05 ends 12/31/40 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 08/30/10-10/08/10 Active Days: 30	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Demolition 08/30/2010-10/08/2010	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Fugitive Dust	0.00	0.00	0.00	0.00	3.15	0.00	3.15	0.66	0.00	0.66	0.00
Demo Off Road Diesel	5.74	49.53	19.26	0.00	0.00	2.25	2.25	0.00	2.07	2.07	5,150.47
Demo On Road Diesel	0.83	10.81	4.15	0.01	0.05	0.44	0.49	0.02	0.41	0.42	1,471.67
Demo Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 10/11/10-11/19/10 Active Days: 30	22.62	**246.86**	**101.19**	**0.19**	22.28	**10.54**	32.81	4.73	**9.69**	14.43	**30,714.01**
Mass Grading 10/11/2010-11/19/2010	22.62	246.86	101.19	0.19	22.28	10.54	32.81	4.73	9.69	14.43	30,714.01
Mass Grading Dust	0.00	0.00	0.00	0.00	21.60	0.00	21.60	4.51	0.00	4.51	0.00
Mass Grading Off Road Diesel	11.35	101.07	42.14	0.00	0.00	4.56	4.56	0.00	4.20	4.20	10,526.30
Mass Grading On Road Diesel	11.17	145.60	55.90	0.19	0.66	5.96	6.62	0.22	5.49	5.70	19,814.52
Mass Grading Worker Trips	0.10	0.19	3.14	0.00	0.02	0.01	0.03	0.01	0.01	0.01	373.18
Time Slice 11/22/10-12/09/10 Active Days: 14	1.92	15.79	7.94	0.00	11.31	0.79	12.11	2.36	0.73	3.09	1,599.22
Fine Grading 11/22/2010-12/09/2010	1.92	15.79	7.94	0.00	11.31	0.79	12.11	2.36	0.73	3.09	1,599.22
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.89	15.74	7.16	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,505.93
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30

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Time Slice 12/10/10-12/29/10 Active Days: 14	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching 12/10/2010-12/29/2010	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching Off Road Diesel	5.45	46.39	18.72	0.00	0.00	2.11	2.11	0.00	1.95	1.95	5,052.38
Trenching Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 01/03/11-06/10/11 Active Days: 115	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Time Slice 06/13/11-07/29/11 Active Days: 35	26.96	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 08/01/11-08/12/11 Active Days: 10	33.92	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
Asphalt 08/01/2011-08/12/2011	6.96	54.88	24.47	0.00	0.02	2.77	2.79	0.01	2.55	2.56	6,302.58
Paving Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.63	53.97	21.98	0.00	0.00	2.74	2.74	0.00	2.52	2.52	5,905.60
Paving On Road Diesel	0.06	0.77	0.30	0.00	0.00	0.03	0.04	0.00	0.03	0.03	117.15
Paving Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Time Slice 08/15/11-09/02/11 Active Days: 15	26.96	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

Time Slice 09/05/11-09/09/11 Active Days: 5	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/22/10 - 12/09/10 - Fine Site Grading/Excavation

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 10/11/10 - 11/19/10 - Initial Mass Site Grading/Excavation

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 06/13/11 - 09/02/11 - Architectural Coating

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.84	0.71	0.00	0.00	0.00	1,012.04
Hearth							
Landscape	0.39	0.06	4.81	0.00	0.01	0.01	8.24
Consumer Products	0.00						
Architectural Coatings	0.32						
TOTALS (lbs/day, unmitigated)	0.77	0.90	5.52	0.00	0.01	0.01	1,020.28

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	2.16	2.73	23.66	0.02	3.75	0.73	2,233.05
Office & Customer Lounge	1.00	1.48	12.92	0.01	2.04	0.40	1,214.99
Sheriff's Boatwright/Lifeguard Facility	0.02	0.00	0.03	0.00	0.00	0.00	2.51
TOTALS (lbs/day, unmitigated)	3.18	4.21	36.61	0.03	5.79	1.13	3,450.55

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

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Analysis Year: 2009 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		4.96	1000 sq ft	48.80	242.05	2,171.90
Office & Customer Lounge		41.50	1000 sq ft	3.07	127.40	1,180.41
Sheriff's Boatwright/Lifeguard Facility		0.10	1000 sq ft	2.63	0.26	2.44
					369.71	3,354.75

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	1.4	98.2	0.4
Light Truck < 3750 lbs	7.4	2.7	93.2	4.1
Light Truck 3751-5750 lbs	22.9	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	71.4	28.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				2.0	1.0	97.0
Office & Customer Lounge				10.0	5.0	85.0
Sheriff's Boatwright/Lifeguard Facility				10.0	5.0	85.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Owner\Application Data\Urbemis\Version9a\Projects\MDR-Boat Central Rev June 2010.urb924

Project Name: Marina Del Rey Boat Central

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.49	5.05	2.09	0.00	0.77	0.22	0.99	0.16	0.20	0.36	610.71
2010 TOTALS (tons/year mitigated)	0.49	5.05	2.09	0.00	0.46	0.22	0.68	0.10	0.20	0.30	610.71
Percent Reduction	0.00	0.00	0.00	0.00	40.16	0.00	31.29	39.84	0.00	17.79	0.00
2011 TOTALS (tons/year unmitigated)	1.47	7.41	4.05	0.00	0.01	0.36	0.36	0.00	0.33	0.33	822.06
2011 TOTALS (tons/year mitigated)	1.41	7.41	4.05	0.00	0.01	0.36	0.36	0.00	0.33	0.33	822.06
Percent Reduction	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.14	0.16	1.01	0.00	0.00	0.00	186.20

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.59	0.82	6.60	0.00	1.06	0.20	610.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.73	0.98	7.61	0.00	1.06	0.20	796.20

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Owner\Application Data\Urbemis\Version9a\Projects\MDR-Boat Central Rev June 2010.urb924

Project Name: Marina Del Rey Boat Central

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	22.62	246.86	101.19	0.19	38.88	10.54	49.41	8.20	9.69	17.89	30,714.01
2010 TOTALS (lbs/day mitigated)	22.62	246.86	101.19	0.19	22.28	10.54	32.81	4.73	9.69	14.43	30,714.01
2011 TOTALS (lbs/day unmitigated)	35.86	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
2011 TOTALS (lbs/day mitigated)	33.92	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.38	0.84	0.71	0.00	0.00	0.00	1,012.04

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.36	5.08	35.34	0.03	5.79	1.13	3,126.32

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.74	5.92	36.05	0.03	5.79	1.13	4,138.36

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 08/30/10-10/08/10 Active Days: 30	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Demolition 08/30/2010-10/08/2010	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Fugitive Dust	0.00	0.00	0.00	0.00	3.15	0.00	3.15	0.66	0.00	0.66	0.00
Demo Off Road Diesel	5.74	49.53	19.26	0.00	0.00	2.25	2.25	0.00	2.07	2.07	5,150.47
Demo On Road Diesel	0.83	10.81	4.15	0.01	0.05	0.44	0.49	0.02	0.41	0.42	1,471.67
Demo Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 10/11/10-11/19/10 Active Days: 30	22.62	**246.86**	**101.19**	**0.19**	**38.88**	**10.54**	**49.41**	**8.20**	**9.69**	**17.89**	**30,714.01**
Mass Grading 10/11/2010-11/19/2010	22.62	246.86	101.19	0.19	38.88	10.54	49.41	8.20	9.69	17.89	30,714.01
Mass Grading Dust	0.00	0.00	0.00	0.00	38.20	0.00	38.20	7.98	0.00	7.98	0.00
Mass Grading Off Road Diesel	11.35	101.07	42.14	0.00	0.00	4.56	4.56	0.00	4.20	4.20	10,526.30
Mass Grading On Road Diesel	11.17	145.60	55.90	0.19	0.66	5.96	6.62	0.22	5.49	5.70	19,814.52
Mass Grading Worker Trips	0.10	0.19	3.14	0.00	0.02	0.01	0.03	0.01	0.01	0.01	373.18
Time Slice 11/22/10-12/09/10 Active Days: 14	1.92	15.79	7.94	0.00	20.00	0.79	20.80	4.18	0.73	4.91	1,599.22
Fine Grading 11/22/2010-12/09/2010	1.92	15.79	7.94	0.00	20.00	0.79	20.80	4.18	0.73	4.91	1,599.22
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	1.89	15.74	7.16	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,505.93
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30
Time Slice 12/10/10-12/29/10 Active Days: 14	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching 12/10/2010-12/29/2010	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching Off Road Diesel	5.45	46.39	18.72	0.00	0.00	2.11	2.11	0.00	1.95	1.95	5,052.38
Trenching Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59

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Time Slice 01/03/11-06/10/11 Active Days: 115	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Time Slice 06/13/11-07/29/11 Active Days: 35	28.90	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

Time Slice 08/01/11-08/12/11 Active Days: 10	**35.86**	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
Asphalt 08/01/2011-08/12/2011	6.96	54.88	24.47	0.00	0.02	2.77	2.79	0.01	2.55	2.56	6,302.58
Paving Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.63	53.97	21.98	0.00	0.00	2.74	2.74	0.00	2.52	2.52	5,905.60
Paving On Road Diesel	0.06	0.77	0.30	0.00	0.00	0.03	0.04	0.00	0.03	0.03	117.15
Paving Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Time Slice 08/15/11-09/02/11 Active Days: 15	28.90	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	19.46	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	19.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 09/05/11-09/09/11 Active Days: 5	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18

Phase Assumptions

Phase: Demolition 08/30/10 - 10/08/10 - Demolition of 2 Existing Structures 3,100sf.

Building Volume Total (cubic feet): 30000

Building Volume Daily (cubic feet): 7500

On Road Truck Travel (VMT): 347.22

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 11/22/10 - 12/09/10 - Fine Site Grading/Excavation

Total Acres Disturbed: 3.09

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 10/11/10 - 11/19/10 - Initial Mass Site Grading/Excavation

Total Acres Disturbed: 3.09

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

38.2 lbs per acre-day

On Road Truck Travel (VMT): 4675

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 12/10/10 - 12/29/10 - Foundation & Trenching

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 08/01/11 - 08/12/11 - Paving - asphalt & concrete work

Acres to be Paved: 0.77

Off-Road Equipment:

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2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 01/03/11 - 09/09/11 - Building Construction

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

2 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

Phase: Architectural Coating 06/13/11 - 09/02/11 - Architectural Coating

Rule: Residential Interior Coatings begins 01/01/05 ends 06/30/08 specifies a VOC of 100

Rule: Residential Interior Coatings begins 07/01/08 ends 12/31/40 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 01/01/05 ends 06/30/08 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 07/01/08 ends 12/31/40 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 01/01/05 ends 12/31/40 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 01/01/05 ends 12/31/40 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 08/30/10-10/08/10 Active Days: 30	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Demolition 08/30/2010-10/08/2010	6.62	60.43	24.98	0.02	3.21	2.70	5.91	0.67	2.48	3.16	6,808.73
Fugitive Dust	0.00	0.00	0.00	0.00	3.15	0.00	3.15	0.66	0.00	0.66	0.00
Demo Off Road Diesel	5.74	49.53	19.26	0.00	0.00	2.25	2.25	0.00	2.07	2.07	5,150.47
Demo On Road Diesel	0.83	10.81	4.15	0.01	0.05	0.44	0.49	0.02	0.41	0.42	1,471.67
Demo Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 10/11/10-11/19/10 Active Days: 30	22.62	**246.86**	**101.19**	**0.19**	22.28	**10.54**	32.81	4.73	**9.69**	14.43	**30,714.01**
Mass Grading 10/11/2010-11/19/2010	22.62	246.86	101.19	0.19	22.28	10.54	32.81	4.73	9.69	14.43	30,714.01
Mass Grading Dust	0.00	0.00	0.00	0.00	21.60	0.00	21.60	4.51	0.00	4.51	0.00
Mass Grading Off Road Diesel	11.35	101.07	42.14	0.00	0.00	4.56	4.56	0.00	4.20	4.20	10,526.30
Mass Grading On Road Diesel	11.17	145.60	55.90	0.19	0.66	5.96	6.62	0.22	5.49	5.70	19,814.52
Mass Grading Worker Trips	0.10	0.19	3.14	0.00	0.02	0.01	0.03	0.01	0.01	0.01	373.18
Time Slice 11/22/10-12/09/10 Active Days: 14	1.92	15.79	7.94	0.00	11.31	0.79	12.11	2.36	0.73	3.09	1,599.22
Fine Grading 11/22/2010-12/09/2010	1.92	15.79	7.94	0.00	11.31	0.79	12.11	2.36	0.73	3.09	1,599.22
Fine Grading Dust	0.00	0.00	0.00	0.00	11.31	0.00	11.31	2.36	0.00	2.36	0.00
Fine Grading Off Road Diesel	1.89	15.74	7.16	0.00	0.00	0.79	0.79	0.00	0.73	0.73	1,505.93
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30

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Time Slice 12/10/10-12/29/10 Active Days: 14	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching 12/10/2010-12/29/2010	5.50	46.49	20.30	0.00	0.01	2.12	2.13	0.00	1.95	1.95	5,238.98
Trenching Off Road Diesel	5.45	46.39	18.72	0.00	0.00	2.11	2.11	0.00	1.95	1.95	5,052.38
Trenching Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 01/03/11-06/10/11 Active Days: 115	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Time Slice 06/13/11-07/29/11 Active Days: 35	26.96	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 08/01/11-08/12/11 Active Days: 10	33.92	134.20	68.21	0.02	0.07	6.60	6.67	0.03	6.07	6.09	15,105.30
Asphalt 08/01/2011-08/12/2011	6.96	54.88	24.47	0.00	0.02	2.77	2.79	0.01	2.55	2.56	6,302.58
Paving Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.63	53.97	21.98	0.00	0.00	2.74	2.74	0.00	2.52	2.52	5,905.60
Paving On Road Diesel	0.06	0.77	0.30	0.00	0.00	0.03	0.04	0.00	0.03	0.03	117.15
Paving Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Time Slice 08/15/11-09/02/11 Active Days: 15	26.96	79.33	43.74	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,802.72
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18
Coating 06/13/2011-09/02/2011	17.52	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24
Architectural Coating	17.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.24

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Time Slice 09/05/11-09/09/11 Active Days: 5	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building 01/03/2011-09/09/2011	9.44	79.32	43.51	0.01	0.06	3.82	3.88	0.02	3.51	3.53	8,774.48
Building Off Road Diesel	8.92	74.69	35.99	0.00	0.00	3.62	3.62	0.00	3.33	3.33	7,359.96
Building Vendor Trips	0.38	4.37	3.17	0.01	0.03	0.18	0.21	0.01	0.16	0.17	859.34
Building Worker Trips	0.13	0.25	4.36	0.01	0.03	0.02	0.04	0.01	0.01	0.02	555.18

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/22/10 - 12/09/10 - Fine Site Grading/Excavation

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 10/11/10 - 11/19/10 - Initial Mass Site Grading/Excavation

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 06/13/11 - 09/02/11 - Architectural Coating

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.84	0.71	0.00	0.00	0.00	1,012.04
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	0.32						
TOTALS (lbs/day, unmitigated)	0.38	0.84	0.71	0.00	0.00	0.00	1,012.04

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Warehouse	2.22	3.29	22.86	0.02	3.75	0.73	2,023.14
Office & Customer Lounge	1.13	1.79	12.45	0.01	2.04	0.40	1,100.91
Sheriff's Boatwright/Lifeguard Facility	0.01	0.00	0.03	0.00	0.00	0.00	2.27
TOTALS (lbs/day, unmitigated)	3.36	5.08	35.34	0.03	5.79	1.13	3,126.32

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

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Analysis Year: 2009 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		4.96	1000 sq ft	48.80	242.05	2,171.90
Office & Customer Lounge		41.50	1000 sq ft	3.07	127.40	1,180.41
Sheriff's Boatwright/Lifeguard Facility		0.10	1000 sq ft	2.63	0.26	2.44
					369.71	3,354.75

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	1.4	98.2	0.4
Light Truck < 3750 lbs	7.4	2.7	93.2	4.1
Light Truck 3751-5750 lbs	22.9	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	71.4	28.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				2.0	1.0	97.0
Office & Customer Lounge				10.0	5.0	85.0
Sheriff's Boatwright/Lifeguard Facility				10.0	5.0	85.0

Operational Changes to Defaults

APPENDIX B

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles
****
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County
Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases   Temperature: 50F Relative
Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.348	0.489	0.883	7.532	3.742	5.699	0.802
8	0.270	0.382	0.686	5.470	2.969	4.863	0.609
12	0.198	0.283	0.502	3.358	2.231	4.042	0.421
16	0.150	0.217	0.380	1.944	1.721	3.463	0.295
22	0.106	0.154	0.264	1.171	1.223	2.909	0.202
27	0.084	0.123	0.205	0.935	0.961	2.653	0.161
35	0.064	0.094	0.151	0.679	0.710	2.531	0.124
40	0.058	0.086	0.133	0.585	0.618	2.617	0.112
45	0.055	0.081	0.123	0.537	0.559	2.839	0.107

Pollutant Name: Carbon Monoxide   Temperature: 50F Relative
Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	4.375	6.395	9.828	24.943	30.111	39.620	6.768
8	3.958	5.748	8.342	20.022	23.057	35.158	5.920
12	3.513	5.063	6.896	15.138	16.687	30.807	5.054
16	3.160	4.526	5.863	11.656	12.532	27.836	4.406
22	2.753	3.917	4.807	8.544	8.741	25.309	3.723
27	2.495	3.538	4.220	7.031	6.898	24.634	3.328
35	2.193	3.105	3.631	5.482	5.321	26.086	2.902
40	2.059	2.921	3.421	4.911	4.874	28.840	2.738
45	1.964	2.796	3.314	4.595	4.726	33.560	2.645

Pollutant Name: Oxides of Nitrogen   Temperature: 50F Relative
Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

5	0.418	0.802	1.366	27.094	36.195	1.324	1.896
8	0.384	0.731	1.258	22.150	30.784	1.328	1.616
12	0.347	0.656	1.145	17.202	25.525	1.339	1.333
16	0.318	0.597	1.060	14.095	21.862	1.356	1.146
22	0.286	0.532	0.973	12.512	18.395	1.390	1.022
27	0.268	0.495	0.927	11.987	16.808	1.425	0.970
35	0.250	0.459	0.896	11.520	16.060	1.493	0.924
40	0.244	0.450	0.899	11.452	16.589	1.541	0.917
45	0.243	0.449	0.918	11.564	17.954	1.594	0.927

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	952.132	1182.760	1712.780	2870.592	2748.559	242.056	1199.387
8	801.304	995.615	1420.034	2568.980	2612.508	218.276	1014.186
12	650.106	808.010	1133.975	2233.302	2487.562	192.546	828.012
16	540.153	671.580	931.104	1959.924	2404.666	172.256	691.998
22	427.765	532.131	728.785	1720.360	2327.727	149.632	555.350
27	366.899	456.609	621.612	1628.853	2289.762	136.329	483.316
35	310.077	386.104	523.371	1523.339	2257.119	123.131	415.420
40	292.934	364.834	494.255	1479.180	2248.077	119.164	394.465
45	287.210	357.731	484.870	1450.447	2245.581	118.287	386.902

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.009	0.011	0.017	0.028	0.027	0.003	0.012
8	0.008	0.010	0.014	0.025	0.025	0.003	0.010
12	0.006	0.008	0.011	0.021	0.024	0.002	0.008
16	0.005	0.007	0.009	0.019	0.023	0.002	0.007
22	0.004	0.005	0.007	0.016	0.022	0.002	0.005
27	0.004	0.004	0.006	0.016	0.022	0.002	0.005
35	0.003	0.004	0.005	0.015	0.022	0.002	0.004
40	0.003	0.004	0.005	0.014	0.022	0.002	0.004
45	0.003	0.003	0.005	0.014	0.021	0.002	0.004

Pollutant Name: PM30 Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.050	0.100	0.105	1.681	0.808	0.058	0.145
8	0.039	0.078	0.082	1.355	0.663	0.050	0.115

12	0.028	0.057	0.060	1.000	0.519	0.042	0.084
16	0.021	0.043	0.046	0.732	0.416	0.037	0.063
22	0.015	0.030	0.032	0.530	0.311	0.031	0.045
27	0.012	0.023	0.025	0.448	0.254	0.029	0.036
35	0.009	0.017	0.019	0.363	0.197	0.028	0.028
40	0.008	0.016	0.017	0.338	0.176	0.029	0.026
45	0.007	0.015	0.016	0.334	0.163	0.031	0.025

Pollutant Name: PM30 - Tire Wear Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.008	0.008	0.009	0.024	0.009	0.004	0.009
8	0.008	0.008	0.009	0.024	0.009	0.004	0.009
12	0.008	0.008	0.009	0.024	0.009	0.004	0.009
16	0.008	0.008	0.009	0.024	0.009	0.004	0.009
22	0.008	0.008	0.009	0.024	0.009	0.004	0.009
27	0.008	0.008	0.009	0.024	0.009	0.004	0.009
35	0.008	0.008	0.009	0.024	0.009	0.004	0.009
40	0.008	0.008	0.009	0.024	0.009	0.004	0.009
45	0.008	0.008	0.009	0.024	0.009	0.004	0.009

Pollutant Name: PM30 - Brake Wear Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.013	0.013	0.013	0.021	0.013	0.006	0.013
8	0.013	0.013	0.013	0.021	0.013	0.006	0.013
12	0.013	0.013	0.013	0.021	0.013	0.006	0.013
16	0.013	0.013	0.013	0.021	0.013	0.006	0.013
22	0.013	0.013	0.013	0.021	0.013	0.006	0.013
27	0.013	0.013	0.013	0.021	0.013	0.006	0.013
35	0.013	0.013	0.013	0.021	0.013	0.006	0.013
40	0.013	0.013	0.013	0.021	0.013	0.006	0.013
45	0.013	0.013	0.013	0.021	0.013	0.006	0.013

Pollutant Name: Gasoline - mi/gal Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	9.235	7.395	5.085	3.361	3.365	27.517	8.196
8	10.969	8.783	6.097	4.320	4.326	30.709	9.735
12	13.513	10.819	7.603	5.856	5.864	34.974	11.995
16	16.256	13.015	9.253	7.663	7.674	39.106	14.433
22	20.515	16.424	11.861	10.739	10.757	44.681	18.222

27	23.911	19.142	13.975	13.392	13.418	48.362	21.245
35	28.291	22.648	16.733	17.007	17.047	51.502	25.142
40	29.954	23.979	17.780	18.385	18.433	51.297	26.615
45	30.564	24.467	18.148	18.810	18.866	49.226	27.143

Pollutant Name: Diesel - mi/gal Temperature: 50F Relative Humidity: 30%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	27.746	28.920	19.592	4.211	3.569	0.000	7.403
8	27.746	28.920	19.592	4.407	3.569	0.000	7.558
12	27.746	28.920	19.592	4.714	3.569	0.000	7.800
16	27.746	28.920	19.592	5.076	3.569	0.000	8.084
22	27.746	28.920	19.592	5.506	3.569	0.000	8.423
27	27.746	28.920	19.592	5.698	3.569	0.000	8.574
35	27.746	28.920	19.592	5.976	3.569	0.000	8.793
40	27.746	28.920	19.592	6.119	3.569	0.000	8.905
45	27.746	28.920	19.592	6.227	3.569	0.000	8.990

Title : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season : Winter
Area : Los Angeles
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Los Angeles County Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Reactive Org Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.116	0.129	0.329	0.896	0.314	2.101	0.207
10	0.191	0.212	0.570	1.166	0.500	2.232	0.322
20	0.331	0.368	1.018	1.679	0.845	2.523	0.538
30	0.459	0.510	1.422	2.155	1.154	2.851	0.734
40	0.574	0.639	1.781	2.593	1.427	3.216	0.912
50	0.677	0.754	2.096	2.993	1.664	3.619	1.070

60	0.763	0.852	2.359	3.294	1.854	3.861	1.200
120	0.899	0.985	2.144	2.339	1.294	2.644	1.213
180	0.585	0.662	1.879	2.496	1.376	2.581	0.930
240	0.620	0.702	1.989	2.649	1.455	2.770	0.986
300	0.654	0.741	2.096	2.799	1.533	2.959	1.040
360	0.687	0.779	2.201	2.945	1.607	3.145	1.093
420	0.720	0.817	2.302	3.088	1.680	3.330	1.145
480	0.752	0.853	2.401	3.227	1.750	3.514	1.196
540	0.783	0.889	2.498	3.363	1.818	3.697	1.245
600	0.813	0.924	2.591	3.495	1.883	3.877	1.294
660	0.843	0.958	2.682	3.623	1.947	4.057	1.341
720	0.872	0.992	2.771	3.748	2.008	4.235	1.386

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	1.050	1.281	3.942	9.761	3.753	5.508	2.065
10	1.899	2.332	7.315	14.661	6.835	6.050	3.590
20	3.511	4.328	13.667	23.890	12.612	7.118	6.474
30	5.006	6.181	19.493	32.359	17.875	8.169	9.134
40	6.383	7.890	24.792	40.066	22.624	9.201	11.569
50	7.644	9.455	29.564	47.012	26.859	10.215	13.780
60	8.787	10.877	33.810	53.197	30.581	11.210	15.768
120	11.630	13.970	26.470	32.498	16.784	11.822	15.769
180	7.087	8.793	21.454	35.383	17.500	10.640	11.386
240	7.538	9.358	22.510	38.079	18.206	12.715	12.092
300	7.952	9.875	23.513	40.588	18.904	14.564	12.748
360	8.329	10.345	24.462	42.909	19.591	16.188	13.351
420	8.669	10.767	25.357	45.041	20.270	17.588	13.903
480	8.971	11.142	26.198	46.986	20.939	18.762	14.403
540	9.236	11.469	26.985	48.743	21.599	19.712	14.852
600	9.464	11.748	27.719	50.312	22.249	20.436	15.249
660	9.655	11.980	28.398	51.692	22.890	20.936	15.595
720	9.808	12.164	29.024	52.885	23.522	21.211	15.889

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.222	0.373	0.979	0.793	0.547	0.240	0.416
10	0.257	0.424	1.218	1.169	0.821	0.273	0.507
20	0.320	0.514	1.639	1.828	1.303	0.331	0.667
30	0.371	0.589	1.985	2.366	1.695	0.380	0.798
40	0.412	0.649	2.255	2.783	1.998	0.421	0.901
50	0.442	0.694	2.450	3.077	2.212	0.452	0.976
60	0.462	0.723	2.570	3.251	2.337	0.474	1.022
120	0.487	0.769	2.685	3.327	2.391	0.488	1.070
180	0.520	0.820	2.723	3.312	2.382	0.481	1.107

240	0.517	0.814	2.706	3.291	2.368	0.468	1.099
300	0.511	0.805	2.680	3.262	2.350	0.453	1.088
360	0.503	0.793	2.646	3.226	2.326	0.435	1.073
420	0.494	0.778	2.605	3.184	2.298	0.413	1.055
480	0.482	0.759	2.555	3.134	2.266	0.388	1.033
540	0.469	0.737	2.497	3.077	2.228	0.361	1.008
600	0.454	0.713	2.432	3.013	2.186	0.330	0.980
660	0.437	0.685	2.358	2.942	2.139	0.296	0.947
720	0.418	0.654	2.276	2.863	2.088	0.259	0.912

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	11.236	14.076	17.632	9.128	3.416	24.279	13.014
10	13.462	16.710	22.675	12.747	5.766	26.859	15.886
20	18.284	22.458	33.223	19.902	10.422	31.890	22.018
30	23.600	28.843	44.391	26.948	15.020	36.750	28.667
40	29.409	35.868	56.177	33.884	19.561	41.437	35.833
50	35.712	43.531	68.581	40.710	24.043	45.953	43.515
60	42.509	51.832	81.604	47.427	28.468	50.297	51.715
120	90.441	111.506	162.990	76.817	47.680	70.341	107.121
180	103.343	127.293	187.621	88.046	55.811	72.410	122.561
240	116.018	142.835	211.520	98.614	63.462	74.360	137.663
300	128.465	158.129	234.686	108.519	70.634	76.191	152.428
360	140.684	173.177	257.119	117.763	77.325	77.902	166.855
420	152.677	187.977	278.819	126.344	83.537	79.494	180.945
480	164.442	202.531	299.786	134.263	89.269	80.966	194.697
540	175.979	216.839	320.021	141.520	94.521	82.319	208.112
600	187.289	230.899	339.522	148.115	99.294	83.552	221.189
660	198.372	244.713	358.291	154.048	103.587	84.667	233.929
720	209.227	258.280	376.327	159.319	107.400	85.661	246.331

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.001	0.001	0.000	0.000	0.000
30	0.000	0.000	0.001	0.001	0.000	0.001	0.000
40	0.000	0.000	0.001	0.001	0.001	0.001	0.001
50	0.000	0.001	0.001	0.001	0.001	0.001	0.001
60	0.001	0.001	0.001	0.001	0.001	0.001	0.001
120	0.001	0.001	0.002	0.001	0.001	0.001	0.001
180	0.001	0.001	0.002	0.001	0.001	0.001	0.001
240	0.001	0.002	0.002	0.002	0.001	0.001	0.002
300	0.001	0.002	0.003	0.002	0.001	0.001	0.002
360	0.001	0.002	0.003	0.002	0.001	0.001	0.002

420	0.002	0.002	0.003	0.002	0.001	0.001	0.002
480	0.002	0.002	0.003	0.002	0.001	0.001	0.002
540	0.002	0.002	0.004	0.002	0.001	0.001	0.002
600	0.002	0.002	0.004	0.002	0.001	0.001	0.002
660	0.002	0.003	0.004	0.002	0.001	0.001	0.003
720	0.002	0.003	0.004	0.002	0.001	0.001	0.003

Pollutant Name: PM30 Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.001	0.001	0.001	0.001	0.000	0.015	0.001
10	0.001	0.002	0.003	0.001	0.001	0.013	0.002
20	0.002	0.004	0.005	0.002	0.001	0.011	0.003
30	0.003	0.006	0.007	0.003	0.002	0.008	0.005
40	0.004	0.008	0.009	0.003	0.003	0.006	0.006
50	0.005	0.010	0.010	0.004	0.003	0.005	0.007
60	0.006	0.011	0.012	0.004	0.003	0.004	0.008
120	0.009	0.017	0.017	0.006	0.005	0.010	0.012
180	0.010	0.018	0.018	0.006	0.005	0.016	0.013
240	0.010	0.020	0.019	0.007	0.005	0.021	0.014
300	0.011	0.021	0.020	0.007	0.005	0.025	0.015
360	0.011	0.022	0.021	0.007	0.005	0.029	0.016
420	0.012	0.023	0.022	0.007	0.005	0.032	0.016
480	0.012	0.023	0.023	0.008	0.006	0.035	0.017
540	0.012	0.024	0.023	0.008	0.006	0.037	0.017
600	0.013	0.025	0.024	0.008	0.006	0.038	0.018
660	0.013	0.025	0.024	0.008	0.006	0.039	0.018
720	0.013	0.025	0.025	0.009	0.006	0.040	0.018

Title : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season : Winter
Area : Los Angeles
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Los Angeles County Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Reactive Org Gases   Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.051	0.049	0.036	0.013	0.038	0.119	0.047
10	0.094	0.091	0.067	0.023	0.069	0.220	0.086
20	0.161	0.156	0.116	0.040	0.118	0.377	0.148
30	0.208	0.201	0.151	0.051	0.151	0.487	0.190
40	0.225	0.218	0.164	0.056	0.164	0.529	0.206

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases   Temperature: ALL   Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.011	0.011	0.009	0.001	0.000	0.012	0.011

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter

Area   : Los Angeles
****
****
Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County
Average

Table 5b: Multi-Day Diurnal Loss Emissions
(grams/hour)

Pollutant Name: Reactive Org Gases   Temperature: ALL   Relative
Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0.001	0.000	0.000	0.001	0.001

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles
****
****
Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County
Average

Table 6a: Partial Day Resting Loss Emissions
(grams/hour)

Pollutant Name: Reactive Org Gases   Temperature: ALL   Relative
Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.009	0.009	0.008	0.001	0.000	0.010	0.008

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table 6b: Multi-Day Resting Loss Emissions (grams/hour)

Pollutant Name: Reactive Org Gases   Temperature: ALL   Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0.001	0.000	0.000	0.001	0.001

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles
****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL   Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.530	0.295	0.125	0.044	0.002	0.005	1.000
%TRIP	0.513	0.264	0.165	0.051	0.000	0.007	1.000
%VEH	0.556	0.286	0.113	0.022	0.001	0.022	1.000

Title   : MDR Boat Central - Emfac 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/05/04 19:43:18
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season   : Winter
Area   : Los Angeles

****

Year: 2010 -- Model Years 1966 to 2010 Inclusive -- Winter
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Los Angeles   County Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Reactive Org Gases   Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.023	0.382	0.340	0.143	0.356	0.074	0.175
2	0.025	0.202	0.180	0.078	0.190	0.112	0.100
3	0.029	0.143	0.129	0.057	0.136	0.133	0.077
4	0.032	0.116	0.104	0.047	0.109	0.146	0.067
5	0.035	0.100	0.090	0.041	0.093	0.155	0.062
10	0.042	0.071	0.065	0.029	0.062	0.182	0.053
15	0.045	0.065	0.060	0.026	0.053	0.200	0.053
20	0.048	0.066	0.061	0.025	0.049	0.215	0.055
25	0.051	0.070	0.065	0.024	0.048	0.228	0.058
30	0.052	0.072	0.067	0.025	0.049	0.235	0.060
35	0.054	0.074	0.069	0.026	0.050	0.241	0.061
40	0.055	0.076	0.070	0.026	0.051	0.247	0.063
45	0.056	0.078	0.072	0.027	0.053	0.253	0.064
50	0.057	0.080	0.074	0.027	0.054	0.257	0.065
55	0.057	0.082	0.075	0.028	0.055	0.259	0.066
60	0.057	0.083	0.077	0.028	0.055	0.261	0.067

APPENDIX C

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Mindanao PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
   U=    .5 M/S            Z0= 100. CM            ALT=     1. (M)
 BRG= WORST CASE           VD=   .0 CM/S
CLAS=     7 (G)            VS=   .0 CM/S
MIXH= 1000. M             AMB=  4.0 PPM
SIGTH=   10. DEGREES      TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	1830	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1735	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1569	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1569	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1626	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1431	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1729	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1729	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	864	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	588	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	690	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	690	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	658	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	658	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	990	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	990	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	95	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	195	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	276	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	191.	5.8	.0	.8	.2	.0	.0	.0	.2	.1
2. Recpt 2	348.	5.8	.0	.3	.6	.0	.0	.2	.0	.0
3. Recpt 3	81.	5.6	.0	.2	.0	.0	.0	.0	.5	.0
4. Recpt 4	170.	5.7	.2	.2	.0	.0	.0	.1	.8	.0

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S
	CONC/LINK (PPM)										
1. Recpt 1	.0	.2	.0	.0	.0	.0	.2	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0
4. Recpt 4	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Bali AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	1010	3.3	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	984	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1221	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1221	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1200	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1030	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1044	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1044	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	314	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	293	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	82	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	82	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	70	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	47	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	247	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	247	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	26	6.8	.0	10.0
R. Admiralty SL	0	150	0	0	AG	170	6.8	.0	10.0
S. Mindanao WL	150	0	0	0	AG	21	6.8	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	23	6.8	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	191.	5.0	.0	.5	.1	.0	.0	.0	.1	.0
2. Recpt 2	350.	5.1	.0	.1	.5	.0	.1	.1	.0	.0
3. Recpt 3	12.	5.0	.0	.0	.2	.0	.0	.4	.2	.0
4. Recpt 4	170.	4.9	.0	.1	.0	.0	.0	.0	.5	.0

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Bali PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	1231	3.3	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1218	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1367	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1367	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1504	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1275	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1336	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1336	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	354	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	306	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	47	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	47	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	93	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	71	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	432	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	432	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	13	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	229	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	48	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	22	8.3	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	5.2	.0	.6	.1	.0	.0	.0	.2	.1
2. Recpt 2	349.	5.3	.0	.2	.6	.0	.1	.2	.0	.0
3. Recpt 3	12.	5.2	.0	.0	.2	.0	.0	.5	.2	.0
4. Recpt 4	170.	5.1	.1	.1	.0	.0	.0	.1	.6	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Fiji AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Admiralty ND	11	0	11	150	AG	610	6.3	.0	15.0
B. Admir NDE	9	150	9	450	AG	610	3.3	.0	12.0
C. Admir SAE	-9	450	-9	150	AG	523	3.3	.0	12.0
D. Admiralty SA	-11	150	-11	0	AG	47	5.1	.0	15.0
E. Fiji WAE	450	7	150	7	AG	727	3.7	.0	12.0
F. Fiji WA	150	9	0	9	AG	727	5.1	.0	15.0
G. Fiji WD	0	9	-150	9	AG	211	5.1	.0	15.0
H. Fiji WDE	-150	7	-450	7	AG	211	3.7	.0	12.0
I. Fiji EAE	-450	-7	-150	-7	AG	162	3.7	.0	12.0
J. Fiji EA	-150	-11	0	-11	AG	115	5.1	.0	15.0
K. Fiji ED	0	-11	150	-11	AG	591	5.1	.0	15.0
L. Fiji EDE	150	-7	450	-7	AG	591	3.7	.0	12.0
M. Admiralty SL	0	150	0	0	AG	476	6.7	.0	10.0
N. Fiji EL	-150	0	0	0	AG	47	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
1. Recpt 1	260.	4.7	.2	.0	.0	.0	.0	.2	.1	.0
2. Recpt 2	351.	4.9	.4	.0	.0	.0	.0	.1	.0	.0

3. Recpt 3	82.	4.5	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	97.	4.9	.1	.0	.0	.0	.0	.4	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N
1. Recpt 1	.0	.0	.0	.0	.1	.0
2. Recpt 2	.0	.0	.2	.0	.1	.0
3. Recpt 3	.0	.0	.3	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Fiji PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Admiralty ND	11	0	11	150	AG	647	6.3	.0	15.0
B. Admir NDE	9	150	9	450	AG	647	3.3	.0	12.0
C. Admir SAE	-9	450	-9	150	AG	851	3.3	.0	12.0
D. Admiralty SA	-11	150	-11	0	AG	77	5.1	.0	15.0
E. Fiji WAE	450	7	150	7	AG	793	3.7	.0	12.0
F. Fiji WA	150	9	0	9	AG	793	5.1	.0	15.0
G. Fiji WD	0	9	-150	9	AG	305	5.1	.0	15.0
H. Fiji WDE	-150	7	-450	7	AG	305	3.7	.0	12.0
I. Fiji EAE	-450	-7	-150	-7	AG	364	3.7	.0	12.0
J. Fiji EA	-150	-11	0	-11	AG	282	5.1	.0	15.0
K. Fiji ED	0	-11	150	-11	AG	1056	5.1	.0	15.0
L. Fiji EDE	150	-7	450	-7	AG	1056	3.7	.0	12.0
M. Admiralty SL	0	150	0	0	AG	774	6.7	.0	10.0
N. Fiji EL	-150	0	0	0	AG	82	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H

1. Recpt 1	260.	4.9	.2	.0	.0	.0	.0	.2	.2	.0
2. Recpt 2	351.	5.2	.4	.0	.0	.0	.0	.1	.0	.0
3. Recpt 3	82.	4.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	98.	5.1	.1	.0	.0	.0	.0	.4	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N
1. Recpt 1	.0	.0	.0	.0	.2	.0
2. Recpt 2	.0	.0	.3	.0	.2	.0
3. Recpt 3	.0	.0	.5	.0	.0	.0
4. Recpt 4	.0	.0	.1	.1	.2	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Mindanao PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	919	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	906	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1080	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1080	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1293	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1282	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1240	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1240	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	674	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	330	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	41	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	41	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	69	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	54	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	594	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	594	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	13	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	401	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	344	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	18	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	5.1	.0	.4	.1	.0	.0	.0	.2	.0
2. Recpt 2	348.	5.4	.0	.1	.4	.0	.0	.2	.0	.0
3. Recpt 3	12.	5.2	.0	.0	.2	.0	.0	.5	.2	.0
4. Recpt 4	99.	5.1	.0	.0	.2	.0	.0	.4	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. Recpt 4	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Bali AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S             Z0= 100. CM            ALT=     1. (M)
   BRG= WORST CASE            VD=   .0 CM/S
  CLAS=     7 (G)             VS=   .0 CM/S
  MIXH= 1000. M              AMB=  4.0 PPM
 SIGTH=   10. DEGREES       TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	1589	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1499	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1685	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1685	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1518	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1506	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1315	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1315	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	11	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	9	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	313	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	313	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	233	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	41	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	28	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	28	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	90	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	12	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	2	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	192	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	5.2	.0	.7	.2	.0	.0	.0	.2	.0
2. Recpt 2	350.	5.3	.0	.2	.7	.0	.1	.2	.0	.0
3. Recpt 3	11.	5.3	.0	.0	.2	.1	.0	.6	.2	.0
4. Recpt 4	169.	5.3	.1	.2	.0	.0	.0	.2	.6	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Bali PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 1. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 4.0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	1566	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1469	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1829	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1829	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	2037	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	2034	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1593	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1593	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	35	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	31	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	362	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	362	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	424	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	83	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	15	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	15	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	97	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	3	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	4	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	341	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	348.	5.4	.0	.0	1.0	.0	.2	.2	.0	.0
2. Recpt 2	349.	5.4	.0	.2	.7	.0	.1	.2	.0	.0
3. Recpt 3	10.	5.6	.0	.0	.2	.1	.0	.8	.2	.0
4. Recpt 4	169.	5.6	.1	.2	.0	.0	.0	.2	.7	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Fiji AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	2192	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1619	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1808	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1808	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1815	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1719	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	2459	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	2459	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	81	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	73	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	740	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	740	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	1041	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	902	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	133	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	133	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	584	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	96	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	8	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	139	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	5.6	.0	.7	.2	.0	.0	.0	.3	.1
2. Recpt 2	279.	5.7	.0	.5	.0	.0	.0	.0	.3	.0
3. Recpt 3	13.	5.9	.0	.0	.3	.0	.0	.7	.4	.0
4. Recpt 4	169.	6.2	.2	.2	.0	.0	.0	.2	1.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0
3. Recpt 3	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.2	.0	.0	.1	.0	.0	.2	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Fiji PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S   Z0= 100. CM   ALT= 1. (M)
BRG= WORST CASE   VD= .0 CM/S
CLAS= 7 (G)   VS= .0 CM/S
MIXH= 1000. M   AMB= 4.0 PPM
SIGTH= 10. DEGREES   TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	2582	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1942	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	2033	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	2033	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1209	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1179	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1620	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1620	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	103	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	38	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	728	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	728	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	549	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	460	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	62	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	62	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	640	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	30	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	65	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	89	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	5.7	.0	.8	.2	.0	.0	.0	.2	.0
2. Recpt 2	193.	5.6	.0	1.0	.0	.0	.0	.0	.2	.1
3. Recpt 3	167.	5.5	.2	.2	.0	.0	.0	.0	.9	.0
4. Recpt 4	169.	5.9	.2	.2	.0	.0	.0	.1	.7	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
4. Recpt 4	.0	.0	.2	.0	.0	.0	.0	.0	.2	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Lincoln x Mindanao AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S              Z0= 100. CM             ALT=     1. (M)
   BRG= WORST CASE             VD=   .0 CM/S
  CLAS=     7 (G)              VS=   .0 CM/S
  MIXH= 1000. M               AMB=  4.0 PPM
 SIGTH=   10. DEGREES        TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	2003	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	1860	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1769	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1769	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1320	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	1196	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	1405	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	1405	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	733	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	545	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	636	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	636	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	536	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	536	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	882	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	882	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	143	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	124	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	188	6.7	.0	10.0

LINK COORDINATES (M)

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

COORDINATES (M)

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	190.	5.8	.0	.8	.2	.0	.0	.0	.2	.1
2. Recpt 2	349.	5.7	.0	.3	.7	.0	.0	.2	.0	.0
3. Recpt 3	81.	5.4	.0	.3	.0	.0	.0	.0	.4	.0
4. Recpt 4	169.	5.5	.2	.2	.0	.0	.0	.1	.6	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S
1. Recpt 1	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0
4. Recpt 4	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Admiralty x Mindanao AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	1. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. AdmiraltyNAE	9	-450	9	-150	AG	650	4.2	.0	12.0
B. Admiralty NA	11	-150	11	0	AG	633	5.1	.0	15.0
C. Admiralty ND	11	0	11	150	AG	1089	5.1	.0	15.0
D. AdmiraltyNDE	9	150	9	450	AG	1089	3.3	.0	12.0
E. AdmiraltySAE	-9	450	-9	150	AG	1114	3.3	.0	12.0
F. Admiralty SA	-11	150	-11	0	AG	580	5.1	.0	15.0
G. Admiralty SD	-11	0	-11	-150	AG	721	5.1	.0	15.0
H. AdmiraltySDE	-9	-150	-9	-450	AG	721	3.3	.0	12.0
I. Mindanao WAE	450	7	150	7	AG	670	3.7	.0	12.0
J. Mindanao WA	150	9	0	9	AG	529	5.1	.0	15.0
K. Mindanao WD	0	9	-150	9	AG	77	5.1	.0	15.0
L. Mindanao WDE	-150	7	-450	7	AG	77	3.7	.0	12.0
M. Mindanao EAE	-450	-7	-150	-7	AG	54	3.7	.0	12.0
N. Mindanao EA	-150	-11	0	-11	AG	43	5.1	.0	15.0
O. Mindanao ED	0	-11	150	-11	AG	601	5.1	.0	15.0
P. Mindanao EDE	150	-7	450	-7	AG	601	3.7	.0	12.0
Q. Admiralty NL	0	-150	0	0	AG	17	6.7	.0	10.0
R. Admiralty SL	0	150	0	0	AG	534	6.7	.0	10.0
S. Mindanao WL	150	0	0	0	AG	141	6.7	.0	10.0
T. Mindanao EL	-150	0	0	0	AG	11	6.7	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	21	17	1.8
2. Recpt 2	21	-21	1.8
3. Recpt 3	-21	-21	1.8
4. Recpt 4	-21	17	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	4.9	.0	.3	.1	.0	.0	.0	.1	.0
2. Recpt 2	350.	5.2	.0	.0	.5	.0	.0	.0	.0	.0
3. Recpt 3	81.	4.8	.0	.0	.0	.0	.0	.0	.2	.0
4. Recpt 4	98.	5.0	.0	.0	.2	.0	.0	.2	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
4. Recpt 4	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0

APPENDIX D

2005 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2005

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide: No. Days of Data	Carbon Monoxide: Max. Conc. in ppm 1-hour	Carbon Monoxide: Max Conc. in ppm 8-hour	Carbon Monoxide: No. Days Standard Exceeded a) Federal ≥ 9.5 ppm 8-hour	Carbon Monoxide: No. Days Standard Exceeded a) State > 9.0 ppm 8-hour	Ozone: No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max. Conc. in ppm 8-hour	Ozone: Fourth High Conc. ppm 8-hour	Ozone: No. Days Standard Exceeded: Health Advisory ≥ 0.15 ppm 1-hour	Ozone: No. Days Standard Exceeded: Federal b) > 0.12 ppm 1-hour	Ozone: No. Days Standard Exceeded: Federal b) > 0.08 ppm 8-hour	Ozone: No. Days Standard Exceeded: State c) > 0.09 ppm 1-hour	Ozone: No. Days Standard Exceeded: State c) > 0.07 ppm 8-hour	Nitrogen Dioxide: No. Days of Data	Nitrogen Dioxide: Max Conc. in ppm 1-hour d)	Nitrogen Dioxide: Annual Average d) AAM Conc. ppm	Sulfur Dioxide: No. Days of Data	Sulfur Dioxide: Max. Conc. in ppm 1-hour e)	Sulfur Dioxide: Max. Conc. in ppm 24-hour e)
LOS ANGELES COUNTY																						
1	Central LA	087	365	4	3.1	0	0	365	0.121	0.098	0.072	0	0	1	2	2	364	0.13	0.0278	357	0.07	0.010
2	Northwest Coastal LA County	091	365	3	2.1	0	0	361	0.114	0.090	0.077	0	0	1	7	5	365	0.08	0.0178	--	--	--
3	Southwest Coastal LA County	820	365	3	2.1	0	0	365	0.086	0.076	0.068	0	0	0	0	1	365	0.09	0.0134	365	0.04	0.012
4	South Coastal LA County 1	072	365	4	3.5	0	0	365	0.091	0.068	0.059	0	0	0	0	0	365	0.14	0.0241	365	0.04	0.010
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	074	350	5	3.5	0	0	365	0.138	0.113	0.098	0	2	12	30	29	365	0.09	0.0202	--	--	--
7	East San Fernando Valley	069	363	4	3.4	0	0	365	0.142	0.108	0.081	0	2	2	13	12	365	0.09	0.0294	361	0.01	0.006
8	West San Gabriel Valley	088	363	4	2.8	0	0	363	0.145	0.114	0.086	1	2	5	13	12	363	0.10	0.0241	--	--	--
9	East San Gabriel Valley 1	060	365	3	1.7	0	0	365	0.145	0.122	0.087	1	4	6	20	14	365	0.09	0.0251	--	--	--
9	East San Gabriel Valley 2	591	358	2	1.9	0	0	363	0.160	0.130	0.099	2	8	13	31	29	360	0.09	0.0224	--	--	--
10	Pomona/Walnut Valley	075	365	4	2.5	0	0	361	0.140	0.112	0.096	0	4	11	26	18	365	0.08	0.0312	--	--	--
11	South San Gabriel Valley	085	113*	3*	2.4*	0*	0*	116*	0.077*	0.065*	0.051*	0*	0*	0*	0*	0*	116*	0.09*	0.0308*	--	--	--
12	South Central LA County	084	365	7	5.9	0	0	365	0.111	0.081	0.063	0	0	0	1	1	360	0.11	0.0312	--	--	--
13	Santa Clarita Valley	090	365	2	1.3	0	0	364	0.173	0.141	0.118	5	11	47	65	69	347	0.087	0.0190	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	365	7	3.1	0	0	365	0.094	0.075	0.067	0	0	0	0	1	361	0.09	0.0249	--	--	--
17	Central Orange County	3176	365	4	3.3	0	0	365	0.095	0.077	0.075	0	0	0	1	4	365	0.09	0.0211	--	--	--
18	North Coastal Orange County	3195	364	5	3.2	0	0	338	0.085	0.073	0.068	0	0	0	0	0	355	0.09	0.0131	359	0.01	0.008
19	Saddleback Valley	3812	365	2	1.6	0	0	365	0.125	0.085	0.078	0	1	1	3	6	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	363	3	2.5	0	0	358	0.144	0.129	0.105	0	3	33	46	62	365	0.08	0.0222	365	0.02	0.011
23	Metropolitan Riverside County 2	4146	365	4	2.4	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Mira Loma	5212	362	3	2.1	0	0	358	0.135	0.116	0.105	0	3	25	34	51	346	0.08	0.0160	--	--	--
24	Perris Valley	4149	--	--	--	--	--	365	0.126	0.103	0.082	0	1	3	11	18	--	--	--	--	--	--
25	Lake Elsinore	4158	365	2	1.0	0	0	365	0.149	0.119	0.097	1	4	15	37	46	365	0.07	0.0142	--	--	--
29	Banning Airport	4164	--	--	--	--	--	359	0.144	0.132	0.119	0	10	39	47	66	329	0.07	0.0148	--	--	--
30	Coachella Valley 1**	4137	364	2	0.8	0	0	363	0.139	0.116	0.108	0	4	35	41	63	352	0.10	0.0120	--	--	--
30	Coachella Valley 2**	4157	--	--	--	--	--	365	0.114	0.095	0.092	0	0	18	18	36	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	364	3	1.8	0	0	365	0.149	0.121	0.101	1	8	15	34	34	364	0.10	0.0313	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	365	3	2.1	0	0	355	0.150	0.128	0.113	2	9	23	49	47	361	0.10	0.0310	365	0.01	0.004
34	Central San Bernardino Valley 2	5203	356	4	2.4	0	0	361	0.163	0.129	0.114	4	9	31	54	58	361	0.0.08	0.0259	--	--	--
35	East San Bernardino Valley	5204	--	--	--	--	--	364	0.146	0.123	0.113	1	6	24	36	45	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	--	--	354	0.182	0.145	0.130	7	18	69	80	102	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM				7	5.9	0	0		0.182	0.145	0.130	7	18	69	80	102		0.14	0.0313		0.07	0.012
SOUTH COAST AIR BASIN				7	5.9	0	0		0.182	0.145	0.130	11	30	84	102	120		0.14	0.0313		0.07	0.012

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 1-hour standard (1-hour average CO > 35 ppm) and state 1-hour standard (1-hour average CO > 20 ppm) were not exceeded. For comparison of data with the federal 8-hour CO standard (9 ppm), 8-hour averages with one decimal place should be rounded to integers.

b) – The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2004.

c) - Air Resources Board has established a new 8-hour average California ozone standard of 0.07 ppm effective May 17, 2005.

d) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm.

e) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2005 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2005

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 f): No. Days of Data	PM10: Max. Conc. in $\mu g/m^3$ 24-hour	PM10: No. (%) Samples Exceeding Standard: Federal > 150 $\mu g/m^3$ 24-hour	PM10: No. (%) Samples Exceeding Standard: State > 50 $\mu g/m^3$ 24-hour	PM10: Annual Average i) AAM Conc. $\mu g/m^3$	Suspended Particulates PM2.5 g): No. Days of Data	PM2.5: Max. Conc. in $\mu g/m^3$ 24-hour	PM2.5: 98th Percentile Conc. in $\mu g/m^3$ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal > 65 $\mu g/m^3$ 24-hour	PM2.5: Annual Averages j) AAM Conc. $\mu g/m^3$	Particulates TSP h): No. Days of Data	TSP: Max. Conc. in $\mu g/m^3$ 24-hour	TSP: Annual Average AAM Conc. $\mu g/m^3$	Lead h): Max. Monthly Average Conc. k) $\mu g/m^3$	Lead: Max. Quarterly Average Conc. k) $\mu g/m^3$	Sulfate h): Max. Conc. in $\mu g/m^3$ 24-hour	Sulfate: No. (%) Samples Exceeding Standard: State ≥ 25 $\mu g/m^3$ 24-hour
LOS ANGELES COUNTY																			
1	Central LA	087	61	70	0	4(6.6)	29.6	334	73.7	53.2	2(0.6)	18.1	66	141	66.7	0.02	0.02	14.2	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	59	89	41.6	--	--	11.7	0
3	Southwest Coastal LA County 2	820	54	44	0	0	22.9	--	--	--	--	--	--	--	--	--	--	--	--
4	South Coastal LA County 1	072	59	66	0	5(8.5)	29.6	324	53.9	41.4	0	16.0	61	112	55.5	0.01	0.01	16.8	0
4	South Coastal LA County 2	077	59	131	0	18(30.5)	43.4	344	50.8	37.8	0	14.7	--	--	--	--	--	--	--
6	West San Fernando Valley	074	--	--	--	--	--	104	39.6	35.8	0	13.9	--	--	--	--	--	--	--
7	East San Fernando Valley	069	61	92	0	5(8.2)	34.3	106	63.2	50.6	0	17.9	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	62.9	43.1	0	15.1	58	89	44.6	--	--	11.2	0
9	East San Gabriel Valley 1	060	55	76	0	12(21.8)	35.1	292*	132.7*	53.2*	1(0.3)*	17.0*	58	142	70.9	--	--	10.2	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	76*	58.2*	54.0*	0*	17.0*	39*	104*	66.4*	0.03	0.03	9.9	0
12	South Central LA County	084	--	--	--	--	--	114	54.6	48.5	0	17.5	57	118	67.4	0.03	0.02	17.3	0
13	Santa Clarita Valley	090	60	55	0	1(1.7)	25.8	--	--	--	--	--	--	--	--	--	--	--	--
ORANGE COUNTY																			
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	61	65	0	3(4.9)	28.2	333	54.7	41.9	0	14.7	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	55	41	0	0	19.0	113	35.4	31.4	0	10.7	--	--	--	--	--	--	--
RIVERSIDE COUNTY																			
22	Norco/Corona	4155	58	79	0	5(8.6)	31.6	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	123	123	0	69(56.1)	52.0	334	98.7	58.4	4(1.2)	21.0	59	173	96.7	0.02	0.02	10.3	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	110	95.0	41.0	1(0.9)	18.0	60	125	75.8	0.01	0.01	10.3	0
23	Mira Loma	5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Perris Valley	4149	60	80	0	19(31.7)	39.2	--	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	58	76	0	2(3.4)	26.6	--	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	59	66	0	2(3.4)	25.9	83*	26.2*	25.0*	0*	8.4*	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	115	106	0	39(34.2)	45.7	104	44.4	25.0	0	10.5	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																			
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	57	94	53.4	0.02	0.02	8.4	0
33	Southwest San Bernardino Valley	5817	60	74	0	19(31.7)	40.8	110	87.8	49.6	1(0.9)	18.8	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	60	108	0	29(48.3)	50.0	109	96.8	48.2	1(0.9)	18.9	61	295	100.2	--	--	10.4	0
34	Central San Bernardino Valley 2	5203	60	72	0	23(38.3)	42.3	109	106.3	43.4	1(0.9)	17.4	60	175	87.1	0.02	0.01	10.9	0
35	East San Bernardino Valley	5204	58	61	0	12(20.7)	33.2	--	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	56	49	0	0	25.8	--	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	51	38.8	38.8	0	12.1	--	--	--	--	--	--	--
DISTRICT MAXIMUM				131	0	69	52.0		132.7	58.4	4	21.0		295	100.2	0.03	0.03	17.3	0
SOUTH COAST AIR BASIN				131	0	89	52.0		132.7	58.4	6	21.0		295	100.2	0.03	0.03	17.3	0

$\mu g/m^3$ - Micrograms per cubic meter of air. AAM - Annual Arithmetic Mean AGM – Annual Geometric Mean -- - Pollutant not monitored.
* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

f) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.

g) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.

h) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.

i) - Federal PM10 standard is annual average (AAM) > 50 $\mu g/m^3$. State standard is annual average (AAM) > 20 $\mu g/m^3$ (changed from AGM > 30 $\mu g/m^3$, effective July 5, 2003).

j) - Federal PM2.5 standard is annual average (AAM) > 15 $\mu g/m^3$. State standard is annual average (AAM) > 12 $\mu g/m^3$ (state standard was established on July 5, 2003).

k) - Federal lead standard is quarterly average > 1.5 $\mu g/m^3$; and state standard is monthly average ≥ 1.5 $\mu g/m^3$. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.44 $\mu g/m^3$ and 0.34 $\mu g/m^3$, respectively, both recorded at Central Los Angeles.

2004 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2004

Source/Receptor Area No.	Location	Station No.	CO: No. Days of Data	CO: Max. Conc. in ppm 1-hour	CO: Max Conc. in ppm 8-hour	CO: No. Days Standard Exceeded a) Federal ≥ 9.5 ppm 8-hour	CO: No. Days Standard Exceeded a) State > 9.0 ppm 8-hour	Ozone: No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max. Conc. in ppm 8-hour	Ozone: Fourth High Conc. ppm 8-hour	Ozone: No. Days Standard Exceeded Health Advisory ≥ 0.15 ppm 1-hour	Ozone: Federal > 0.12 ppm 1-hour	Ozone: Federal > 0.08 ppm 8-hour	Ozone: State b) > 0.09 ppm 1-hour	Ozone: State b) > 0.07 ppm 8-hour	NO2: No. Days of Data	NO2: Max Conc. in ppm 1-hour c)	NO2: Annual Average c) AAM Conc. ppm	SO2: No. Days of Data	SO2: Max. Conc. in ppm 1-hour d)	SO2: Max. Conc. in ppm 24-hour d)
LOS ANGELES COUNTY																						
1	Central LA	087	361	4	3.2	0	0	366	0.110	0.092	0.079	0	0	1	7	7	359	0.16	0.0328	364	0.08	0.015
2	Northwest Coastal LA County	091	360	4	2.3	0	0	366	0.107	0.089	0.078	0	0	1	5	6	355	0.09	0.0198	--	--	--
3	Southwest Coastal LA County 1	094	90*	6*	4.4*	0*	0*	90*	0.069*	0.060*	0.056*	0*	0*	0*	0*	0*	89*	0.08*	0.0310*	89*	0.03*	0.004*
3	Southwest Coastal LA County 2	820	260*	4*	3.0*	0*	0*	262*	0.120*	0.100*	0.086*	0*	0*	4*	4*	13*	230*	0.09*	0.0136*	261*	0.02*	0.007*
4	South Coastal LA County 1	072	366	4	3.4	0	0	366	0.090	0.075	0.071	0	0	0	0	0	356	0.12	0.0280	361	0.04	0.012
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--
6	West San Fernando Valley	074	366	5	3.5	0	0	366	0.131	0.116	0.102	0	2	29	54	65	365	0.08	0.0214	--	--	--
7	East San Fernando Valley	069	366	5	3.7	0	0	366	0.137	0.109	0.089	0	2	7	27	37	356	0.12	0.0332	348	0.02	0.010
8	West San Gabriel Valley	088	361	7	3.4	0	0	365	0.130	0.103	0.093	0	1	9	27	31	355	0.12	0.0270	--	--	--
9	East San Gabriel Valley 1	060	366	3	2.0	0	0	366	0.134	0.104	0.094	0	2	10	28	26	351	0.10	0.0204	--	--	--
9	East San Gabriel Valley 2	591	361	2	2.0	0	0	366	0.134	0.108	0.095	0	4	16	42	35	353	0.12	0.0240	--	--	--
10	Pomona/Walnut Valley	075	366	4	3.1	0	0	366	0.131	0.102	0.097	0	4	13	31	25	364	0.11	0.0314	--	--	--
11	South San Gabriel Valley	085	366	5	3.6	0	0	366	0.104	0.084	0.080	0	0	0	7	7	353	0.12	0.0305	--	--	--
12	South Central LA County	084	366	10	6.7	0	0	366	0.084	0.072	0.065	0	0	0	0	0	362	0.10	0.0301	--	--	--
13	Santa Clarita Valley	090	363	5	3.7	0	0	360	0.158	0.133	0.108	1	13	52	69	81	358	0.09	0.0204	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	364	7	4.0	0	0	364	0.099	0.080	0.078	0	0	0	6	6	341	0.12	0.0252	--	--	--
17	Central Orange County	3176	366	5	4.1	0	0	366	0.120	0.097	0.088	0	0	6	14	35	361	0.12	0.0199	--	--	--
18	North Coastal Orange County	3195	366	5	4.1	0	0	366	0.104	0.087	0.076	0	0	1	2	5	357	0.10	0.0151	364	0.03	0.008
19	Saddleback Valley	3812	366	2	1.6	0	0	366	0.116	0.089	0.086	0	0	2	11	20	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	364	4	3.0	0	0	366	0.141	0.117	0.112	0	8	35	59	75	363	0.09	0.0172	331	0.02	0.015
23	Metropolitan Riverside County 2	4146	366	4	2.1	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Perris Valley	4149	--	--	--	--	--	365	0.128	0.103	0.097	0	2	19	37	47	--	--	--	--	--	--
25	Lake Elsinore	4158	353	2	0.9	0	0	353	0.130	0.116	0.103	0	2	21	41	51	339	0.06	0.0151	--	--	--
29	Banning Airport	4164	--	--	--	--	--	349	0.156	0.116	0.112	1	7	40	49	69	334	0.08	0.0165	--	--	--
30	Coachella Valley 1**	4137	366	2	1.0	0	0	366	0.125	0.108	0.099	0	1	31	36	55	353	0.07	0.0130	--	--	--
30	Coachella Valley 2**	4157	--	--	--	--	--	366	0.111	0.102	0.098	0	0	18	23	51	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	366	3	2.1	0	0	366	0.138	0.105	0.103	0	2	18	31	31	365	0.11	0.0305	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	313*	3*	2.1*	0*	0*	366	0.149	0.123	0.112	0	7	28	48	54	346	0.06	0.0273	360	0.01	0.006
34	Central San Bernardino Valley 2	5203	366	4	3.3	0	0	366	0.157	0.130	0.113	1	9	38	55	58	363	0.12	0.0261	--	--	--
35	East San Bernardino Valley	5204	--	--	--	--	--	366	0.160	0.137	0.122	1	12	53	75	76	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	--	--	364	0.163	0.145	0.124	1	9	66	75	96	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM				10	6.7	0	0		0.163	0.145	0.124	1	13	66	75	96		0.16	0.0332		0.08	0.015
SOUTH COAST AIR BASIN				10	6.7	0	0		0.163	0.148	0.124	4	28	90	111	148		0.16	0.0332		0.08	0.015

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.
* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 1-hour standard (1-hour average CO > 35 ppm) and state 1-hour standard (1-hour average CO > 20 ppm) were not exceeded.

b) - On April 28, 2005, Air Resources Board has approved revising the California Ozone standard to establish a new 8-hour average standard of 0.07 ppm. The new 8-hour standard is expected to take effect by December 2005.

c) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm. No location exceeded the standards.

d) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm. No location exceeded SO_2 standards.

AQMD

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2004 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2004

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e): No. Days of Data	PM10: Max. Conc. in µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: Federal > 150 µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: State > 50 µg/m³ 24-hour	PM10: Annual Average h) AAM Conc. µg/m³	Suspended Particulates PM2.5 f): No. Days of Data	PM2.5: Max. Conc. in µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal > 65 µg/m³ 24-hour	PM2.5: Annual Averages i) AAM Conc. µg/m³	Particulates TSP g): No. Days of Data	TSP: Max. Conc. in µg/m³ 24-hour	TSP: Annual Average AAM Conc. µg/m³	Lead g): Max. Monthly Average Conc. j) µg/m³	Lead: Max. Quarterly Average Conc. j) µg/m³	Sulfate g): Max. Conc. in µg/m³ 24-hour	Sulfate: No. (%) Samples Exceeding Standard: State ≥ 25 µg/m³ 24-hour
LOS ANGELES COUNTY																		
1	Central LA	087	61	72	0	5(8.2)	32.7	318	75.0	2(0.6)	19.6	62	115	66.4	0.03	0.03	12.7	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	59	79	46.8	--	--	11.4	0
3	Southwest Coastal LA County 1	094	15*	52*	0*	2(13.3)*	30.9*	--	--	--	--	15*	71*	50.5*	0.01	0.01	13.1	0
3	Southwest Coastal LA County 2	820	37*	47*	0*	0*	25.1	--	--	--	--	45*	77*	43.8*	0.01	0.01	14.3	0
4	South Coastal LA County 1	072	60	72	0	4(6.7)	33.1	323	66.6	1(0.3)	17.6	62	103	59.1	0.02	0.01	15.9	0
4	South Coastal LA County 2	077	59	83	0	12(20.3)	38.1	327	59.7	0	16.6	59	112	64.2	0.02	0.01	16.4	0
6	West San Fernando Valley	074	--	--	--	--	--	106	56.2	0	15.6	--	--	--	--	--	--	--
7	East San Fernando Valley	069	60	74	0	7(11.7)	37.5	109	60.1	0	19.2	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	59.4	0	16.6	58	95	49.5	--	--	11.2	0
9	East San Gabriel Valley 1	060	55	83	0	8(14.5)	35.4	279	75.6	1(0.4)	18.4	59	156	75.2	--	--	10.6	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	108	60.7	0	19.9	55	140	73.0	0.03	0.02	12.4	0
12	South Central LA County	084	--	--	--	--	--	115	55.8	0	18.5	58	128	78.6	0.03	0.03	14.7	0
13	Santa Clarita Valley	090	60	54	0	2(3.3)	28.1	--	--	--	--	--	--	--	--	--	--	--
ORANGE COUNTY																		
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	61	74	0	7(11.5)	34.1	319	58.9	0	16.8	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	57	47	0	0	23.7	111	49.4	0	12.1	--	--	--	--	--	--	--
RIVERSIDE COUNTY																		
22	Norco/Corona	4155	57	76	0	11(19.3)	38.0	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	119	137	0	72(60.5)	55.5	342	91.7	5(1.5)	22.1	60	199	100.5	0.02	0.01	9.8	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	110	93.8	2(1.8)	20.8	59	244	81.9	0.01	0.01	9.1	0
24	Perris Valley	4149	59	83	0	15(25.4)	41.4	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	61	82	0	7(11.5)	29.3	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	59	79	0	2(3.4)	26.4	112	27.1	0	9.0	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	118+	83+	0+	23(19.5)+	39.3+	110	28.5	0	10.7	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																		
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	55	127	63.5	0.02	0.01	9.2	0
33	Southwest San Bernardino Valley	5817	58	93	0	17(29.3)	42.8	112	86.1	2(1.8)	20.9	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	61	106	0	29(47.5)	47.7	104	71.4	1(1.0)	20.0	59	235	113.4	--	--	10.8	0
34	Central San Bernardino Valley 2	5203	58	118	0	28(48.3)	48.6	106	93.4	4(3.8)	22.0	58	179	92.7	0.02	0.01	9.6	0
35	East San Bernardino Valley	5204	60	88	0	20(33.3)	38.6	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	57	52	0	1(1.8)	26.4	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	52	28.6	0	9.5	--	--	--			--	--
DISTRICT MAXIMUM				137	0	72	55.5		93.8	5	22.1		244	113.4	0.03	0.03	16.4	0
SOUTH COAST AIR BASIN				137	0	81	55.5		93.8	7	22.1		244	113.4	0.03	0.03	16.4	0

µg/m³ - Micrograms per cubic meter of air. AAM - Annual Arithmetic Mean -- - Pollutant not monitored.
* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.
e) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.
f) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.
g) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.
h) - Federal PM10 standard is annual average (AAM) > 50 µg/m³. State standard is annual average (AAM) > 20 µg/m³ (changed from AGM > 30 µg/m³, effective July 5, 2003).
i) - Federal PM2.5 standard is annual average (AAM) > 15 µg/m³. State standard is annual average (AAM) > 12 µg/m³ (state standard was established on July 5, 2003).
j) - Federal lead standard is quarterly average > 1.5 µg/m³; and state standard is monthly average ≥ 1.5 µg/m³. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.59 µg/m³ and 0.30 µg/m³, respectively, both recorded at Southeast Los Angeles County.
\+ - The data for the sample collected on a high-wind day (161 µg/m³ on 10/9/04) was excluded in accordance with EPA's Natural Events Policy.

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2006 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2006

Source/Receptor Area No.	Location	Station No.	Carbon Monoxide a): No. Days of Data	CO: Max. Conc. in ppm 1-hour	CO: Max Conc. in ppm 8-hour	Ozone b): No. Days of Data	Ozone: Max. Conc. in ppm 1-hour	Ozone: Max. Conc. in ppm 8-hour	Ozone: Fourth High Conc. ppm 8-hour	No. Days Standard Exceeded: Health Advisory ≥ 0.15 ppm 1-hour	Federal > 0.12 ppm 1-hour	Federal > 0.08 ppm 8-hour	State > 0.09 ppm 1-hour	State > 0.07 ppm 8-hour	Nitrogen Dioxide c): No. Days of Data	NO2: Max Conc. in ppm 1-hour	NO2: Max Conc. in ppm 24-hour	NO2: Annual Average AAM Conc. ppm	Sulfur Dioxide d): No. Days of Data	SO2: Max. Conc. in ppm 1-hour	SO2: Max. Conc. in ppm 24-hour	SO2: Annual Average AAM Conc. ppm
LOS ANGELES COUNTY																						
1	Central LA	087	362	3	2.6	362	0.11	0.079	0.077	0	0	0	8	4	360	0.11	0.06	0.0288	365	0.03	0.006	0.0019
2	Northwest Coastal LA County	091	365	3	2.0	365	0.10	0.074	0.069	0	0	0	3	0	365	0.08	0.05	0.0173	--	--	--	--
3	Southwest Coastal LA County	820	363	3	2.3	360	0.08	0.066	0.062	0	0	0	0	0	351	0.10	0.05	0.0155	363	0.02	0.006	0.0020
4	South Coastal LA County 1	072	360	4	3.4	364	0.08	0.058	0.058	0	0	0	0	0	357	0.10	0.05	0.0215	364	0.03	0.010	0.0012
4	South Coastal LA County 2	077	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	West San Fernando Valley	074	365	5	3.4	361	0.16	0.108	0.105	1	6	17	32	39	363	0.07	0.04	0.0174	--	--	--	--
7	East San Fernando Valley	069	365	4	3.5	365	0.17	0.128	0.099	2	6	12	25	23	365	0.10	0.05	0.0274	360	0.01	0.004	0.0006
8	West San Gabriel Valley	088	360	4	2.8	365	0.15	0.117	0.095	1	5	7	25	24	365	0.12	0.06	0.0245	--	--	--	--
9	East San Gabriel Valley 1	060	365	2	1.7	364	0.17	0.120	0.091	2	7	10	23	19	365	0.11	0.07	0.0258	--	--	--	--
9	East San Gabriel Valley 2	591	363	2	2.0	363	0.18	0.128	0.107	2	10	15	37	31	362	0.10	0.06	0.0206	--	--	--	--
10	Pomona/Walnut Valley	075	365	3	2.1	365	0.15	0.128	0.109	2	9	16	32	30	365	0.10	0.06	0.0307	--	--	--	--
11	South San Gabriel Valley	085	232*	3*	2.7*	250*	0.13*	0.095*	0.080*	0*	1*	3*	9*	5*	204*	0.10*	0.06*	0.0283*	--	--	--	--
12	South Central LA County	084	365	8	6.4	365	0.09	0.066	0.064	0	0	0	0	0	363	0.14	0.08	0.0306	--	--	--	--
13	Santa Clarita Valley	090	363	2	1.3	359	0.16	0.120	0.112	1	20	40	62	64	359	0.08	0.04	0.0184	--	--	--	--
ORANGE COUNTY																						
16	North Orange County	3177	362	6	3.0	362	0.15	0.114	0.092	1	3	4	8	9	361	0.09	0.05	0.0224	--	--	--	--
17	Central Orange County	3176	365	5	3.0	365	0.11	0.088	0.072	0	0	1	5	3	343	0.11	0.06	0.0197	--	--	--	--
18	North Coastal Orange County	3195	365	4	3.0	365	0.07	0.064	0.062	0	0	0	0	0	361	0.10	0.05	0.0145	353	0.01	0.004	0.0013
19	Saddleback Valley	3812	365	2	1.8	356	0.12	0.105	0.092	0	0	6	13	17	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY																						
22	Norco/Corona	4155	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	365	3	2.1	365	0.15	0.116	0.113	1	8	30	45	59	365	0.08	0.05	0.0199	365	0.01	0.004	0.0013
23	Metropolitan Riverside County 2	4146	365	4	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Mira Loma	5214	364	4	2.7	364	0.16	0.119	0.107	1	4	25	39	48	332	0.08	0.05	0.0194	--	--	--	--
24	Perris Valley	4149	--	--	--	351	0.17	0.122	0.114	3	12	53	76	84	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	362	1	1.0	362	0.14	0.109	0.102	0	3	24	40	58	352	0.07	0.05	0.0151	--	--	--	--
29	Banning Airport	4164	--	--	--	357	0.14	0.115	0.104	0	8	44	57	78	355	0.11	0.04	0.0161	--	--	--	--
30	Coachella Valley 1**	4137	365	2	1.0	361	0.13	0.109	0.101	0	2	23	37	67	359	0.09	0.05	0.0103	--	--	--	--
30	Coachella Valley 2**	4157	--	--	--	364	0.10	0.089	0.087	0	0	7	4	29	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																						
32	Northwest San Bernardino Valley	5175	360	3	1.8	365	0.17	0.130	0.114	2	14	25	50	54	337	0.10	0.07	0.0310	--	--	--	--
33	Southwest San Bernardino Valley	5817	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	365	3	2.0	361	0.16	0.123	0.116	1	12	29	47	49	362	0.09	0.06	0.0270	365	0.01	0.003	0.0019
34	Central San Bernardino Valley 2	5203	364	3	2.3	362	0.15	0.127	0.119	3	10	29	52	57	362	0.09	0.05	0.0252	--	--	--	--
35	East San Bernardino Valley	5204	--	--	--	365	0.16	0.135	0.125	5	11	36	60	64	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	--	--	--	365	0.16	0.142	0.112	2	9	59	71	96	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DISTRICT MAXIMUM				8	6.4		0.18	0.142	0.125	5	20	59	76	96		0.14	0.08	0.0310		0.03	0.010	0.0020
SOUTH COAST AIR BASIN				8	6.4		0.18	0.142	0.125	10	35	86	102	121		0.14	0.08	0.0310		0.03	0.010	0.0020

ppm - Parts Per Million parts of air, by volume. AAM = Annual Arithmetic Mean -- - Pollutant not monitored.

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

a) - The federal 8-hour standard (8-hour average CO > 9 ppm) and state 8-hour standard (8-hour average CO > 9.0 ppm) were not exceeded. The federal and state 1-hour standards (35 ppm and 20 ppm) were not exceeded, either.

b) - The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard effective June 15, 2005. The 8-hour average California ozone standard of 0.07 ppm was established effective May 17, 2006.

c) - The state standard is 1-hour average NO_2 > 0.25 ppm. The federal standard is annual arithmetic mean NO_2 > 0.0534 ppm. Air Resources Board has approved to lower the NO_2 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. The revisions are expected to become effective later in 2007.

d) - The state standards are 1-hour average SO_2 > 0.25 ppm and 24-hour average SO_2 > 0.04 ppm. The federal standards are annual arithmetic mean SO_2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm. The federal and state SO_2 standards were not exceeded.

AQMD

South Coast
Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
www.aqmd.gov

The map showing the locations of source/receptor areas can be accessed via the Internet at http://www.aqmd.gov/telemweb/areamap.aspx. Locations of source/receptor areas are shown on the "South Coast Air Quality Management District Air Monitoring Areas" map available free of charge from SCAQMD Public Information.

2006 AIR QUALITY
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

2006

Source/Receptor Area No.	Location	Station No.	Suspended Particulates PM10 e): No. Days of Data	PM10: Max. Conc. in µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: Federal > 150 µg/m³ 24-hour	PM10: No. (%) Samples Exceeding Standard: State > 50 µg/m³ 24-hour	PM10: Annual Average AAM h) Conc. µg/m³	Fine Particulates PM2.5 f): No. Days of Data	PM2.5: Max. Conc. in µg/m³ 24-hour	PM2.5: 98th Percentile Conc. in µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal i) > 35 µg/m³ 24-hour	PM2.5: No. (%) Samples Exceeding Standard: Federal i) > 65 µg/m³ 24-hour	PM2.5: Annual Averages AAM j) Conc. µg/m³	Particulates TSP g): No. Days of Data	TSP: Max. Conc. in µg/m³ 24-hour	TSP: Annual Average AAM Conc. µg/m³	Lead g): Max. Monthly Average Conc. k) µg/m³	Lead: Max. Quarterly Average Conc. k) µg/m³	Sulfate g): Max. Conc. in µg/m³ 24-hour	Sulfate: No. (%) Samples Exceeding Standard: State ≥ 25 µg/m³ 24-hour
LOS ANGELES COUNTY																				
1	Central LA	087	59	59	0	3(5.1)	30.3	330	56.2	38.9	11(3.3)	0	15.6	59	109	63.3	0.02	0.01	18.2	0
2	Northwest Coastal LA County	091	--	--	--	--	--	--	--	--	--	--	--	56	76	40.2	--	--	12.2	0
3	Southwest Coastal LA County	820	51	45	0	0	26.5	--	--	--	--	--	--	56	84	43.1	0.01	0.01	13.6	0
4	South Coastal LA County 1	072	61	78	0	6(9.8)	31.1	290*	58.5*	34.9*	5(1.7)*	0*	14.2*	62	157	62.9	0.01	0.01	17.8	0
4	South Coastal LA County 2	077	58	117	0	19(32.7)	45.0	320	53.6	35.3	6(1.9)	0	14.5	59	192	71.1	0.01	0.01	18.8	0
6	West San Fernando Valley	074	--	--	--	--	--	92	44.1	32.0	1(1.1)	0	12.9	--	--	--	--	--	--	--
7	East San Fernando Valley	069	54	71	0	10(18.5)	35.6	104	50.7	43.4	6(5.8)	0	16.6	--	--	--	--	--	--	--
8	West San Gabriel Valley	088	--	--	--	--	--	113	45.9	32.1	1(0.9)	0	13.4	60	123	42.8	--	--	28.7	1(1.7)
9	East San Gabriel Valley 1	060	58	81	0	7(12.1)	31.9	278*	52.8*	38.5*	8(2.9)*	0*	15.5*	59	142	68.4	--	--	20.8	0
9	East San Gabriel Valley 2	591	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Pomona/Walnut Valley	075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	South San Gabriel Valley	085	--	--	--	--	--	116	72.2	43.1	7(6)	1(0.9)	16.7	58	768	79.3	0.03	0.02	28.6	1(1.7)
12	South Central LA County	084	--	--	--	--	--	107	55.0	44.5	4(3.7)	0	16.7	58	147	68.4	0.02	0.02	24.1	0
13	Santa Clarita Valley	090	58	53	0	1(1.7)	23.4	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGE COUNTY																				
16	North Orange County	3177	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Central Orange County	3176	56	104	0	7(12.5)	33.4	330	56.2	40.5	8(2.4)	0	14.1	--	--	--	--	--	--	--
18	North Coastal Orange County	3195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Saddleback Valley	3812	50	57	0	1(2.0)	22.8	106	47.0	25.7	1(0.9)	0	11.0	--	--	--	--	--	--	--
RIVERSIDE COUNTY																				
22	Norco/Corona	4155	57	74	0	10(17.5)	36.5	--	--	--	--	--	--	--	--	--	--	--	--	--
23	Metropolitan Riverside County 1	4144	118	109	0	71(60.2)	54.4	300	68.5	53.7	32(10.7)	1(0.3)	19.0	59	169	91.2	0.01	0.01	10.8	0
23	Metropolitan Riverside County 2	4146	--	--	--	--	--	105	55.3	47.7	9(8.6)	0	17.0	59	131	72.9	0.01	0.01	9.9	0
23	Mira Loma	5214	59	124	0	41(69.5)	64.0	113	63.0	52.5	14(12.4)	0	20.6	--	--	--	--	--	--	--
24	Perris Valley	4149	54	125	0	19(35.2)	45.0	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Lake Elsinore	4158	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	Banning Airport	4164	55	75	0	8(14.6)	31.1	--	--	--	--	--	--	--	--	--	--	--	--	--
30	Coachella Valley 1**	4137	57	73+	0+	2(3.5)+	24.5+	111	24.8	15.9	0	0	7.7	--	--	--	--	--	--	--
30	Coachella Valley 2**	4157	115	122+	0+	57(49.6)+	52.7+	107	24.3	19.1	0	0	9.5	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY																				
32	Northwest San Bernardino Valley	5175	--	--	--	--	--	--	--	--	--	--	--	58	105	54.6	0.01	0.01	9.1	0
33	Southwest San Bernardino Valley	5817	62	78	0	17(27.4)	42.3	107	53.7	41.5	7(6.5)	0	18.5	--	--	--	--	--	--	--
34	Central San Bernardino Valley 1	5197	60	142	0	31(51.7)	53.5	112	52.6	43.8	7(6.3)	0	17.6	59	190	101.0	--	--	10.3	0
34	Central San Bernardino Valley 2	5203	57	92	0	24(42.1)	46.0	102	55.0	48.4	8(7.8)	0	17.8	54	174	87.0	0.02	0.01	11.0	0
35	East San Bernardino Valley	5204	60	103	0	12(20.0)	36.2	--	--	--	--	--	--	--	--	--	--	--	--	--
37	Central San Bernardino Mountains	5181	58	63	0	1(1.7)	26.2	--	--	--	--	--	--	--	--	--	--	--	--	--
38	East San Bernardino Mountains	5818	--	--	--	--	--	42*	40.1*	40.1*	1(2.4)*	0*	11.2*	--	--	--	--	--	--	--
DISTRICT MAXIMUM				142+	0+	71	64.0		72.2	53.7	32	1	20.6		768	101.0	0.03	0.02	28.7	1
SOUTH COAST AIR BASIN				142+	0+	75	64.0		72.2	53.7	32	1	20.6		768	101.0	0.03	0.02	28.7	1

µg/m³ - Micrograms per cubic meter of air AAM - Annual Arithmetic Mean -- - Pollutant not monitored

* Less than 12 full months of data. May not be representative. ** Salton Sea Air Basin.

e) - PM10 samples were collected every 6 days at all sites except for Station Numbers 4144 and 4157 where samples were collected every 3 days.

f) - PM2.5 samples were collected every 3 days at all sites except for the following sites: Station Numbers 060, 072, 077, 087, 3176, and 4144 where samples were taken every day, and Station Number 5818 where samples were taken every 6 days.

g) - Total suspended particulates, lead, and sulfate were determined from samples collected every 6 days by the high volume sampler method, on glass fiber filter media.

h) - Federal annual PM10 standard (AAM > 50 µg/m³) was revoked effective December 17, 2006. State standard is annual average (AAM) > 20 µg/m³.

i) - U.S. EPA has revised the federal 24-hour PM2.5 standard from 65 µg/m³ to 35 µg/m³; effective December 17, 2006.

j) - Federal PM2.5 standard is annual average (AAM) > 15 µg/m³. State standard is annual average (AAM) > 12 µg/m³.

k) - Federal lead standard is quarterly average > 1.5 µg/m³; and state standard is monthly average ≥ 1.5 µg/m³. No location exceeded lead standards. Maximum monthly and quarterly lead concentrations at special monitoring sites immediately downwind of stationary lead sources were 0.24 µg/m³ and 0.22 µg/m³, respectively, both recorded at Central Los Angeles.

\+ - The data for the samples collected on a high-wind day (July 16, 2006) at Palm Springs and Indio (226 µg/m³ and 313 µg/m³, respectively) were excluded in accordance with EPA's Natural Events Policy.

Appendix D2
Addendum to April 2008 Air Quality Assessment dated July 2009

4.2 Regional Air Quality Summary *(Revised to include 2007 data.)*

According to the current data from the South Coast Air Quality Management District (SCAQMD) and the California Air Resource Board (CARB) in 2007, there were a total of 35 days on which the federal standards for 1-hour ozone and 86 days for the 8-hour ozone standard in the SCAB (Basin) locations were exceeded. The number of days exceeding the federal ozone standard varied widely by area, from zero to 59 exceedances, depending on location with the majority of exceedances occurring in the Riverside and San Bernardino County regions. Exceedances were fewer at the coast, increasing to a maximum in the Basin's Central San Bernardino Mountains and inland valleys, and then decreasing further downwind in the Basin's far inland areas. The Central San Bernardino Mountain area exceeded the federal ozone standards most frequently, 13-days for the federal 1-hour and 59-days for the federal 8-hour standards. The more stringent state standards were exceeded for 76 days for the 1-hour state standard in the Perris area and 96-days for the state 8-hour standard n the San Bernardino Mountain area. The highest 1-hour average and 8-hour average ozone concentration recorded in 2007 (0.17 ppm and 0.137 ppm) were approximately 141% and 171% of the federal 1-hour and 8- hour standards, respectively.

In 2007, carbon monoxide concentrations did not exceed the Federal or State standards in the SCAB. The highest carbon monoxide concentrations were recorded in Orange County and central Los Angeles county areas. The maximum 8-hour average concentration of 6.4 ppm, recorded in South Central Los Angeles County, which is below the federal standard by 3.1 ppm and below the state standard by 2.6 ppm.

The following tables contain the most recently released air quality monitoring data for the area closest to the project site according to the SCAQMD SRA/City Table. Table 4-3 includes the data from station #2 which is located in Northwest Coastal Los Angeles County. Table 4-4 includes data from station #3 since no collection of PM10 or SO2 were performed at station #3.

The most recent data (2007) from the air quality monitoring station SRA #2 indicates there were no days on which the Federal 1-hour ozone standards were exceeded however, the State 1-hour standard was exceeded a total of 3-days. The CO concentrations in the Northwest Coastal Los Angeles County region did not exceed federal or state standards.

Table 4-3 Regional Air Quality Summary
Source Receptor Area 2 Years 2004 - 2007

Pollutant	California Standard	Federal Standard	Year	Maximum Measured Concentration	Number of Days samples exceed State/Federal Standards
Carbon Monoxide	**20 ppm 1-hour**	**35 ppm 1-hour**	**2004 2005 2006 2007**	**4.0 3.0 3.0 3.0**	**0/0 0/0 0/0 0/0**
Ozone	**0.09 ppm 1-hour**	0.12 ppm 1-hour	**2004 2005 2006 2007**	**0.107 0.114 0.10 0.117**	**5/0 7/0 3/0 2/0**
Nitrogen Dioxide (NO2)	**0.25 ppm 1-hour**	0.0534 ppm AAM (a)	**2004 2005 2006 2007**	**0.09 0.08 0.08 0.08**	**0/0 0/0 0/0 0/0**
Sulfur Dioxide (SO2)	**0.25 ppm 1-hour 0.04 ppm 24-hour avg. (b)**	0.03 ppm AAM 0.14 ppm 24-hour avg. 0.50 ppm 3-hour avg. (b)	**2004 2005 2006 2007**	**-- -- -- --**	**0/0 0/0 0/0 0/0**
Fine Particulate Matter (PM-10)	**50 ug/m3 24-hour**	150 ug/m3 24-hour	**2004 2005 2006 2007**	**-- -- -- --**	**0/0 0/0 0/0 0/0**
Fine Particulate Matter (PM-2.5)	**35 ug/m3 24-hour**	**65 ug/m3 (d) 35 ug/m3 24-hour**	**2004 2005 2006 2007**	**-- -- -- --**	**0/0 0/0 0/0 0/0**

ppm - Parts Per Million AAM – Annual Arithmetic Mean --- Pollutant Not Monitored
(a) The federal standard is annual arithmetic mean N)2 greater than 0.0534 ppm.
(b) The state standards are 1-hour average SO2 > 0.03 ppm, 24-hour average > 0.04 ppm, and 3-hour average > 0.05 ppm. The federal standards are annual arithmetic mean SO2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.
(c) Less than 12-months of data available.
(d) Revised Federal standard for PM2.5 from 65 down to 35 ug/m3 effective December 17, 2006.

Table 4-4 Regional Air Quality Summary
Source Receptor Area 3 2004 - 2007

Pollutant	California Standard	Federal Standard	Year	Maximum Measured Concentration	Number of Days samples exceed State/Federal Standards
Carbon Monoxide	**20 ppm 1-hour**	**35 ppm 1-hour**	**2004** **2005** **2006** **2007**	**6.0 (c)** **3.0** **3.0** **3.0**	**0/0** **0/0** **0/0** **0/0**
Ozone	**0.09 ppm 1-hour**	0.12 ppm 1-hour	**2004** **2005** **2006** **2007**	**0.069 (c)** **0.086** **0.08** **0.074**	**0/0** **0/0** **0/0** **0/0**
Nitrogen Dioxide (NO2)	**0.25 ppm 1-hour**	0.0534 ppm AAM (a)	**2004** **2005** **2006** **2007**	**0.08 (c)** **0.09** **0.10** **0.08**	**0/0** **0/0** **0/0** **0/0**
Sulfur Dioxide (SO2)	**0.25 ppm 1-hour 0.04 ppm 24-hour avg. (b)**	0.03 ppm AAM 0.14 ppm 24-hour avg. 0.50 ppm 3-hour avg. (b)	**2004** **2005** **2006** **2007**	**0.03 (c)** **0.04** **0.02** **0.02**	**0/0** **0/0** **0/0** **0/0**
Fine Particulate Matter (PM-10)	**50 ug/m3 24-hour**	150 ug/m3 24-hour	**2004** **2005** **2006** **2007**	**52 (c)** **44** **45** **96**	**2/0** **0/0** **0/0** **2/0**
Fine Particulate Matter (PM-2.5)	**35 ug/m3 24-hour**	**65 ug/m3 (d) 35 ug/m3 24-hour**	**2004** **2005** **2006** **2007**	**--** **--** **--** **--**	**0/0** **0/0** **0/0** **0/0**

ppm - Parts Per Million AAM – Annual Arithmetic Mean --- Pollutant Not Monitored
(a) The federal standard is annual arithmetic mean N)2 greater than 0.0534 ppm.
(b) The state standards are 1-hour average SO2 > 0.03 ppm, 24-hour average > 0.04 ppm, and 3-hour average > 0.05 ppm. The federal standards are annual arithmetic mean SO2 > 0.03 ppm, 24-hour average > 0.14 ppm, and 3-hour average > 0.50 ppm.
(c) Less than 12-months of data available.
(d) Revised Federal standard for PM2.5 from 65 down to 35 ug/m3 effective December 17, 2006.

KPC Environmental, Inc.

ADDENDUM to
April 2008 AIR QUALITY ASSESSMENT

Boat Central Project – Dry Stack Boat Storage Project
Marina del Rey, California

July 2009

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As part of the Air Quality Assessment for the Marina Del Rey Boat Central Project, KPC conducted an additional assessment of the emissions impacts associated with boat operations from the project. This assessment was conducted to determine the impacts of dockside idling, and harbor ingress and egress emissions which were assumed to be limited to less than 1-hour of time and restricted to 66 vessels in operation from the project.

Operation emissions associated from boat usage were determined using the USEPA's Nonroad emissions modeling software version 2005 with 2008 updates. Emissions factors were obtained using the default Los Angeles County Region inventory for the summer season, weekend usage. The summer season and weekend use presents a worst case scenario as CARB has indicated that the majority of annual pleasure craft use takes place between April and September.

Emissions were reported in Grams per hour for two primary engine categories inboard/sterndrive 300 to 600 horsepower diesel fuel and inboard/sterndrive 175 <= 300 horsepower gasoline engines. Local vessel inventory data was based on phone interviews with local port businesses including rental and maintenance facilities.

The emissions factors were converted from grams/operating hour to pounds/operating hour in order to compare the results with the SCAQMD's emissions thresholds.

Emissions Factors Grams/Operating Hour

Pollutant	Inboard/Sterndrive Diesel Fuel 300 <= 600 HP	Inboard/Sterndrive Gasoline 175 <= 300 HP 4-stroke
THC (Total Hydrocarbon)	35	211
NOx	826	364
CO	140	5414
PM10	17	3
SO_2	19	8
CO2	71,837	39,173

Emissions Factors Converted Pounds/Operating Hour

Pollutant	Inboard/Sterndrive Diesel Fuel 175 <= 300 HP	Inboard/Sterndrive Gasoline 175 <= 300 HP 4-stroke
THC (Total Hydrocarbon)	.08	.47
NOx	1.82	.80
CO	.31	11.9
PM10	.04	.01
SO_2	.042	.02
CO2	158	86.4

Assumptions: The total boat population for the Boat Central Dry Stack Storage Facility is 367 with an additional outside dry storage for 30 mast vessels. The emissions estimates are based on a population of 70% diesel inboard and 30% gasoline inboard boats being stored. The estimated emissions are based on weekend usage of 66 vessels.

Emissions in the harbor area attributed to this project will include limited idling emissions and vessel egress and ingress. The majority of vessel usage and emissions will occur off the coast. According to CARB (1998) estimates the annual average hours for pleasure craft is less than 60-hours.

Estimated Boat Emissions Pounds/ Hour

Pollutant	Inboard/Sterndrive Diesel Fuel	Inboard/Sterndrive Gasoline	Total
THC (Total Hydrocarbon)	3.68	9.40	13.08
NOx	83.72	16.00	99.75
CO	14.26	238.00	252.26
PM10	1.84	0.2	1.86
SO_2	.02	.40	.42
CO2	7,268	1,728	8,996

Although the 1-hour estimated NOx emissions are close to the daily SCAQMD threshold, project related boat operational emissions are anticipated to be significantly less than modeled since the estimates are based on a single hour at full load, with a total of 66 vessels in operation simultaneously.

Additionally, mitigation includes limiting dockside idling to less than 5-minutes and moving the boats from storage to dockside without power which will decrease the amount of project generated emissions.

The USEPA recommends that best management practices and the cooperation of individual boater are essential in the effort to improve air quality and prevent pollution. The USEPA states that boaters can make a difference that will help protect the environment now and in the future by adopting the following practices:

Limit engine operation at full throttle.
Eliminate unnecessary idling.
Avoid spilling fuel and gasoline.
Use a gasoline container you can handle easily and hold securely.
Pour slowly and smoothly.
Use a funnel or a spout with an automatic stop device to prevent overfilling the fuel/gas tank.
Close the vent on portable gas tanks when the engine is not in use or when the tank is stored.
Use caution when pumping fuel and gasoline.
Follow the manufacturer's recommended maintenance schedule.
Prepare engines properly for winter storage.

Conclusion:

The mitigation measure restricting dockside idling to 5-minutes or less along with the use of best management practices will reduce the emissions associated with boat operations to a level of less than significant.

Appendix E – Biological Resources Reports

1. Tidal Culvert Field Survey Results and Discussion of Impacts of the Boat Works Project on the Tidal Culvert and Marina Ditch Channel, Area A, Ballona Wetlands dated May 8, 2009 Prepared by Rick Ware of Coastal Resources Management, Inc.
2. Letter Report from Dr. Jeffrey Froke dated April 21, 2009 Regarding Focused Visits to Heron Roosting and Nesting;
3. An Evaluation of Potential Impacts on Marine Bird Populations Associated with Parcels 52R and GG: Marina del Rey Boat Central dated September 15, 2008 prepared by J.B. Froke, Ph.D.
4. An Assessment of Marine Biological Resources Associated with Parcels 52R and GG: Marina del Rey Boat Central dated September 13, 2008, prepared by J.B. Froke, Ph.D. of Califauna, in collaboration with Rick Ware of Coastal Resources Management, Inc.
5. Three memos prepared by Mr. Robert A. Hamilton, dated August 22, 2007:
   - Assessment of Proposed Boat Central and Fisherman's Village Projects on Herons and Egrets in Marina del Rey
   - Draft Peer Review of Dr. Jeffrey Froke's Heron Studies at Marina del Rey; Conceptual Great Blue Heron Management Strategy
   - Great Blue Heron Nesting Trees as Environmentally Sensitive Habitat Areas
6. Eelgrass and Invasive Algae Survey and Impact Assessment for the Proposed Boat Central Water-Side Facilities dated May 8, 2007, prepared by Rick Ware of Coastal Resources Management, Inc.
7. Wind Impact Assessment dated September 19, 2006, prepared by Rowan Williams Davies and Irwin Inc. (RWDI), in conjunction with Wayne Bezner Kerr of the Migratory Bird Research Group.

Appendix E1
Tidal Culvert Field Survey Results and Discussion of Impacts of the Boat Works Project on the Tidal Culvert and Marina Ditch Channel, Area A, Ballona Wetlands dated May 8, 2009 Prepared by Rick Ware of Coastal Resources Management, Inc.

May 8th, 2009

To: Roger Van Wert

From: Rick Ware, Coastal Resources Management, Inc.

Re: Tidal Culvert Field Survey Results and Discussion of Impacts of the Boat Works Project on the Tidal Culvert and Marina Ditch Channel, Area A, Ballona Wetlands

Dear Roger:

Coastal Resources Management, Inc. conducted a general survey of the tidal culvert that extends between seawall panels HS 3 and HS 4 in Basin H of Marina del Rey Harbor, California and a shallow water channel (Marina Ditch) in Area A of the Ballona Wetlands located on the south side of Fiji Way (Figure 1). Marina Ditch, which runs along the northern boundary of Area A of the Ballona Wetlands, is connected to Basin H in Marina Del Rey via culverts under Fiji Way. It drains stormwater from approximately 163 acres of existing development north of Area C, drains major parts of Areas A and C, and accepts occasional overflows from Alla Road and Lincoln Boulevard North Storm Drain.

The survey was conducted on 7 April, 2009 between 1000 and 1400 hours by Mr. Rick Ware, Senior Marine Biologist, and Ms. Robin Kohler, Marine Technician. The survey was conducted to assess the current condition of the culvert, marine life associated with the culvert, and the use of the culvert by marine and estuarine fishes as a pathway between Marina del Rey Harbor and the Ballona Wetlands.

An underwater survey was conducted by Mr. Ware at Dock 52 between Panels HS 3 and HS4. Ms. Kohler was the surface safety support diver. For safety purposes, the team members were in contact with each other by using an OTS Underwater Communications System. The southern extent of the culvert was accessed through an unlocked gate immediately south of Fiji Way. Observations of the southern-most opening of the tidal culvert and Marina Ditch were made from the slopes of the channel.

Survey Results

The tidal culvert entrance in Basin H was approximately six-feet wide, with about 2 feet of vertical clearance. The culvert was entirely submerged and there was little if no water current during the time of the survey. Because of the limited clearance, the dive was terminated several feet within the culvert, but the interior of the culvert was visible for several feet with my underwater light. Underwater visibility was approximately 3 feet (horizontal) when the sediments were not disturbed. The entrance to the culvert was surrounded by medium sized rock rip rap that was covered with a light-to-moderate silt layer. The depth at the base of the culvert (MDR side) was about 2.8 ft Mean Lower Low Water.

Coastal Resources Management, Inc. PMB 327, 3334 E. Coast Highway, Corona del Mar , CA 92625
(949) 412-9446 (949) 675-2970 (fax) email rware.crm@earthlink.net

The invasive algae brown algae *Sargassum muticum* was present on the rip rap, along with scattered cover of mussels (*Mytilus galloprovincialis*), barnacles *(Balanus glandula*), and limpets (*Collisella limatula*), all of which were in low abundance. The predatory sea slug *Navanax inermis*, the burrowing anemone (*Pachycerianthus fimbriatus*), black perch (*Embiotoca jacksoni*), and round sting ray (*Urolophus halleri*) were also present in the general area of the culvert, associated with the soft bottom benthic habitat seaward of the rip rap. Other species observed in the general area during dive surveys of Basin H include opaleye perch (*Girella nigricans*) and barred sand bass (*Paralabrax clathratus*) (Coastal Resources Management, 2006).

A layer of mussels covered the inside diameter of the culvert, and mussel debris was mixed into the sediments accumulated within the culvert. The mussel cover was not extensive. Small patches of sponge were also observed, although other types of fouling organisms are believed to be present such as anemones, hydroids, and ectoprocts. No fish were observed within the culvert at the time of the survey.

In addition, CRM, Inc. assessed the condition of the tidal culvert and Marina Ditch on the south side of Fiji Way, as it drained to Area A (Figures 2, 3, and 4). At the exit point of the culvert (Figure 2), the depth was less than one foot. Protective cement was located at the base of the culvert to prevent erosion. Flow from the culvert was directed to Marina Ditch, the shallow tidal channel running parallel to Fiji Way, and extends west past Lincoln Blvd. At its widest point, the channel was about 10 feet wide, and about one foot deep. Based on the vegetation located on the banks of the tidal channel, no more than an additional one-to-two feet of tidal range would be expected within the tidal channel. It does appear the invert elevation of the culvert at the Area A (Ballona wetland) end is higher than in Marina del Ray Basin H, since there was much less water out flowing into the wetland channel.

There are no documented fish surveys in Marina Ditch (Phillip Williams Associates, 2006). It is reported that Marina Ditch in Area A and in Area C may support California killifish and mosquitofish (e.g. R. van de Hoek, personal communication, in Phillip Williams Associates, 2006). Potentially, other species such as round sting ray, gobies, and larvae of water column and bottom fishes can enter Marina Ditch through the culvert, but the survival of these species once they are in Marina Ditch is likely extremely limited due to the excessively shallow depths and water quality.

Impacts of the Proposed Boat Works Project on the Tidal Culvert. Alternatives for the Coastal Conservancy's Ballona Wetland Restoration Project (Figures 5 and 6) include enhancement to Area A and Area C wetlands, and incorporate this particular culvert that crosses Fiji Way to provide enhanced tidal flow into the restored wetlands. Consequently, the culvert located at Dock 52 is an important part of future Ballona wetland restoration. Improvements to the culvert will likely have to be made to increase the tidal range necessary for improved flushing within the wetlands.

Based upon the proposed plans for the Boat Works project, the tidal culvert would remain in place. The structures in the vicinity of the tidal culvert entrance in Basin H would include a long-dock and a small boat launch crane (Figure 7). The boat dock would be seaward of the existing rip rap and the tidal culvert. It is assumed that no subsurface structures (i.e., piles) would block the entrance of the tidal culvert. Pile emplacement in the vicinity of the culvert could potentially cause a short-term increase in turbidity of the tidal waters passing through the culvert. However, the impact would be short-term and would not result in the loss of marine plants or organisms. The increase in turbidity would be on the order expected to be no greater than from a stormwater event entering the system during a winter storm. The area in front of the tidal culvert in Basin H is currently shaded most of the day because it is located behind riprap and at the edge of the bulkhead wall. Therefore, additional shading from any dock structure or a cement extension over the water for the launch crane would not be expected to substantially change the amount of shading from what currently exists at the site. Since the culvert already runs underground beneath the parking lot, shading would not reduce plankton productivity within the tidal culvert.

The project would not impede the flow of tidal waters into Marina Ditch in Area A nor would the project prohibit the passage of any species, eggs, or larvae that currently uses the tidal culvert to gain entrance to Marina Ditch.

Enhancement of the Tidal Culvert Hydraulics. Currently, the tidal culvert provides some tidal flow into Area A; however, it appears to be rather limited, perhaps due to a discrepancy in invert elevations between Marina del Rey and the opposite end in Marina Ditch. Several alternatives are available to improve the tidal hydraulics within the culvert. The flow within the culvert may be improved by deepening the tidal channel within Area A, as proposed for the Ballona Wetlands Restoration of Area A and C (Figures 5 and 6). An open, wider tidal channel extending between Basin H and Marina Ditch would increase fishery use within the tidal culvert, but this is not a feasible option in association with the proposed Boat Works Project.

If the culvert is to remain in place as is currently proposed for the Boat Works project, the tidal culvert can probably be hydraulically enhanced by cleaning out fouling organisms (i.e., mussels) and accumulated sediments. Removing this material will increase the volume of water that is transferred between Marina del Rey and Marina Ditch.

Potential Use of Concrete Debris and Piles Removed From the Project Site. Concrete structures (i.e., pilings) that might be removed from the project site to make way for new pilings could be used to provide fishery habitat, providing the material meets environmental standards of the California Department of Fish and Game. These structures, placed at various angles to each other could provide additional cover and protection for various species in Marina del Rey Harbor (i.e., sand bass, kelp bass, opaleye, and black surf perch). If this material can't be used in Marina del Rey Harbor due to navigational hazard issues, the Department of Fish and Game might want to use the material for offshore reef projects, should the material qualify for use as artificial reef material. Costs for re-use would have to be evaluated.

Please feel free to contact me if you have any questions.

Sincerely,

COASTAL RESOURCES MANAGEMENT, INC.

Rick Ware

Rick Ware

President/Senior Marine Biologist

<u>Literature Cited</u>

Coastal Resources Management. 2006. Eelgrass and Invasive Algae Survey and Impact Assessment for the Proposed Boat Central Waterside Facilities, Marina del Rey Harbor, California. Prepared for Roger K. Van Wert, Allen Matkins Attorneys at Law. Los Angeles, California. May 8, 2007.

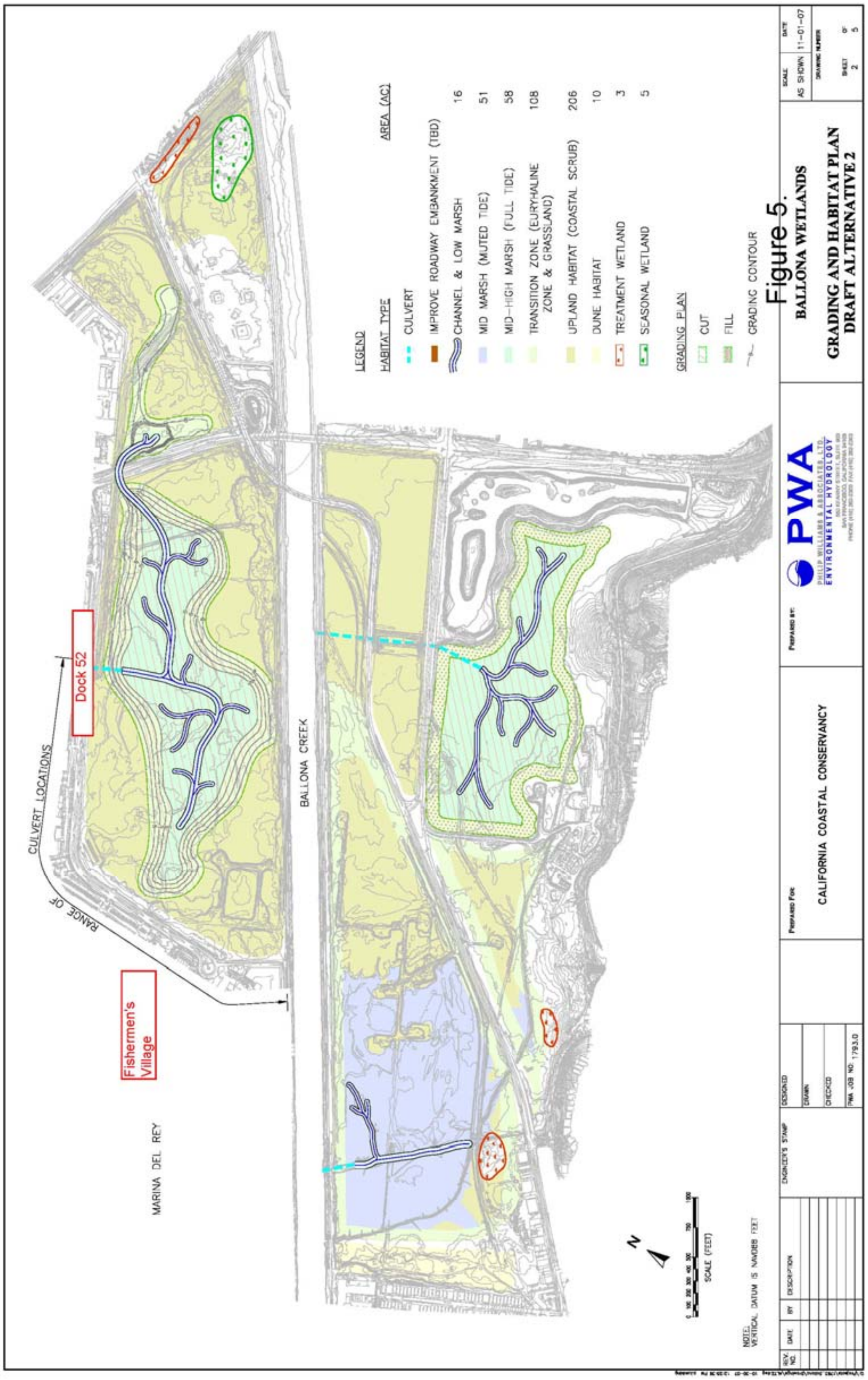
Phillip Williams and Associates, Ltd. 2006. Ballona Wetlands Existing Conditions. Draft Report. Prepared for the California State Coastal Conservancy. August 18th, 2006. In association with Weston Solutions, EDAW, Tierra Environmental, Keane Biological Consulting, Allwest and MMA.

Figure 1. Project Location
Basin H, Marina del Rey Harbor

Figure 2. Exit point of culvert in Area A, Ballona Wetlands, south of Fiji Way

Figure 3. Widest section of tidal channel (Marina Ditch), approximately 10 feet wide.

Figure 4. Marina Ditch, From the box culvert south of Fiji Way, north to Lincoln Blvd. Depth was less than 1 foot within the area surveyed.


MARINA DEL REY
Fishermen's Village
RANGE OF
CULVERT LOCATIONS
Dock 52
BALLONA CREEK
LEGEND
HABITAT TYPE
AREA (AC)
CULVERT
IMPROVE ROADWAY EMBANKMENT (TBD)
CHANNEL & LOW MARSH 16
MID MARSH (MUTED TIDE) 51
MID-HIGH MARSH (FULL TIDE) 58
TRANSITION ZONE (EURYHALINE ZONE & GRASSLAND) 108
UPLAND HABITAT (COASTAL SCRUB) 206
DUNE HABITAT 10
TREATMENT WETLAND 3
SEASONAL WETLAND 5
GRADING PLAN
CUT
FILL
GRADING CONTOUR
Figure 5.
BALLONA WETLANDS
GRADING AND HABITAT PLAN
DRAFT ALTERNATIVE 2
SCALE
AS SHOWN
DATE
11-01-07
PWA
PHILIP WILLIAMS & ASSOCIATES, LTD.
ENVIRONMENTAL HYDROLOGY
PREPARED BY:
PREPARED FOR:
CALIFORNIA COASTAL CONSERVANCY
PWA JOB NO. 1793.0
SCALE (FEET)
NOTE:
VERTICAL DATUM IS NAVD88 FEET

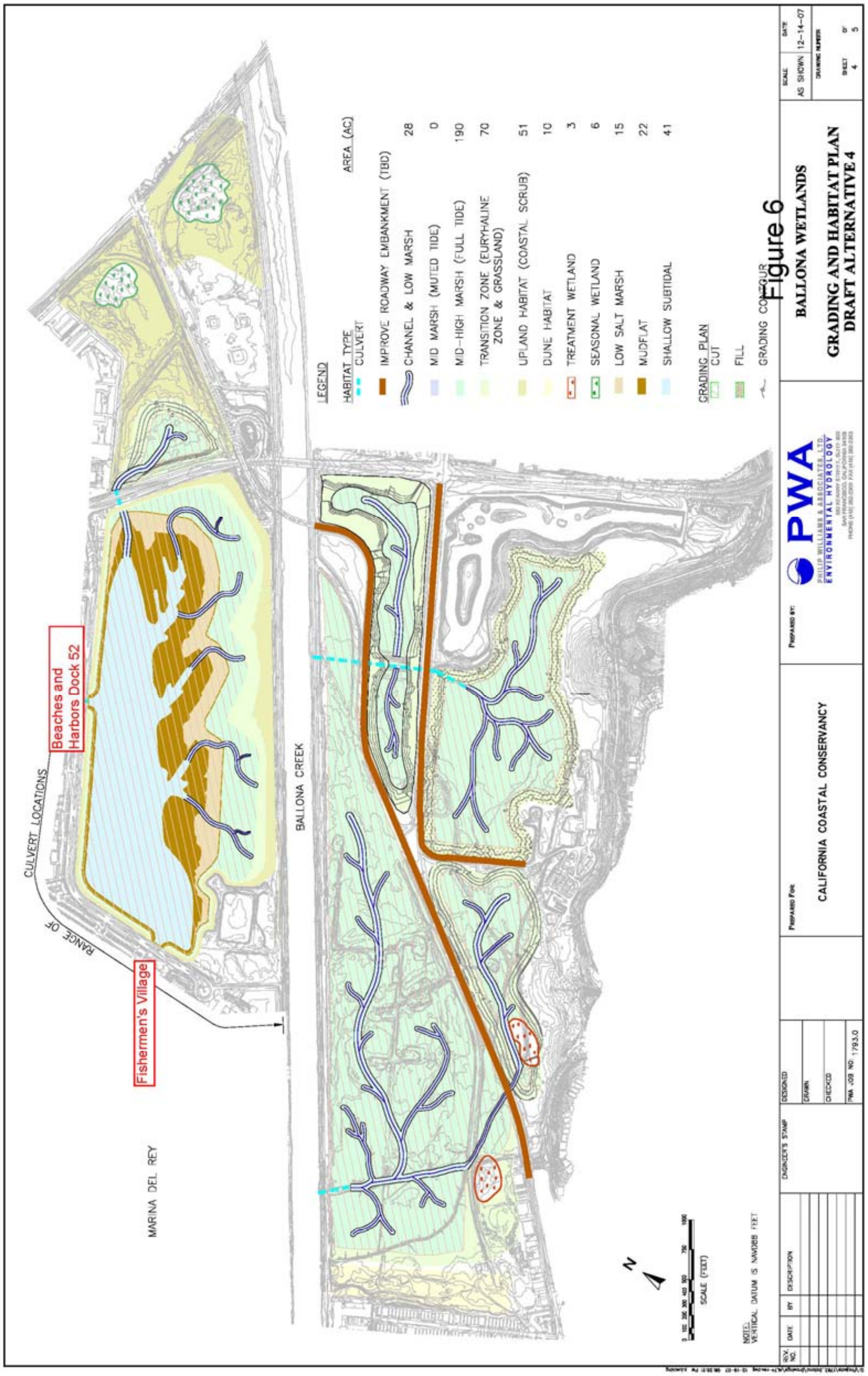


Figure 6
BALLONA WETLANDS
GRADING AND HABITAT PLAN
DRAFT ALTERNATIVE 4
LEGEND
HABITAT TYPE
AREA (AC)
CULVERT
IMPROVE ROADWAY EMBANKMENT (TBD)
CHANNEL & LOW MARSH 28
MID MARSH (MUTED TIDE) 0
MID-HIGH MARSH (FULL TIDE) 190
TRANSITION ZONE (EURYHALINE ZONE & GRASSLAND) 70
UPLAND HABITAT (COASTAL SCRUB) 51
DUNE HABITAT 10
TREATMENT WETLAND 3
SEASONAL WETLAND 6
LOW SALT MARSH 15
MUDFLAT 22
SHALLOW SUBTIDAL 41
GRADING PLAN
CUT
FILL
GRADING CONTOUR
Fishermen's Village
Beaches and Harbors Dock 52
CULVERT LOCATIONS
RANGE OF
MARINA DEL REY
BALLONA CREEK
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SCALE (FEET)
NOTE: VERTICAL DATUM IS NAVD88 FEET
PREPARED FOR
CALIFORNIA COASTAL CONSERVANCY
PREPARED BY:
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ENVIRONMENTAL HYDROLOGY
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SHEET 4 OF 5
PWA JOB NO. 1793.0

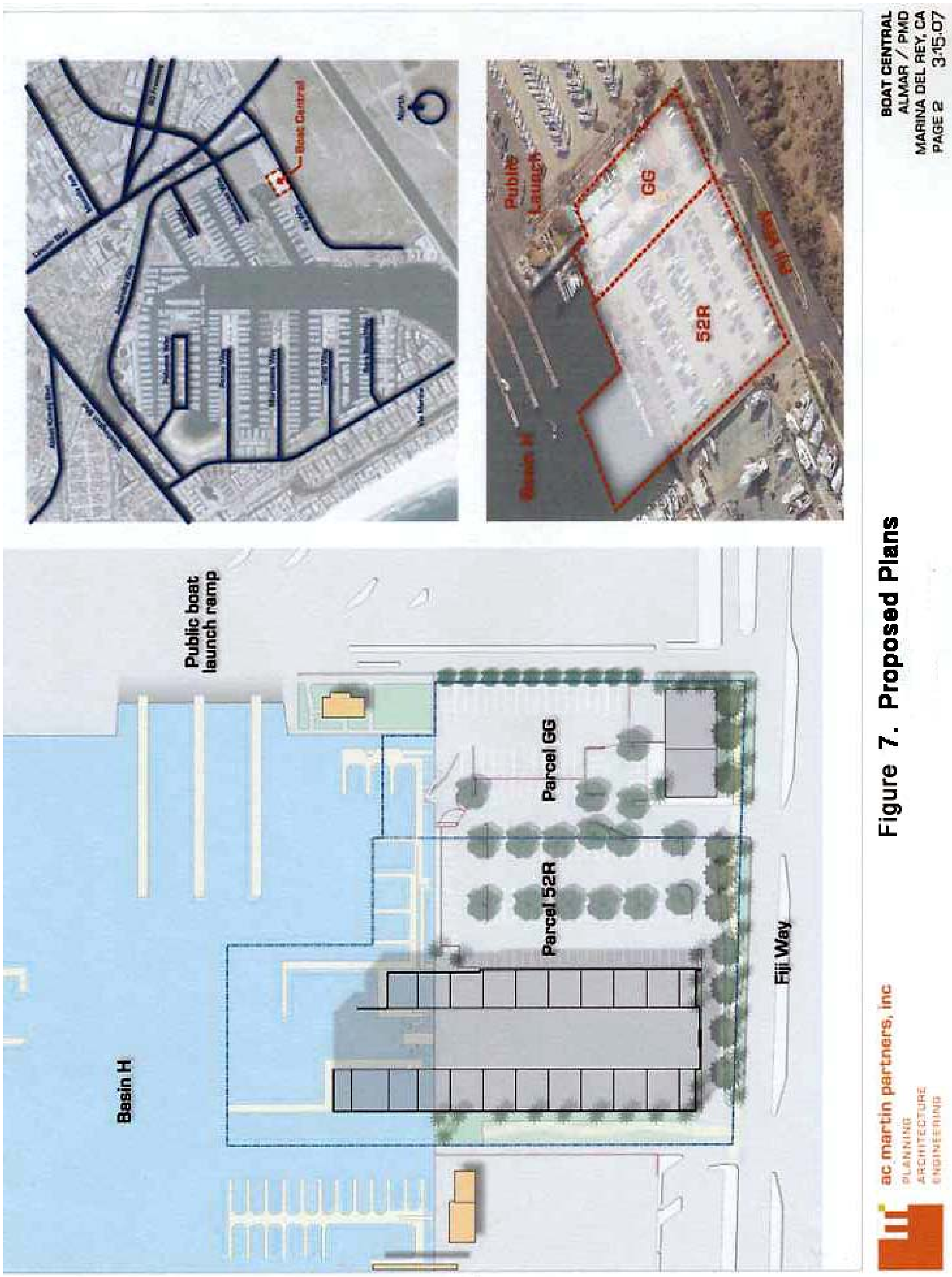

Figure 7. Proposed Plans

Appendix E2
Letter Report from Dr. Jeffrey Froke dated April 21, 2009
Regarding Focused Visits to Heron Roosting and Nesting

CALIFAUNA

JEFFREY B. FROKE, PH.D.
3158 BIRD ROCK ROAD
PEBBLE BEACH, CA 93953

TEL: (831) 224-8595
FAX: (831) 649-3765
JBFROKE@MAC.COM

Tuesday, 21 April 2009

BIOLOGICAL REPORT

To: Kathy Crum
CAA Planning
kcrum@caaplanning.com

Re: MdR Boat Central

My responsibilities and non-obliged opportunities to observe birdlife associated with the Boat Central site (MdR parcels 52R & GG: 4.20 ac) extend from July 2005 to the present, and are ongoing. More specifically, during October 2006 to August 2008, I made 24 focused visits to the site to observe and report use of the site (waterside and landside) by birds of any species that were associated with the location. Actual observation time has amounted to approximately 50-60 hrs.

Recently, on 08 March and 16 April 2009, I made a series of six visits to the site, expressly to observe and determine whether herons, of any species, were or had either roosted or nested in the 28 onsite Mexican Fan Palms.

For detailed site and biological background, please refer to Froke 2008[1]. The palms are routinely trimmed and, consequently, the bulwark of living and dried fronds that herons use for nest placement and support do not develop in these trees.

Findings made from 2006 to 2008 for the Boat Central bird report (see footnote) concluded that neither Great Blue Herons, Black-crowned Night-Herons nor any species of egret had roosted or nested in any onsite palm tree or in any other support structure during the study period. Furthermore, there was no evidence such as remnant parts of

[1] FROKE, J.B. 2008. An evaluation of potential impacts on marine bird populations associated with parcels 52R & GG: Marina del Rey Boat Central Project, Los Angeles County, California. Contracted report prepared for Boat Central L.P., c/o Allen Matkins / Los Angeles. Pebble Beach, CA (15 September).

nests to suggest that herons had nested in the trees prior to 2005. Subsequent to the completion of the bird report and to the present time, there has been found no evidence of nesting or roosting in the trees.

In sum, direct observations of onsite birdlife and habitat features, including all palms, over a five (5) year period have failed to produce evidence of heron nesting or roosting onsite. Although present throughout Marina del Rey, nesting herons are neither expected to nor do they nest anywhere on MdR parcels 52R and GG.

Jeffrey B. Froke, Ph.D.

Appendix E3
An Evaluation of Potential Impacts on Marine Bird Populations Associated with Parcels 52R and GG: Marina del Rey Boat Central dated September 15, 2008 prepared by J.B. Froke, Ph.D.

AN EVALUATION *of* POTENTIAL IMPACTS *on*
MARINE BIRD POPULATIONS
ASSOCIATED WITH PARCELS 52R & GG:
MARINA DEL REY BOAT CENTRAL
LOS ANGELES COUNTY, CALIFORNIA

Prepared for

BOAT CENTRAL, L.P.
c/o Allen Matkins Leck Gamble & Mallory LLP
515 South Figueroa Street, 7th Floor
Los Angeles, CA 90071
(213) 622-5555
Contact: Roger Van Wert

Prepared by

CALIFAUNA
3158 Bird Rock Road
Pebble Beach, CA 93953
(831) 224-8595
Contact: J.B. Froke, Ph.D.

Monday, 15 September 2008

Recommended Citation

FROKE, J.B. 2008. An evaluation of potential impacts on marine bird populations associated with parcels 52R & GG: Marina del Rey Boat Central, Los Angeles County, California. Contract report prepared for Boat Central L.P. ℅ Allen Matkins / Los Angeles. Pebble Beach CA (15 September).

AN EVALUATION *of the* POTENTIAL IMPACTS *on* MARINE BIRD POPULATIONS ASSOCIATED WITH PARCELS 52R & GG: MARINA DEL REY BOAT CENTRAL LOS ANGELES COUNTY, CALIFORNIA

Prepared for

BOAT CENTRAL, L.P.
c/o Allen Matkins Leck Gamble & Mallory LLP
515 South Figueroa Street, 7th Floor
Los Angeles, CA 90071
(213) 622-5555
Contact: Roger Van Wert

Prepared by

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3158 Bird Rock Road
Pebble Beach, CA 93953
(831) 224-8595
Contact: J.B. Froke, Ph.D.

Monday, 15 September 2008

Recommended Citation:

FROKE, J.B. 2008. An evaluation of the potential impacts on marine bird populations associated with parcels 52R & GG: Marina del Rey Boat Central Project, Los Angeles County, California. Contract report prepared for Boat Central L.P., c/o Allen Matkins / Los Angeles. Pebble Beach, CA (15 September).

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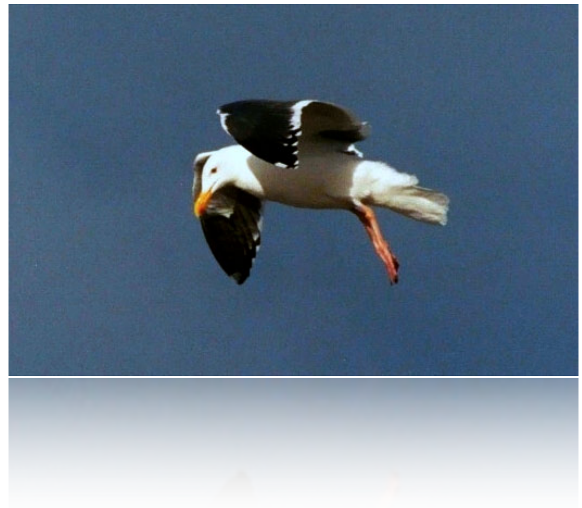


1.0 INTRODUCTION

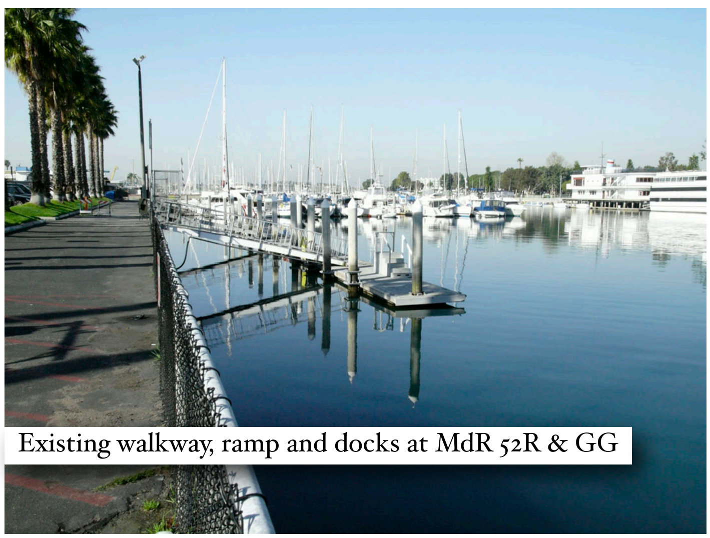
1.1 Premise

Throughout California and North America, modern society increasingly expects that development of its land and waters be environmentally sound, and it is challenging and demanding developers to adopt a sustainability imperative that is linked to nature protection. In parlance, communities want their developments and construction to be *green*. This means that development ought to improve properties (and property values) while reducing adverse effects of these improvements on natural and cultural resources. Advancing this premise to Marina del Rey (MdR), the present report examines whether the proposed Boat Central Project (Boat Central; the Project) will beneficially, neutrally or adversely affect the marine wildlife that inhabits the already-developed harbor site .

The aim of this study is to evaluate and report on how the Project may disrupt an existing marine bird community both on and away from the project site during both its construction and post-construction phases.

1.2 Species of Interest to this Study

The marine birds[1] of *primary* interest to this study are listed below. These species are elevated in this discussion because the birds are either (1) listed or proposed for listing as federal and/or California endangered species [2,3] and/or, (2) in addition to any *ecological and/or bureaucratic affiliation* the species may have with the site, each bears special *socio-cultural* significance as demonstrated by outspoken citizen groups operating within Los Angeles County and Marina del Rey. In reference to the latter case, particular cultural importance is given to local members of the heron family (Ardeidae: herons, egrets and night-herons; collectively, *herons*), and by association, a species of cormorant (Phalacoracidae). Otherwise, neither the herons nor cormorants are specifically called-out for being listed species or those proposed for listing; and, just nesting colonies of the relevant species are of *special concern* to the State of California (CDFG Species of Special Concern 2008).



Existing walkway, ramp and docks at MdR 52R & GG

[1] Marine birds are defined as species or populations that spend at least a part of their life in a marine habitat.

[2] Nationwide, the Endangered Species Act (ESA) of 1973 protects plant and animal species that are listed by the federal government as "endangered" or "threatened."

[3] The purpose of the California Endangered Species Act (CESA) is to conserve and enhance endangered species populations and their habitats.

There are several *secondary* animals identified in this document. Attention is given to each because they are known or expected to associate with the project area, whether habitually or incidentally. These birds are not specifically protected by state or federal endangered species laws; however, as individual birds native to the United States, they are generally protected by law, and particularly by the Migratory Bird Treaty Act of 1918, as amended. [4]

The Primary Species

- Brown Pelican, *Pelecanus occidentalis* (USA ENDANGERED) [5]
- Double-crested Cormorant, *Phalacrocorax auritis*
- Great Blue Heron, *Ardea herodias*
- Great Egret, *Ardea alba*
- Snowy Egret, *Egretta thula*
- Black-crowned Night-Heron, *Nycticorax nycticorax*
- California Least Tern, *Sterna antillarum browni* (USA ENDANGERED) [6]

---

4 Migratory Bird Treaty Act of 1918 -- The original 1918 statute implemented the 1916 Convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia). Specific provisions in the statute include:

Establishment of a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. 703)

5 The Brown Pelican, currently a federally-listed endangered species, has been proposed by the US Fish & Wildlife Service for delisting from the Federal List of Endangered & Threatened Wildlife, over its entire range, effective 20 Feb 2008, and subject to a 12-month petition for review (Federal Register / Vol. 73, No. 34 / Wednesday, February 20, 2008 / Proposed Rules 9409).

6 The California Least Tern recently was recommended for a status downgrade, from endangered to threatened by the US Fish & Wildlife Service, and per findings from the agency's 5-year status review of the species. US Fish & Wildlife Service, Carlsbad FWO, 23 Oct 2007.

Secondary Species

- Western Grebe, *Aechmophorus occidentalis*
- Eared Grebe, *Podiceps auritus*
- Heermann's Gull, *Larus heermannii*
- Ring-billed Gull, *Larus delawarensis*
- Red-breasted Merganser, *Mergus serrator*

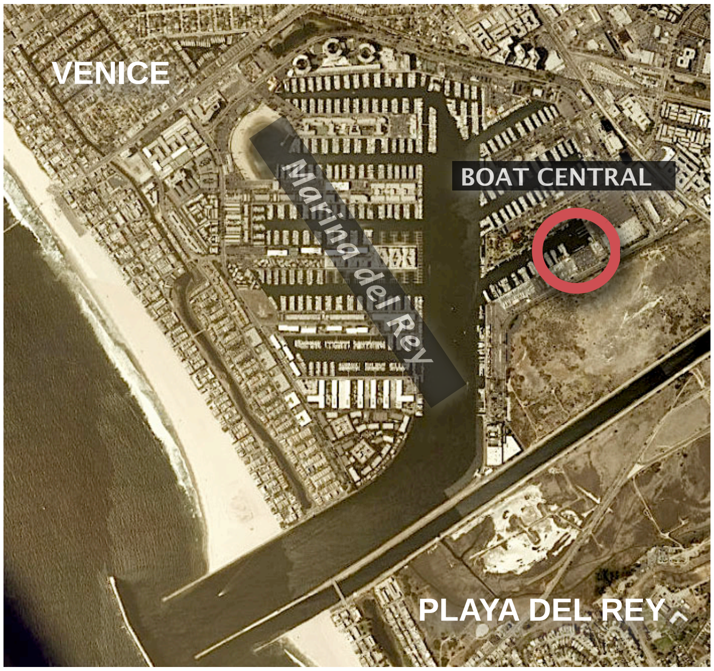
HEERMANN'S GULL, *Larus heermannii*

Despite their modest size, Heermann's Gulls are aggressive, harassing other birds to make them drop their food. In addition, Heermann's Gulls steal fish directly from the pouches of Brown Pelicans. In fact, the post-breeding dispersal of Heermann's Gull coincides with the northward movement of Brown Pelicans. These gulls also forage on their own, catching small fish near the water's surface in the sea and coastal embayments, including Marina del Rey.

2.0 SITE LOCATION & DESCRIPTION

2.1 Site Overview

The Boat Central site is located near Fiji Way in Marina del Rey, Los Angeles County, California. The area is comprised of MdR Parcels 52R and GG. Its geographic position is lat 33.976845° / lon -118.4415330° @ 0 - 10 ft ASL. Figure 1 shows the regional and local position and the neighborhood setting of Parcels 52R & GG. Altogether, the water and land portions of the site total 4.20 acres (3.09 ac + 1.11 ac, respectively).



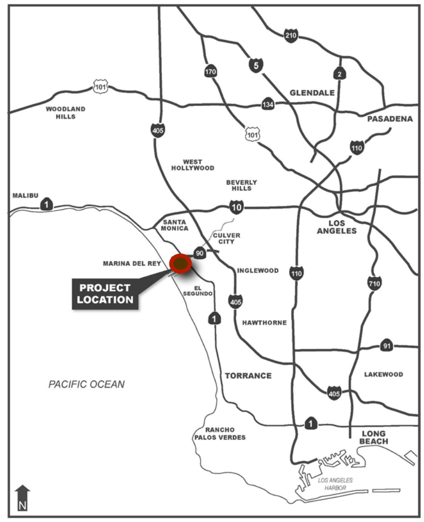


FIGURE **1** Boat Central and its vicinity including Marina del Rey, Los Angeles Co., CA

2.2 Existing Use of the Site

The largest part of the project site (Parcel 52R) is currently used for parking by government and fishermen's vehicles; and there are lived-in motorhomes, campers, and automobiles, constantly in use. A smaller landside section (Parcel GG) is occupied by County government offices, including the LACo Sheriff. Waterside, a single dock (±150 ft) and gangway are used by private craft, primarily charter and day-fishing boats. A smaller dock is used by the LACo Sheriff, exclusively. Commercial boats tie-up for loading and off-loading, only. Figure 2 shows the existing connection and extent of Parcels 52R and GG.

FIGURE **2** Aerial image encompassing MdR Parcels 52R and GG, which comprise the site of Boat Central, Marina del Rey, Los Angeles Co., California

2.3 Existing Habitat Values

The landside habitat of the project site is limited mostly to an asphalt parking lot (±1.90 ac) with double-bordering rows of (28) mature palms *(Washingtonia robusta)*. Western Gulls and Heermann's Gulls loaf on the pavement and forage on found litter and caught marine foods, plant and animal. Gulls also loaf on the flat rooftops of the modular buildings occupied by LA County offices.

Waterside habitats used by scavenging birds encompass docks, open water, and the decks of returning fishing boats. In particular, Snowy Egrets catch live baitfish from the deckside holds of the fishing boats. Relative to birds' perennial use of the adjacent public launch docks and runways, the Parcel 52R dock is infrequently used by loafing and hunting birds, and then gulls primarily, and pelicans occasionally. Use of the launch runways by gulls, pelicans, cormorants and to a lesser degree, herons, occurs during daytime and with little disturbance. Whereas the 52R dock is relatively free of whitewash, the three public runways are completely and thickly covered with accumulated guano from fish-eating bird species: Guano deposits can be a 'quick-and-dirty' means to compare the amount of bird use per different roosting sites.

3.0 STUDY APPROACH

This study of marine birds and their use the Boat Central site is based on year-round observations made during 2006-2008. Herein, findings of the birds' site-use are based on 24 observations made during planned and focused visits to the site (18) and incidental visits (6) made while attending to bird studies elsewhere in the marina. Site visits were made over 23 consecutive months (October 2006 - August 2008), and observations were made at all times of day, from early morning to after sunset, including afternoons. Individual observations lasted from 15 minutes to more than two hours. Overnight, nocturnal observations were made on four of the 24 occasions.

An adult **Snowy Egret**, *Egretta thula*, standing over a local canal at high tide, Washington Blvd., Venice, CA.

Blacksmith, *Chromis punctipinnis,* are schooling fish. When being cleaned by parasite-eating fish, the school forms a tight ball and hangs upside down, each fish waiting its turn to be cleaned. Blacksmiths feed on zooplankton, copepods, crustacean larvae and eggs.

4.0 STUDY OBJECTIVES

Four objectives guided the arrangement of this study, and each addressed the project site and its immediate vicinity, including the public launch facilities. The basic objectives included the marine birds' present and future use of the subject area, and physical elements of Boat Central that might affect the animals' continued use of the site, and their welfare. Specific objectives included the following:

- Identify marine bird species that use the site and its immediate vicinity;
- Identify and evaluate project actions and outcomes that could affect the marine birds;
- Using scientific judgment, determine the significance of potential impacts on the birds;
- Recommend construction BMPs as mitigation measures, and additional post-construction methods to prevent, reduce or mitigate any significant threats to bird resources.

4.1 Thresholds Of Significance

For analysis, any effect that the project would have on biological resources would be viewed as significant if it would,

- Substantially affect or threaten the ecology and welfare of a rare, threatened, endangered, or candidate animal species, or the habitat of such species;
- Substantially diminish or degrade the marine habitat of any marine plant or animal;
- Result in the notable net loss of a biotic community that is subject to local, state, and/or federal regulations or that is otherwise of very limited occurrence in the region; or,
- Significantly interfere with the movement of any resident or migratory wild animal species.

5.0 ENVIRONMENTAL SETTING & RESOURCE DESCRIPTION

5.1 Environmental Setting

Marina del Rey is located in Santa Monica Bay, Los Angeles County, California. The marina is south of Venice and north of Playa del Rey (Figure 1, above). The marina is approximately 15 miles southwest of downtown Los Angeles.

The marina was constructed in 1957 from a portion of the Ballona wetlands and the former Lake Los Angeles. Today, the marina encompasses approximately 354 ac and has the slip capacity to accommodate approximately 5,200* private boats (* Note that there is a disparity of slip capacity argued among local organizations; 5,200 is advertised by Marina del Rey Convention & Visitors Bureau). MdR is protected at its entrance by two jetties and a detached breakwall, and it is adjacent to the downcoast Ballona Creek Flood Control Channel. For additional information on the marina's evolution, a concise development history of Marina del Rey can be found at this address: *http://labeaches.info/BandH/Marina/MdRhistory.htm.*

5.2 Watershed Characteristics

Ballona Creek drains approximately 127 mi^2 of watershed, and entirely from within Los Angeles County. The watershed boundary includes the Santa Monica Mountains to the north and the cities of Baldwin Hills and Inglewood on the south. The western boundary is approximately one mile inland from the Pacific Ocean and extends from the Santa Monica Mountains southward to Venice and eastward to Baldwin Hills. The eastern boundary extends from the crest of the Santa Monica Mountains southward and westwards to the vicinity of central Los Angeles.

Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. Flows from these sources vary greatly from year to year depending on rainfall; and discharge during major winter storms greatly exceeds discharge at other times. Large amounts of sediment are delivered to Ballona Creek during major storm events and typical urban contaminants are entrained into the stormwater runoff. During the major storms of December 1994 and January 1995, discharge from Ballona Creek resulted in the shoaling of approximately 50,000 cubic yards of sediment at the south entrance of Marina del Rey (U.S. Army Corps of Engineers 1995). Conversely, during summer and fall, Ballona Creek will carry only nominal runoff from nuisance water, domestic, agricultural, and industrial discharges (Chambers Group Inc. 1998).

Runoff and associated contaminants from the watershed discharge into the marina's south entrance channel and Santa Monica Bay at the mouth of Ballona Creek, which is located immediately downcoast of Marina del Rey Harbor. Several storm drains lead into the back basins including the Washington Street and Oxford drains. Other sources of contaminants include illegal flushing of bilges and boat repairs (scraping of fouling organisms and antifouling paint from watercraft hulls), and accidental sewage discharges from the City of Los Angeles wastewater treatment system.

5.3 Underwater Setting

Most underwater habitat within the marina is subtidal and has a soft bottom consisting of sands, silts, and clays. The breakwall and main channel entrance jetties are built of imported riprap (Chambers Group Inc. 1998) and support hard bottom species. With the exception of riprap areas, hard bottom in the marina is limited to vertical retaining walls, piers, and floats. The only gently sloping, shallow water habitat in the marina is a small swimming beach (*Mother's Beach*) at the back of MdR Basin D.

TOPSMELT, *Atherinops affinis*, schooling near the surface of water represent a locally abundant food source for diving and plunging bird species.

6.0 MARINA FAUNA

6.1 Marine Birdlife

The Marina del Rey harbor encompasses a range of habitats that are permanently and seasonally occupied by an array of terrestrial and marine aquatic bird species. The majority of birds inhabiting water and waterside habitats of MdR are full-time residents or visitors: Visits by the latter group occur either seasonally (*winter or breeding visitors*) or in-transit (*short-stay migrants*).

This report examines several species of marine birds occupying MdR, species that are wholly or partly dependent on marine resources and come in contact with marine waters for a regular period or periods of their annual cycle. Several species including, e.g., Osprey (*Pandion haliaetus*) and the herons, may live and forage in association with marine waters and elsewhere with non-marine aquatic habitats, the latter including lakes, ponds, estuaries and rivers. The same birds commonly forage for fish and smaller animals, e.g., crustaceans [7, 8], and do so principally from the following *predatory vantage points*:

(A) Sighting and diving after aquatic prey while flying overhead, e.g., terns, pelicans, and Osprey. With California Least Terns, hovering before diving is a common component of their hunting *on the wing*;

(B) Swimming on the surface and picking or diving for prey, e.g., pelicans, cormorants, gulls, and waterfowl such as the Red-breasted Merganser, *Mergus serrator*;

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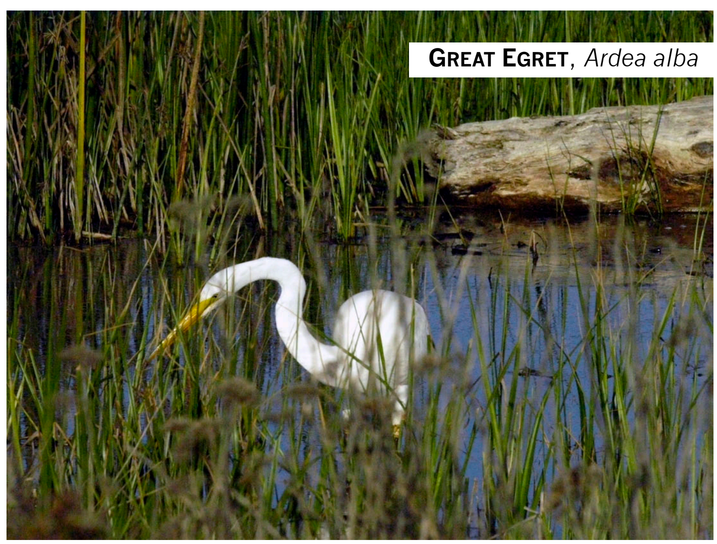
7 For descriptions of marina fishes and invertebrate organisms, see FROKE, J.B. & R. WARE. 2008. *Marine biological resource assessment for Marina del Rey Parcel 52R & GG, Boat Central Project, Los Angeles County, California.* Contract report for Boat Central L.P. c/o Allen Matkins / Los Angeles. Pebble Beach, CA (July).

8 Also, see FROKE, J.B. & R. WARE. 2007. *Marine biological resource assessment for the Marina del Rey Parcel 64 / Villa Venetia Redevelopment Project.* Contract report for Lyon Apartment Companies, Newport Beach CA. Pebble Beach CA (05 February).

(3) Standing in shallows or at the edge of water, such as by a bait tank, and striking or grabbing aquatic prey, from crabs to fish. Dock and beach predators include, e.g., herons and shorebirds; and,

(4) Perching above the water and snapping, alighting on, or diving for prey beneath the water surface, e.g., herons and kingfishers. Examples of available perches in the harbor include overhanging branches, cables and mooring lines, decks, and the bulwarks and stern boards of anchored boats and ships; also, edges of docks and both dockside and onboard bait tanks.

In addition to preying on water-borne animals such as fish, crabs, and shrimp, several groups of predatory birds search for smaller prey that are accessible above tidal lines. For example, plentiful invertebrate and vertebrate species, the latter including small mammals (e.g., *Microtus, Reithrodontomys, Thomomys*), occupy or visit mudflats, tidal channels and canals, sandy beaches, grassy verges, fields, and rocks and rip-rap inside the channel and marina environments. The prey animals are continuously or cyclically available for capture and ingestion by herons, shorebirds, waterfowl, corvids (locally, American Crows, *Corvus brachyrhynchos*), and less often, raptors such as American Kestrel (*Falco sparverius)* and Red-shouldered Hawks (*Buteo lineatus*).



GREAT EGRET, *Ardea alba*

When not foraging, certain marine birds perch to rest or loaf on a variety of structures and surfaces inside the marina. Pelicans, cormorants, herons and gulls commonly roost and sun in large trees and on rooftops, and on docks, boat decks, and buoys[9]. The *Findings* of this report include specific information about birds' use of these habitat elements in relation to the Project.

6.2 Marine Fishes

Numerous fishes comprise the main foodstuffs of resident and visiting marine birds within Marina del Rey and thus are crucial to their survival. The following profile of the MdR fishery introduces some of the more common species that swim in and near to the marina, and that appear suitable prey for the birds.

Marina del Rey offers viable nursery waters and day-to-day habitat for a diverse collection of marine fishes (see ABC Laboratories 1997). The ABC information is based on several population and community studies of the resident ichthyofauna inside Marina del Rey from the 1970s to late 1990s. During the 1970s through 1996, Prof. John Stephen (University of Southern California) studied marina fishes, and did so independently and in conjunction with institutions including Vantuna Research Group (Occidental College) and a USC monitoring program. ABC Laboratories (1997) continued the Occidental College studies after 1996, and since 1984 the College and Laboratory's surveys have recorded 103 species of fish in the harbor. During 1996, ABC Laboratories identified 53 species and 235,410 individuals (including eggs and larvae).

The following list of species from the marina is based on first-hand observation and previously cited surveys. It is noteworthy that several of these species at their adult full-size may no longer be 'available' to marine birds that hunt inside the harbor. In any case, the pelican has the greatest capacity for capturing larger (full grown) fish. Fishes are listed by their principal habitat association.

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9 Perching and roosting out of water is particularly important for cormorants, including the local **Double-crested Cormorant**. This is because the birds lack a productive uropygium, a gland that is located at the dorsal base of the tail feather tract and, that produces an oily secretion that other waterbirds preen into their feathers to gain buoyancy and flotation. Without the secretion, a cormorant's plumage absorbs water that adds weight useful for deep diving after prey. But, when waterlogged, the birds need to dry off, as by sunning, before returning to water.

Reef-associated Species

Common reef-associated species found along the south breakwater of Marina del Rey include

- Opaleye, *Girella nigricans*,
- Sargo, *Anisotremus davidsonii*,
- Black Surfperch, *Embiotoca jacksoni*,
- Blacksmith, *Chromis punctipinnus*,
- Barred Sand Bass, *Paralabrax nebulifer*,
- Queenfish, *Seriphus politus*
- Kelp Bass, *Paralabrax clathratus*, and
- Pile Perch, *Damalichthys vacca*.


QUEENFISH

Deepwater & Bottom Fish

The most abundant deep water and bottom fish in the channel, based on captures using trawl nets, include

- California Halibut, *Paralichthys californicus*,
- Barred Sand Bass
- White Croaker, *Genyonemus lineatus*, and
- Round Stingray, *Urolophus halleri*.


Barred Sand Bass

Schooling Fishes

Schooling fishes occur throughout the marina waters, and two are especially abundant and fed upon by marine birds:

- Topsmelt, *Atherinops affinis,*
- Deepbody Anchovy, *Anchoa compressa*

An abundant species caught locally by Great Blue Herons, the Shiner Surfperch, *Hyperprosopon ellipticum,* inhabits shallow rocky areas and embayments over the length of California.

From 1996, collections of *ichthyoplankton* (the small floating eggs and larvae of fish) inside MdR were dominated by species of goby (family Gobiidae)[10] and blenny larvae (Blenniidae) during the summer and winter months; and, anchovy larvae (Engraulidae) were abundant during the summer sampling periods.

10 **Note to readers**: the presence of *idae* as the end of a formal name [Gobi*idae*] confirms that the subject is a family name, whether of fish, birds or any other animal, vertebrate or invertebrate (Kingdom *Animalia*).

L.G. Allen (1991) studied fishes of Ballona Creek and Marina del Rey in 1990, then again in 1999. Doctor Allen identified 29 fish species and collected 6,063 individuals in otter trawl net surveys made in lower Marina del Rey and Ballona Creek. The Allen study was conducted between July 1990 and April 1991. The majority of 23 species and individuals (90 pct) were collected in Marina del Rey. Overall, the catch in lower MdR was characteristic of harbor environments throughout southern California, whereas the fish assemblage in Ballona Creek was relatively depauperate owing to the absence of highly abundant species, e.g., Northern Anchovy, Queenfish, and White Croaker, and others similarly tied to shallow marina habitats adjacent to estuaries and marinas in southern California (Allen 1985). Allen's catch was dominated by the following species,

- Queenfish
- Northern Anchovy, *Engraulis mordax*
- Cheekspot Goby, *Ilypnus gilberti*
- White Croaker, *Genyonemus lineatus*

Species captured *exclusively in Marina del Rey* were Queenfish, Northern Anchovy, and White Croaker, while the Cheekspot Goby was the most abundant fish captured in the Ballona Channel. California Halibut, Barred Sand Bass, Arrow Goby (*Clevelandia ios*), and Diamond Turbot (*Hypsopetta guttulata*) were captured in comparable numbers in both areas. Among these species, adults of all but California Halibut and Barred Sand Bass, by their size and habit, are available as prey for the study species, particularly the more capacious California Brown Pelican.

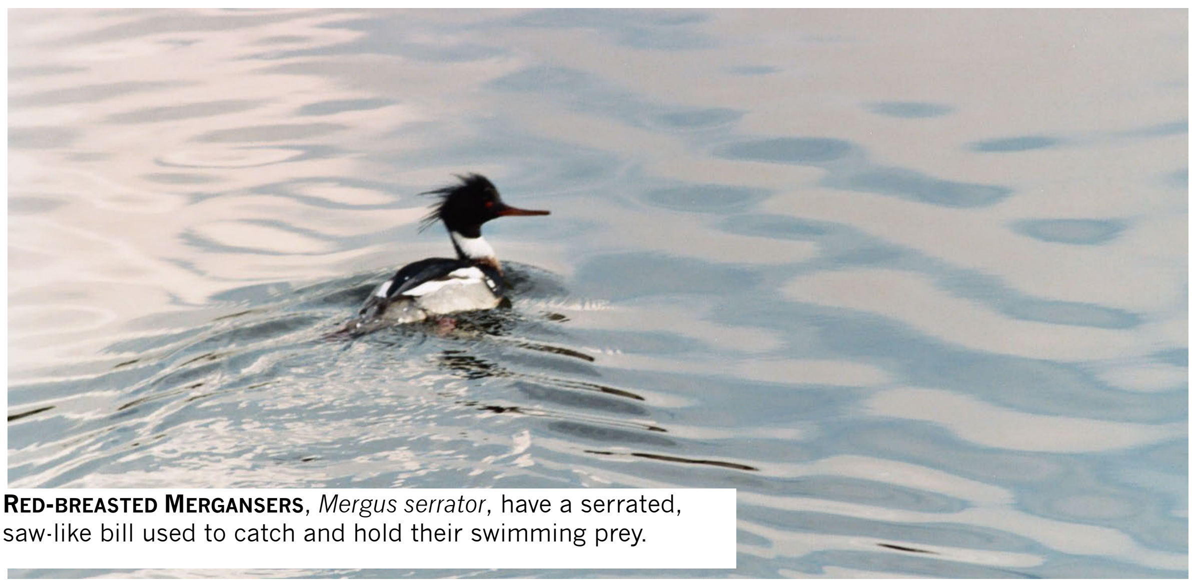
6.3 More on Suitable Bird Foods

During summer, Queenfish commonly inhabit shallow water around piers and pilings on sandy bottoms. They are found at below-surface depths to 180 ft; however, they occur more often from 4 to 27 ft below surface. In so doing, Queenfish are vulnerable to capture by diving pelicans and swimming cormorants and mergansers. Queenfish feed on small, free swimming crustaceans, small crabs, and fish. Adult Queenfish spawn in the summer; and their eggs are free floating. Tiny young Queenfish, less than 1 inch long, appear in late summer and fall; first at depths of 20 to 30 feet, gradually moving shoreward until they enter the surf zone when they are 1 to 3 inches long (CA Department of Fish & Game).

Sargo are schooling fish often found found in fewer than 40 feet below surface, and down to 200 ft in depth. Sargo congregate around structures such as rocks, kelp, oil platforms, and pier pilings. They are abundant in marinas under boats near mooring anchors and pilings. Young Sargo, which swim near the surface around piers and piles are suitable prey for stalking Great Blue Herons and Great Egrets, as well as swimming Red-breasted Mergansers, which have an affinity for pilings and mooring lines.

The breeding success of California Brown Pelicans ~ and Elegant Terns ~ is strongly correlated with the abundance of Northern Anchovy (see Schaffner 1986), whether taken near the birds' breeding grounds or in off-season habitats. This fish is particularly vital to the feeding and development of nestling Brown Pelicans (Anderson, *et al.* 1980; 1982). Southern California estuaries and bays provide important habitat for anchovy, which spends significant time in these habitats. Primarily feeding on planktonic crustaceans and fish larvae, the Northern Anchovy, in turn, is an important food source for species of fish including California Halibut (*Paralichthys californicus)*, rock fish, Yellowtail *(Seriola laland)*, sharks (multiple families), and both Chinook *(Oncorhynchus tshawytscha)* and Coho Salmon (*Oncorhynchus kisutch)*. The anchovy also is an important source of energy for marine mammals. Moser and Pommeranz (1999) detailed the vertical distribution of anchovy eggs and larvae; and, their work confirmed the earlier work of Ahlstrom (1959), which described the shallow habitat depth for the egg and larval stages of anchovy. About 95 pct of anchovy eggs and 90 pct of larvae were located in the upper 30 meters of the water column, including near-surface where they become prey for marine birds.

The eggs of Topsmelt are benthic (surviving at the lowest level in marina waters), and their larvae are planktonic and found near the surface in shallow and open water. Juveniles and adults are schooling pelagic fish; however, juveniles and adults will move into shallow waters to feed on the bottom. Benthic eggs are found in estuaries, bays, and lagoons. Larvae are also found schooling in embayments. Inside bays and harbors, Topsmelt will prey on a variety of fishes, squid, shrimp, octopus, worms, small crabs, and clams, living or dead



Red-breasted Mergansers, *Mergus serrator*, have a serrated, saw-like bill used to catch and hold their swimming prey.

7.0 PROJECT DESCRIPTION

The Boat Central project description is an adaptation of the developer's PD (January 2008 w/ modifications made September 2008).

7.1 Project Objective

Boat Central proposes to develop a state-of-the-art dry-stack boat storage facility to bring an increased and improved level of service to the marina boating community.

7.2 Project Scope

The Boat Central site is a 4.20-acre leasehold (including land & water areas) comprised of two contiguous parcels, 52R & GG, both facing Fiji Way. The project would accommodate approximately 345 boats and 28 boat trailers within the dry-stack building, and outside parking for 30 mast-up sail boats and a public waterside hoist. The boats will be delivered dockside upon reservation/request, fully fueled with the boaters option to order necessary supplies including food and drinks. A boat washdown facility will be incorporated on-site.

The project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two-story visitor building would have a gross floor area of 3,070 square feet and would house the Boat Central office. Contiguous with that building, the project will incorporate the existing Sheriff's Boatwright shop in a new two-story building (2,835 square foot building footprint with a 430 square foot second floor mezzanine) with an adjacent 2,200 square foot fenced yard. The Sheriff's boat dock will remain in place. The other existing public uses that include temporary office space and parking for charter fishing tours, will be relocated by the Department of Beaches & Harbors. Important from an environmental standpoint, no wet slip spaces are proposed, as all dock facilities will be reserved for the immediate queuing of boats scheduled for use.

7.3 Regulatory Framework

The MdR Land Use Plan designates the Property as "Public Facility[11]," a designation that does not allow the proposed land use.[12] The proposal requests an amendment to the MdR Local Coastal Program (*the LCP*) to designate the property instead as "Boat Storage[13]." The redesignation would be well aligned with the intent of the LCP -- as reflected in its goals and policies -- by providing enhanced recreational boating opportunities.

The Boat Central project will address a number of LCP policies including --

- ★ "Increased recreational boating use of coastal waters shall be encouraged, ...[14]"
- ★ "Facilities serving ... recreational boating industries shall be protected and, where feasible, upgraded."[15]
- ★ "Recreational Boating is a Top Priority. Recreational boating shall be emphasized as a priority use... the Plan shall strive to ensure that adequate support facilities ... including boat dry storage yards [are available to the public] ...[16]" "Additional boat storage facilities may be developed ... and dry stack storage may be constructed ....[17]"

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11 Marina del Rey Land Use Plan, Map 17.

12 Marina del Rey Specific Plan, Los Angeles County Code (LACC) § 22.46.1590-1600.

13 Marina del Rey Specific Plan, LACC § 22.46.1460.

14 California Coastal Act, Section 30224; Marina del Rey Land Use Plan page 3-1.

15 California Coastal Act, Section 30234; Marina del Rey Land Use Plan page 3-1.

16 Marina del Rey Land Use Plan, Chapter 3, Policies and Actions, § 1 page 3-4.

17 Marina del Rey Land Use Plan, Chapter 3, Policies and Actions, § 4 page 3-5.

The policy framework of the Local Coastal Program supports the expansion of dry-stack storage facilities within Marina del Rey. As such, the proposed amendment to redesignate the property from Public Facility to Boat Storage is consistent with the LCP and directly responds to priority objectives and policies of the LCP. Dry-stack storage provides environmental advantages and much less water coverage than would a comparable number of wet slips. Additional entitlements will be required, including a LACo Coastal Development Permit, a parking permit, and a State Coastal Permit from the California Coastal Commission.

7.4 Architectural Elements

Boat Central was designed to be visually sensitive to the marina environment in which it would be set; and, in part to do so, the project will use translucent polycarbonate (PC), or other similar material, as the primary architectural cladding. The PC material has several key benefits, and foremost is its ability to allow daylight to penetrate through the structure *to the water's surface* while providing a safe well-lighted workplace with a minimal electrical load. Another benefit is the longevity of polycarbonate: the UV and salt corrosion resistance is superior to most other available cladding products.

The lightweight nature of the polycarbonate panels allows the building mass to be broken down architecturally into a series of planes that will reduce the visual bulk *versus* what would happen were it made as a simple box-like structure, typical of enclosed dry stack facilities. According to the developer, there has been an intensive effort to study and choose a range of material colors for Boat Central, with an objective to be compatible with the surrounding sky and water. The overall program and content of the Boat Central project are illustrated by Figure 6 .

7.5 Public Shoreline Access

A basic objective and requirement of all development within the marina is improved pedestrian access to the shoreline, except where public safety is an overriding consideration. The Boat Central project will address a number of LCP policies that are focused on enhancing safe public access to the water. These policies include --

- ★ Maximum public access to and along the shoreline….shall be a priority goal of this Plan, balanced with the need for public safety, … [18]
- ★ All development shall be required to provide public shoreline access… [19]
- ★ All development in the existing Marina shall be designed to improve access to and along the shoreline.[20]

The project will answer the first-priority policy that would maximize public access to the shoreline, and do so by creating a waterfront park with direct access from Fiji Way. Signage will notify passers-by that the park is a public area. Furthermore, after construction, the tandem goal of preserving public safety will be met by construction of an enhanced walkway to the park, and that carefully segregates the public from potential hazards that are inherent in operating heavy machinery inside and outside of dry-stack storage facilities.

The waterfront overlook park area will incorporate landscaping, seating areas and a water fountain. The park is intended to be open during normal business hours. The public waterfront park, or overlook, will generally follow the character of the frontage road promenade. Approximately 30 ft by 50 ft, the park will offer ample opportunity for public access to the waterfront. It will utilize the same integrally colored paving as the promenade with an 8 ft-wide main walk, surrounded by groundcover. There will be a public area adjacent to the bulkhead, with benches provided.

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18 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 1 page 1-7.

19 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 2 page 1-7.

20 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 3 page 1-7.

As much of the access from Fiji Way to the park will double as a fire lane access corridor, it will be surfaced with *grass-crete* blocks, traversable by heavy emergency vehicles (to either side of the meandering 8-ft walk). At minimum, there will be 8 ft of planting alongside the dry-stack storage facility, including a row of palms, which will indicate the way to the waterfront. Because the area will perform triple-duty -- as a fire lane, accessway and view-corridor -- plantings will grow high enough to require occasional trimming to maintain views to the water. The park and its public and emergency access will add approximately 5,500 sqft of permeable surface to the Boat Central site for a total of 8,520 sqft.

7.6 Building Height & Massing

With respect to building height, the Boat Central property is subject to Category 3 regulations:[21] Dry Stack storage facilities normally are permitted to reach a vertical maximum of 75 ft, excluding the boat hoist mechanism, which may exceed the height limit. The maximum proposed height of the building above finished grade is 70 ft, exclusive of the crane that extends above by no more than 12 feet, but no more than 82 ft, overall.

Although the building would measure within official allowances, certain design elements will further reduce the total impact of the building's scale: The narrow ends of the building would be oriented toward Fiji Way and Basin H so the mass of the structure will not obstruct views of the harbor. In sum, the perpendicular alignment of the principal dry-stack feature, combined with the architectural elements noted above, will substantially reduce the visual scale of the proposed structure.

[21] LACC § 22.46.1880.

7.7 Parking

The proposal requests a parking permit that would provide fewer spaces than are required per the MdR Specific Plan. Specifically, the MdR Specific Plan requires the following ratio of parking spaces per boat stored (*ps-bs*) to be one half or 0.50 ps-bs.[22] The official ratio, however, is not supported by industry experience, which in turn shows that a ps-bs of 0.25 would be adequate for the proposed type of facility.[23] Additionally, project planners expect that the proposed parking area will be under-utilized on a near daily basis. Information from parking analyses indicates that a proposed Boat Central ps-bs ratio of 0.36 (based on 135 full-size parking spaces, including four stalls for disabled persons) will be at least adequate. For a limited number of peak periods, e.g., July 4th and Labor Day, when boat usage may cause the parking demand to approach the capacity of the proposed onsite parking, Boat Central will employ a valet scheme. In this scnario, the valet method would result in the addition of potentially 13 parking spaces, i.e., the special-event parking ratio would equal 0.40.

7.8 Landscape Treatment

The landscape design for Boat Central is intended to comply with the *Marina Walk Draft Design Guidelines*.[24] Hence, the project will include an 8-ft wide integrally-colored concrete walk along Fiji Way that would meander underneath Queen Palms, *Arecastrum romanzofianum*, and (unidentified) shade trees. Understory and ground cover generally will consist of drought-

22 Department of Beaches & Harbors to Boat Central, RFP respondents, 01 March 2005.

23 Linscott, Law & Greenspan report on Boat Central proposed parking ratio.

24 Draft Design Guidelines, The Marina Walk, prepared by Gruen, Jan. 1998.

tolerant species (native and/or nonnative) appropriate to the local Mediterranean climate[25]. In the parking lot, shade trees will be planted in diamonds between rows as a means to mitigate a "*heat island effect*." All planting within view corridors between Fiji Way and the bulkhead will be pruned as a means to frame views between the tops of cars and bottoms of shade tree canopies. Additional Mexican Fan Palms, *Washingtonia robusta*, will be used alongside the boat storage facility and to frame gangways. There will be a public park/overlook to the northwest water's edge on the site. The park will be designed with input from the Marina del Rey Design Control Board so as to best serve the visiting public. Access to the public park will be a pathway similar to the promenade along Fiji Way, with planting between path and structure to the east and grass-crete or similar unit pavers to the west (a fire corridor). The project landscape plan anticipates approximately 18,560 sqft of landscaped area, a net increase of 178 pct above existing conditions while providing a 50.0 pct site-wide view corridor.

16

A **Mediterranean climate** is one that resembles the climate of lands in the Mediterranean Basin (below), which comprises over half of the area with this climate type world-wide. In addition to areas surrounding the Mediterranean Sea -- Africa, Asia, and Europe -- the climate type prevails in much of southern and central California, in parts of Western and South Australia, in southwestern South Africa, and in parts of central Chile.

The climate is characterized by hot, dry summers and cool, wet winters. For example, the city of Perth, Australia, in the southern hemisphere winter months of June-August, experiences 18 in of rainfall and an average daily minimum of 46°F. Meanwhile, during the summer months of December to February the city only averages 1.30 in of ppt.

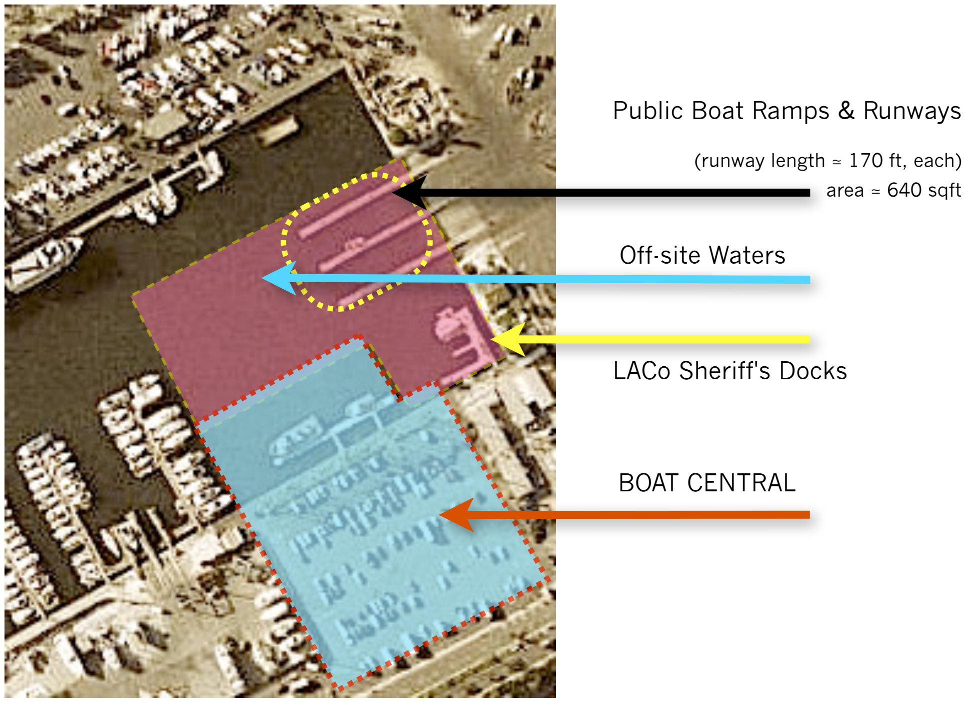

FIGURE **3** Boat Central and its immediate vicinity, including areas referred to, as the public launch ramps, docks and off-site waters (tinted in red).

7.9 Wind Effects

The dry-stack storage building will not have a significant affect on surface winds in the marina. As part of the project application, an analysis was prepared on potential effects of the dry-stack building on surface winds. The completed report will be submitted with the entitlement application to the Department of Regional Planning and will be used in the Environmental Impact Report for the project. The wind impact assessment, prepared by Rowan Williams Davies & Irwin, Inc., found that the project is expected to have minimal effect on wind conditions in the adjacent basins and Main Channel." [26]

[26] RWDI, Wind Impact Assessment for Boat Central, page 4.

7.10 Shade & Shadow Study

AC Martin Partners conducted a study of the year-round potential for shade and shadow effects of the dry-stack facility. The analysis demonstrated that the project will not have any appreciable effect on nearby wet slips or the public launch ramp. Water coverage by shadows occurs twice during the Winter Solstice, once each in the morning and afternoon (Figure 4).

7.11 Project Lighting

Lighting for the Project will conform to the dark sky initiatives of Marina del Rey. Site lighting is expected to be at minimum legal levels throughout the surface parking area, with cutoff fixtures used. Lighting inside the dry stack storage facility will be down light only, enough to provide safe working levels for the crane operator and staff, approximately 40 footcandles (40 lm/ft2). Very little of that light will leak outside, as the stored boats will shade much of the surface from the inside; further, the polycarbonate material used to clad the building has a high shading co-efficient which will block more of the direct light. Overall the general design intent is for a soft glow of internal illumination. The hours of operation of the dry stack facility will be limited as well, and lights will be on in the Project for significantly fewer hours than in the neighboring shopping center.

7.12 Waterside Project Elements

The waterside portion of the Boat Central project includes the construction and operation of a variably-configured boat dock (Figure 5). The dock will be accessed via a pile-supported platform, and an ADA accessible ramp will be jointly used by Boat Central customers as well as the Sheriff's Department employees. The system will include a boat queuing basin and a dock system that will consist of seven finger-piers for tenants to use as temporary tie-up when

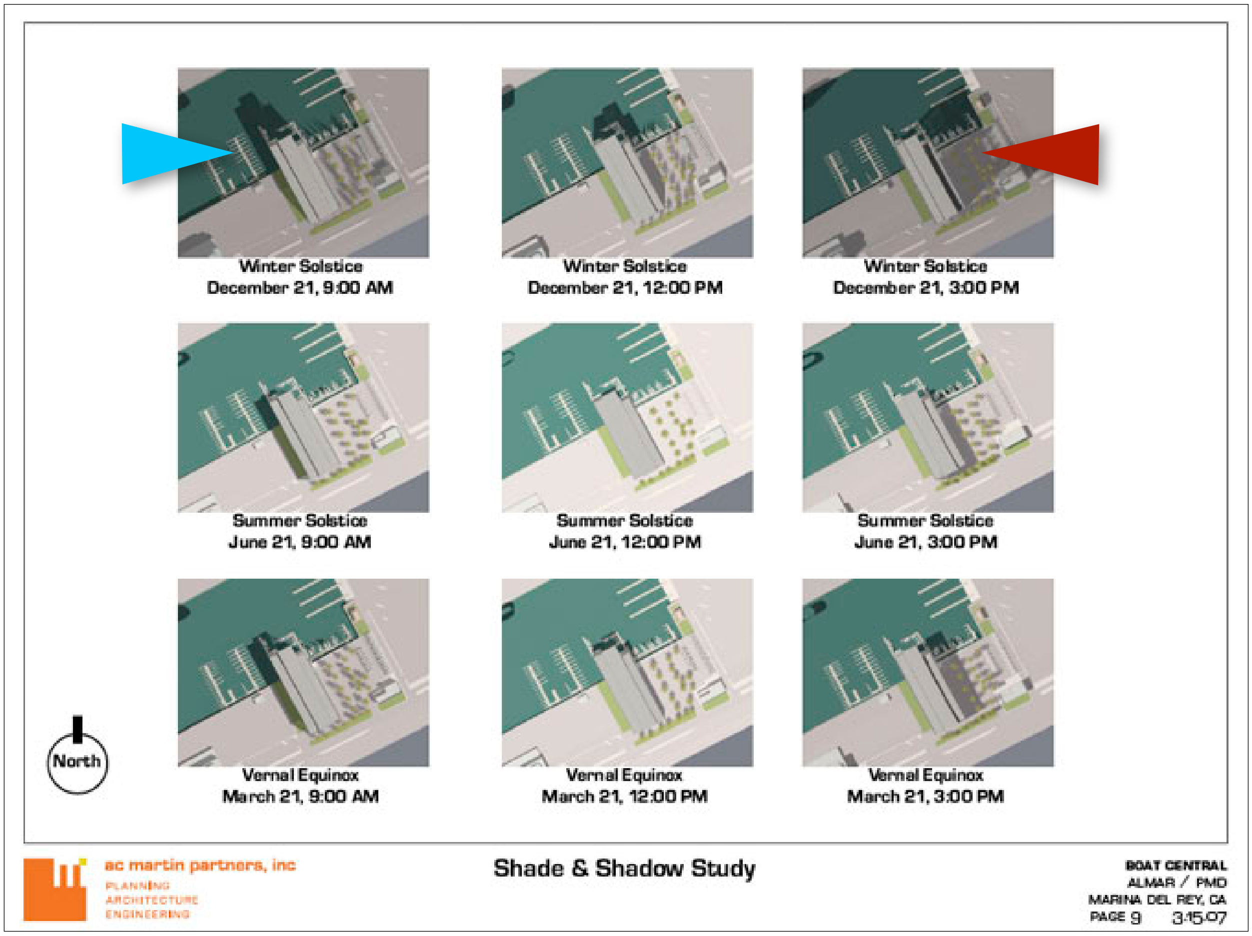

FIGURE **4** Shade and shadow study of Boat Central (AC Martin Partners, 05 Mar 2007) and added arrows to indicate (**red**) time and date when cast shadow is closest to the public boat ramps and attached docks; and (**blue**) when shadow over water is largest in extent.

departing and returning to the facility. No wet slip spaces are proposed, as the dock facilities will be reserved for the queuing of boats scheduled for use.

Existing Facility -- The approximate surface area of the existing dock and ramp at the project site is 1,690 sqft. Fourteen, 16-inch diameter piles (19.5 sq ft of surface area) will support the dock and ramp.

Proposed Facility -- Based on preliminary dock surface area calculations, the total surface area of the proposed dock queuing system is estimated to be 6,500 sq ft. The surface area of the proposed thirty, 16-inch diameter piles is 50.7 sq ft.

7.12.1 Building Materials

The building materials associated with the new floating dock system and the limited new piles to be driven in place, are of interest to this environmental study. The new floating docks system will consist of prefabricated, lightweight, aggregate concrete modules. Expanded polystyrene flotation is completely encased in a reinforced concrete shell, which is impervious to marine borers. Concrete encasement on all six sides provides maximum strength and protection. Galvanized steel rods pass through conduits cast into the Unifloat(R) units and are fitted with nuts and special washers on each end. Galvanized steel frames are included to provide high-strength connections at the critical joints between finger piers and main walks. Galvanized iron cleats, fiberglass locker boxes, marine-grade Medium Density Polymer (MDPE) used on triangle frames, stainless steel substations, Ultra High Molecular Weight (UHMW) pads, and marine-grade vinyl fenders are included in the project. No creosote treated wood products are included in this new concrete dock.

7.12.2 Construction Details

The proposed marina project includes installation of the new concrete floating dock system, pile-driving and installation of new utilities. If applicable, demolition will occur by removing sections of existing docks and removing them by crane onto trucks. These existing floating docks will be disposed off-site at a legal disposal site such as Puente Hills Landfill in Whittier, CA. New floating dock sections will be delivered by truck and offloaded by crane into the water. These new floating docks will be towed with a small skiff to their final location. Approximately 30 pre-stressed 16-inch square concrete pilings will be emplaced to support the dock system. New piles will be driven through openings in the floating docks to anchor them sufficiently. Pile driving will be accomplished with a crane located on a floating barge. The methodology of pile installation is a combination of jetting and driving. Piles will be jetted in place, through the floating dock system, and the last five feet of each guide pile will be driven to their final tip elevation. The methodology of pile removal will be accomplished with the crane and floating barge as well. In all pile-driving locations, turbidity screens/siltation curtains will be utilized around each piling to be driven or removed to assist in isolating the work area from potential water quality impacts related to construction.

7.12.3 Project Timing

Dock installation and pile-driving are expected to take approximately three months to complete, and would likely be conducted in the fall/winter season.

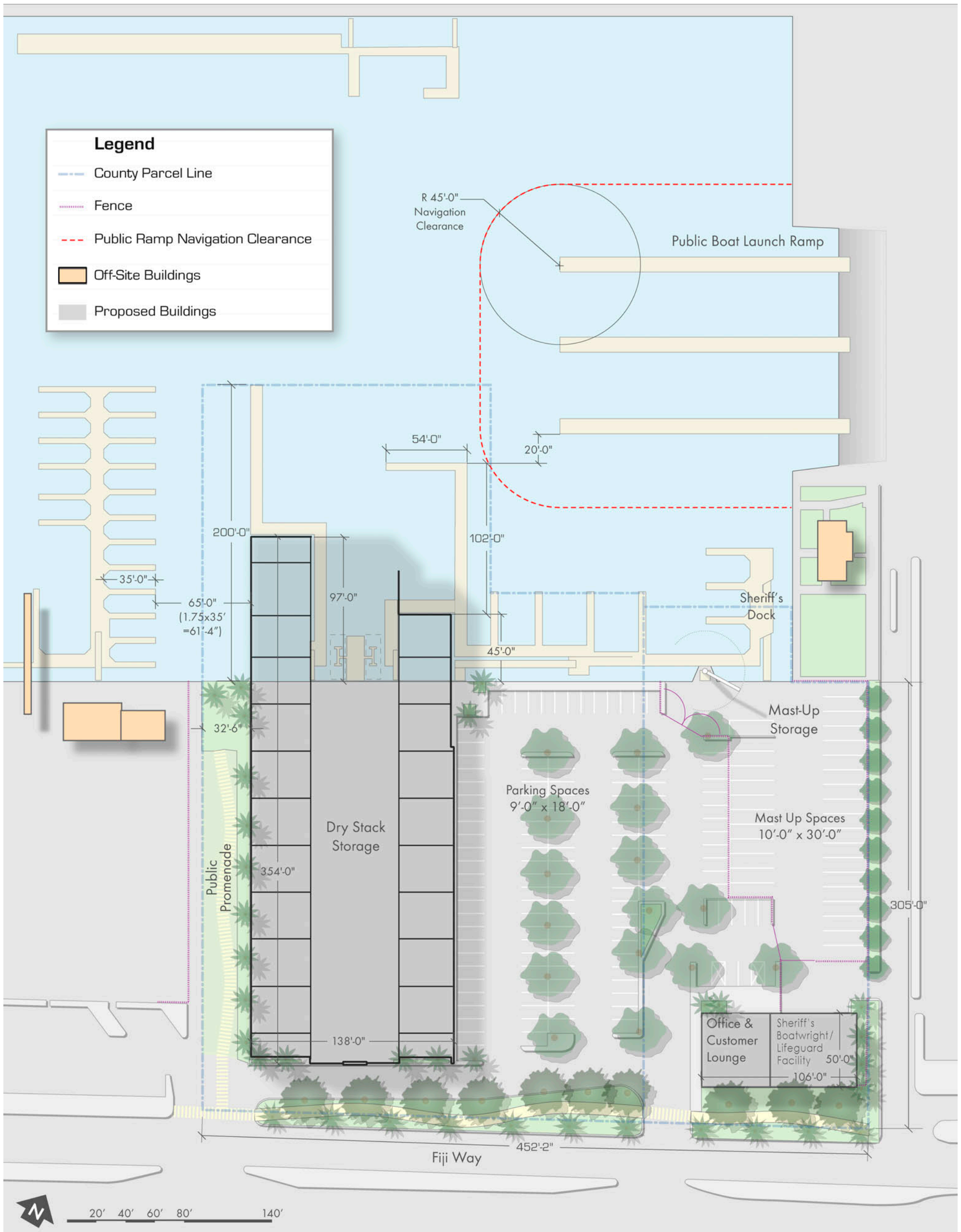

FIGURE **5** The plan for Boat Central: All features inside the Boat Central parcel line (light blue dashed) are proposed for development.

8.0 FINDINGS

8.1 Bird Observations

The following bird species, which are of primary interest to this study, were observed seasonally or year-round over the course of the 2006-2008 study period. Observations focused on the animals' association with the Boat Central site and its *immediate vicinity*. Specifically, the vicinity includes the open water area outside of the Parcel 52R water area and the adjacent public launch ramps and docks (see Figure 5, above).

The following profile for each species of *primary interest* includes the location and description of the sites used by the birds. As previously introduced, the profiled species are

- *Brown Pelican*
- *Double-crested Cormorant*
- *Great Blue Heron*
- *Great Egret*
- *Snowy Egret*
- *Black-crowned Night-Heron*
- *California Least Tern*

California Brown Pelican

Pelicans loaf (*1-2 at any one time*) during the daytime on the public docks next to the launch ramps, as they do on docks throughout the marina (e.g., the fuel station at A-300, law enforcement docks used by the USCG and LACo Sheriff, and public docks in front of Fisherman's Village). Small numbers of pelicans drift in the water by the public launch runways, and near the 52R dock. Pelicans do not forage while drifting and swimming.

Double-crested Cormorant

While pelicans loaf on docks inside the project area and vicinity, and there tolerate human approaches at a distances greater than 50-100 ft, with exceptions, cormorants appear to be more skittish about approaching human activity (on the ground). The birds, however, sun on the launch runways, but have not been observed to do so on the project dock. Large numbers of cormorants (up to 40) perch and roost in cypress trees, *Cupressus macrocarpa*, situated at the distal end of Fiji Way, next to the Coast Guard Station, 2,800 ft west of the project area. Cormorant foraging inside the project area appears to be incidental to their regular patterns and only small numbers (1-3) have been observed swimming in the project waters at any one time.

Among the herons, the least skittish around fishing vessels in MdR and other southern California harbors is the **SNOWY EGRET**, which will hunt for live baitfish in the bait holds of returning day boats.

The Herons

From time to time, individual Great Blue Herons and Great Egrets will land on the public launch ramp and docks, perhaps to sun but apparently not to hunt. Heron use is better characterized as infrequent short-term landing, possibly from being drawn to their common association with loafing pelicans. While use of any docks by the two larger herons, whether inside or close to the project area, is infrequent, Snowy Egrets, singly and in groups of 2-10, regularly land on the Parcel 52R dock to forage. The egrets search returning recreational day-boats for live baitfish strewn on deck during wash-down or contained in the onboard bait holds. The Snowy Egrets leave the area after the fishing boat(s) have left the docks and are underway.

Although not observed of Black-crowned Night-Herons on either the project or public docks, these nocturnal birds engage in onboard foraging behavior inside Dana Point Harbor, where day-boats return after sunset and at dusk. Night-herons were observed on neither the onsite nor offsite docks and boat ramps during this study. While most surveys took place during the daytime or at dusk, i.e., outside of the birds' normal foraging period, three overnight study sessions also failed to detect use of the site or its vicinity by the species. Nevertheless, hunting Black-crowned Night-Herons are known to frequent docks and boats inside MdR, as well as in Dana Point and Channel Islands harbors (personal observations). In view of this background, the species' use of the launch runways, and possibly the project dock, can be reasonably expected or predicted.

California Least Tern

Least Terns infrequently fly over marina shallows as far back as the study docks and adjacent ramps. More often, terns hunt farther into the embayment. As seen only once, terns may briefly fly over the study site, but to return for a run over the deeper and wider waters of the marina channel. Least Terns were not observed landing on either the docks or ramps.

9.0 ASSESSMENT & ANALYSIS

Herein, the birds placed on the list of *secondary species* is incomplete, and it would not be unexpected to see additional birds fly or swim onto the project site. However, the selected species adequately represent most, if not all, of species expected, or not expected, to occupy the site in the future. The list is diverse enough ecologically to stand in for other, related and similar birds that may occupy the Parcel 52R docks, or on the public launch runways that is several hundred feet distant. For instance, if a Ring-billed Gull, *Larus delawarensis*, which is a 'familiar parking lot bird' (Ryder 1993; Cornell Laboratory of Ornithology 2007), were to occupy the project site, all of the consideration previously given to the Western Gull and Heermann's Gull would suffice.

The following assessment is based on (1) knowledge from the author's professional experience, (2) new data from the present study, and (3) findings gleaned from informed ornithological sources.

The assessment first identifies reasonable circumstances that might develop during the course of the construction project and after its completion (occupancy and use), then applies this information to what is known and expected from the birds. In view of these circumstances and possible other factors, this assessment will consider potential short- and long-term effects on the birds in question. Table 1 summarizes realistic circumstances by which birds on the *primary species* list could be impacted by the project.

9.1 Potential Disturbance Circumstances

(A) PROXIMITY – The proximity of humans to birds during construction

(B) NOISE – Mechanical 'noise' from equipment may encroach during construction

(C) SHADE – Diurnal effects of shadow cast by the new structure onto the local area

(D) TURBIDITY – Marine construction activities may increase local turbidity levels

(E) COLLISION – Flying birds may collide with the glazed surface of the new building

Proximity

The issue of human proximity as it affects wildlife is basic to forecasting the impact of development activity on species, especially vertebrates. How closely animals will tolerate the presence and actions of humans will vary according to an array of biological and ecological factors expressed by the species and its surroundings (Cooke 1980; Dhinsda & Boag 1989; also, see Heatwole 1968 and Cooper 1997), and to the nature of the approach by the human/s, for example, its mode of travel (Kucera 1976). The relationship is the *flushing distance,* and it is defined as simply as 'how close one can get to an animal before it flushes' (Wang et al., 2004). Flushing distance should not be confused, as it often is, with *nest defense* and *protective flight* to avoid or misinform an advancing predator, *fide* the broken wing display of nesting Killdeer *(Charadrius vociferous)*; (Barash 1975; Burham & Thompson 2001; Gunness & Weatherhead 2002). An increasing group of authors now is examining flushing distance with respect to recreation ecology, including waterside activities and 'ecotourism' (Liddle 1997; Hammit & Cole 1998; Newsome et al. 2001, and others). Another avenue into this ecological arena is studying the distance separating predator and prey when the predator begins to approach, referred to as the starting distance (e.g., Cooper 2005).

Noise

It is well established that human-related noise can produce adverse effects on the nesting efforts and success of marine birds (Burger 1981; Rogers & Smith 1995; Demarchi & Bentley 2003; Kipple & Gabriele 2007). Where effects of noise on nesting or would-be nesting birds is a threat, managers and scientists employ noise mitigation and minimization strategies, both successfully and unsuccessfully. In addition to reproductive disturbances caused by human-associated noise, as may be emitted by voices, boat motors, helicopters, drilling operations, and compressor units, there are critical environments where potential disruption to migration staging and pre-flight foraging sites is a major concern. Authorities in these matters are, e.g., Ellison & Cleary (1978); Rogers & Smith (1995); Burger (1998); Ronconi & St. Clair (2002); McShane (2004); Gurd *et al.* (2004); Whidden *et al.* (2007); and comprehensively the Federal Highway Administration (FHWA 2007). Most work in the field is not published *per se*, as in journals and scientific proceedings; rather documented management theories and results are 'buried' in locally produced mitigation project reports, governmental and commercial. Comprehensive inquiries to the effect of quantitatively measured noise on wildlife, including numerous bird species, was recently synthesized by the Federal Highway Administration (2007).

In review of the potential effects of noise on target bird species inside the project area, it is important to distinguish that birds associated with the project do not nest, either onsite or within its immediate vicinity. Elsewhere in MdR , nesting waterbirds are capable of recognizing and habituating to the regularized conduct of noise and sounds by humans at close range (<20 ft). In the case of Great Blue Herons, Snowy Egrets, Black-crowned Night-Herons nesting inside MdR, the return of the herons each year to last year's nest is evidence of their tolerance of highly urbanized sounds (Froke 2006, 2007). The closest active colony or individual nest site is that of Great Blue Herons, which nest at the western end of Fiji Way, approximately 2,800 ft SW of Boat Central. The next closest colony (or subcolony) in the marina is 3,800 ft distant on the north side of the main channel. Further, the project site and its immediate vicinity in Basin H provide no critical staging or 'fattening' stations for migratory birds. Birds' use of the site, as previously described, involve loafing, sunning, and limited opportunistic foraging by small numbers, all in a manner that is replicated and surpassed throughout the marina.

Speculative sound types produced by the temporary machinery used to build Boat Central would include, for example, engine and percussive noise from compressors, pile-drivers, and jackhammers. From experience with marina waterside construction and sound attenuation near protected wildlife sites, it seems reasonable to predict such sounds would conform with ambient weekday conditions in the busy marina, pneumatic jackhammers excepted. In particular, landside and waterside construction would generate the types and levels of sound that resemble those produced by ongoing marina and boat operations, e.g., boatyards located as near as immediately west of 52R. At a qualitative level and using quantitative evidence (FHWA 2007), construction sounds from the project would be unlikely to significantly disrupt local wildlife in the project area and around Basin H. As construction is completed, and operations are underway, the threat of impact from new and loud sounds will disappear and make way to regular ongoing sounds and rhythms of the harbor basin and dock environments.

Shading

Shading effects, which include reduced insolation ~ onto the surfaces of both bird's bodies (direct) and habitat surfaces (dock platforms) ~ is a reasonable course of inquiry, and there exists a large amount of study on the former. However, the research is virtually exclusive to matters of heat metabolism and physiological responses of the animals to increased insolation and stress, and not to momentary removal or reduction of sunlight and its effects. A second immense body of experimental study is focused on effects of sunlight and its reduction on growth patterns and productivity of plants, both as habitat and a direct source of energy for birds and other taxa. The topic of momentary removal or reduction of sunlight and its qualities on wild birds, as would be caused by transient shadows or shade, is not a matter of noticeable interest, whether to do with nesting or non-nesting species.

From intuition and a dearth of science in this matter, as suggested above, it is reasonable to conclude that short-term shading on perching or foraging waterbirds in the marina is not vital to bird welfare. Further, the recent *Shade and Shadowing Study* prepared for Boat Central by AC Martin Partners (2007; Figure 4) sufficiently demonstrates the *deminimus* period and extent of shading and shadow that would be caused by project development. In sum, the preceding analysis supports an early conclusion of *no potential impact* on the study species, including their own infrequent and/or transitory, occupation of the shaded area.

Turbidity

The bottom of the MdR harbor basin is comprised of sand and mud. Under winds, vertical mixing brings fine sediments, suspended near the bottom, up into surface waters. Typical surf outside the harbor also keeps fine sediment particles suspended in layers above the bottom. The system of naturally-occurring turbidity and suspended loads of solids provides the background levels useful to evaluate the addition of localized sediment sources from construction activities.

Collisions

Collision refers to the potential for flying birds of any species, including frequently passerines (songbirds), to collide with glass and glass-like surfaces of both reflective and non-reflective buildings. For background on the serious nationwide and worldwide problem of bird collisions with buildings (@ *billions per year*), and which oftentimes are fatal, see Ross (1946), Klem (1989, 1990, 2006), Malakoff (2004), and the Swiss Ornithological Institute (2004). From a growing discussion of the matter, there is a consensus recommendation made by researchers and involved bird conservation groups to architects and developers: It would be beneficial to nature to forego or carefully mitigate the design and application of transparent (or reflective) glass in situations where birds may mistake the hard surface for free travel through open air. Basic alternatives are to instead replace glass with either translucent glass or compounded non-transparent materials.

In effect, non-transparent and non-reflective materials would appear to flying birds as an planar surface or mass, thereby precluding the risk of the birds to misinterpret and collide with the solid plane. As both a practical and green design measure, the design of Boat Central specifies that the building will be cladded with a translucent polycarbonate or very similar material.

9.2 Bird Responses to Environmental Change

The proceeding information focuses on the species-specific response of marine birds' to the potential circumstances of Boat Central, *minus* the same shading element that was discounted after being identified above. Below, additional assessments are made where there continues to be a plausible risk of adverse effect on the birds. These assessments will include:

- The levels of potential impact per species (low-medium-high);
- The significance of noted impact per species; and, if appropriate or required,
- The potential to minimize and/or avoid significant project effects, and
- The alternatives to persistent and adverse project actions and circumstances

9.3 Expected Response of Birds

Brown Pelicans

Brown Pelicans likely will use the public launch docks less frequently and for shorter periods of time than at present during active construction of the Boat Central waterside elements. The change of use will occur when waterside demolition and construction activities are underway; and their avoidance will diminish during construction down-times. Avoidance of the site by the few pelicans that already use the site (*for loafing, only*) will be intermittent and in-step with ongoing construction work and resting phases (weekends or longer periods). Pre-project levels of use of the boat launch docks will resume after construction has finished.

Existing scientific evidence demonstrates that the approach of humans, i.e., construction workers, on land and by foot will elicit a greater escape response from loafing pelicans than would approaches by persons and craft in the water (Wright *et al.* 2007; Schreiber and Risebrough 1972; Schreiber 1979; Anderson and Keith 1980; Stiles 1984; Kushlan and Frohling 1985; Anderson 1988). The principle is based on the birds' familiarity with nearby watercraft and the 'predictability' of the approach outcome. Project-related access by workers to the public launch and docks would be infrequent, if at all; and access would be in the course of launching and landing construction craft.

It is likely that marine foraging conditions would be temporarily degraded if elevated turbidity associated with waterside and landside construction were to occur, and particularly if it escaped the work containment area (see *Recommendations*). Increased turbidity would diminish pelicans' visual location of prey, potentially in both on- and off-site marina locations. The problem of turbidity, which is discussed below, would be universal among marine birds that normally forage for fish and other marine life near the project and adjacent waters.

Double-crested Cormorants

While drying on the public launch docks, cormorants might be disturbed by the approach and actions of construction workers when they are engaged in both on-land and in-water construction activities. As a result, the birds would swim and forage less often in the project area than they do at the present - pre-construction - time, which is nominal. The same concern about turbidity applies to cormorants as pelicans.

The Herons

Great Blue Herons and Great Egrets, which infrequently use the public docks for resting and hunting, would be minimally affected by project activities, i.e., by the movements of construction workers and by diminished foraging quality associated with elevated turbidity. Snowy Egrets, however, would lose an opportunistic food source when day-boat access is reduced or eliminated; and in this case, however, the turbidity question would not apply. It is also possible, but not known, that the current day-boat traffic would relocate, and very likely taking the egrets with them. The effect of construction on Black-crowned Night-Herons is more speculative, and likely to be less than the other herons, due to insubstantial data on the species' nocturnal use of the area. Nevertheless, the removal of the Parcel 52R docks (length of 170 ft) could mean the loss (or relocation) of an existing foraging platform for the night-herons. Then again, the existing docks will be replaced onsite with new ones at a length ratio of approximately four:one (400 pct); and night-heron use would resume, if not be enhanced by the additional platform length.

TABLE **1**. Circumstances by which primary bird species potentially would be affected by project demolition & construction activities

V SPECIES : CIRCUMSTANCE >	PROXIMITY	NOISE	SHADING	TURBIDITY	COLLISION
Brown Pelican	L	L	--	F	--
Double-crested Cormorant	S	S	--	F	--
Herons	S	S	--	F	--
Least Tern	--	--	--	F	--
	L = Loafing; S = Sunning; F = Foraging				


Red-breasted Merganser *& unidentified fish prey*

California Least Terns

California Least Terns fly over the study area and likely forage in the adjacent waters, the birds apparently do not land or rest onsite or in its vicinity. While there is a major breeding colony of the species at nearby Venice Beach (Dockweiler State Beach), the birds' use of the marina for foraging is viewed to be the lowest of eight available types of foraging habitats in the MdR-Ballona-Venice neighborhood (Atwood & Minsky 1983). Nevertheless, the terns forage heavily on Topsmelt, Northern Anchovy, and Jacksmelt (*Atherinopsis californiensis*) in the shallow ocean waters at Venice Beach; and all of the three fish species are present in the marina. On the other hand, on a single day (14 July) of a yearlong study, 12 percent of the total fish catch by terns in the same marina-channel-beach neighborhood were caught in the main channel of the marina, across from the USCG Station. Fish populations, including species favored by Least Terns would not be affected by Boat Central, in either the short- or long-term. However, potential elevation in turbidity levels in the marina channel, as could result from an unmitigated release from Boat Central construction, would temporarily impair terns' hunting in that area.

TABLE **2**. Predicted level and persistence of project impacts to bird species of primary interest, including a finding of significance that is based on available information, present observations, and experienced professional judgement.

∨ SPP : CIRC >	PROXIMITY	NOISE	TURBIDITY	SHADE	COLLISION
CA Brown Pelican	L T *ns*	L T *ns*	M T *ns*	--	--
Double-crested Cormorant	L T *ns*	L T *ns*	M T *ns*	--	--
Herons (4 spp)	L T *ns*	L T *ns*	L T *ns*	--	--
CA Least Tern	L T *ns*	L T *ns*	M T *ns*	--	--
	L - Low; **M** - Medium; **H** - High // **T** - Temporary or Transient; **P** - Permanent; ***ns*** - *nonsignificant*; ***s***- *significant*				

Additional Bird Species

The *secondary* group of species shares with the primary group an ecological interest in the study area and vicinity but for different reasons and purposes. None of the secondary group of birds is listed or proposed for listing as a special-status species. The birds include

- Western Grebe
- Eared Grebe
- Heermann's Gull
- Ring-billed Gull
- Red-breasted Merganser

Grebes ~

Owing to the rearward placement of their legs (*see illustration, below*), Western Grebes and Eared Grebes are restricted to life in water, and briefly are in flight relatively briefly (see illustration, below). Aside from nesting on the edge of water (often in *floating* nests), grebes cannot fly or jump onto elevated surfaces, such as docks, to rest. Grebes' sole interaction with the site is to swim and forage alongside. As swimming/diving predators, grebes will avoid the immediate vicinity of Boat Central during waterside and in-water construction activities. As predators of small fish and crustaceans, both species would be adversely affected if temporary turbidity levels were to temporarily increase, as by in-water construction.

EARED GREBE
© Cornell Laboratory of Ornithology

Great Egrets, *Ardea alba*, at least 18 at a time, inhabit the busy fishing docks and bait barge at Fisherman's Village in Marina del Rey, where fish is abundant during wash-downs of multiple boats. Attendance at Parcel 52R and vicinity is less frequent and usually by individuals, only.

Gulls --

Heermann's Gulls and Ring-billed Gulls are among the most common gull species in Marina del Rey. Their presence and activities with respect to the project site and vicinity are similar: Both gulls loaf on asphalt parking surfaces, docks, runways and launch ramps. And, each searches the same aboveground surfaces and waters for both live prey and inanimate foodstuffs. The gulls may avoid, or more likely spontaneously avoid, the site during construction; but the birds will likely return during even short breaks and permanently after completion. An increase in construction litter would attract scavenging gulls, but would not be viewed as a beneficial food source.

Waterfowl ~

Red-breasted Mergansers visit southern California harbors from fall through early spring. In common with grebes, mergansers dive from the water surface to chase fish, crustaceans and insects, and do so more often around pilings, submerged structures and rocky crevices. Mergansers, which currently swim into the project waters, likely will avoid the area during construction if possible noise and water disturbances are present. And, like the other waterbirds, the effectiveness of their foraging would be temporarily impacted by potentially elevated turbidity, and would thereby encourage them to vacate the affected waters during construction periods. Also, the momentary loss of (old) pilings would possibly reduce available foraging features for the birds, but at a level that would be deminimus marina-wide, or just within Basin H.

RED-BREASTED MERGANSER
© Cornell Laboratory of Ornithology

10.0 IMPACT EVALUATION

There are predictable impacts to the study birds that would result from execution of the proposed project, especially during its construction. These impacts would be according to the ecological circumstances described in the preceding section; and the impact levels are summarized in Table 2, above. Here, if impacts are determined to be moderate or high ~ which none were ~ realistic effects on the birds would be further discussed, per species. If an impact is deemed significant, i.e., it would potentially hinder or threaten the continued presence of a *primary* species, methods to reduce the level of significance (to *less than significant*), or to find alternatives to the offending action and/or circumstance, would be evaluated.

10.1 Levels of Impact

None of the primary or secondary birds would be adversely affected to a significant degree by the predictable actions of the Boat Central project. Only three of the five project circumstances apply to any of the birds, and none to a high level. Of the three active circumstances, only the matter of turbidity would potentially rise to greater importance. Turbidity ranked a medium or moderate level of notice for three of the four species/species groups (read the following *Primer on Turbidity*). The full set of potential impact issues are queried and answered in Table 3, below.

PRIMER on COASTAL TURBIDITY

What is turbidity?

Turbidity is a measure of water clarity or murkiness. It is an optical property that expresses the degree to which light is scattered and absorbed by molecules and particles. Turbidity results from colored dissolved organic matter (CDOM) and suspended particulate matter in the water column. Suspended particulate matter may include clay and silt (*e.g* suspended sediment), and detritus and organisms (algae and zooplankton). Degree of turbidity and changes in turbidity levels in coastal and estuarine waters are an indicator commonly used for environmental reporting.

What is the significance of turbidity?

Water clarity is a major determinant of the condition and productivity of an aquatic system, and of the tractability of water for human consumption, recreation and manufacturing. Increased turbidity can change an ecosystem significantly. Suspended sediment particles control the transport, reactivity and biological impacts of substances in the marine environment, and are a crucial link in interactions between the seabed, water column and the food chain.

The most obvious effect of increased turbidity is a reduction in light available for photosynthesis. Phytoplankton and free-floating macroalgae are better competitors for light than benthic plants (including seagrasses), and will tend to out-compete them as light becomes limiting during progressive eutrophication. Competition between the benthos and pelagic communities for light and nutrients also gives rise to hysteresis effects. Notwithstanding these effects, turbidity also controls the phytoplankton biomass that can potentially develop, and therefore the extent to which dissolved nutrients can build up in the water column. With high concentrations of nutrients in the water column under turbid conditions, denitrification may become coupled to water column nitrate rather than to nitrification.

Suspended sediment can smother benthic organisms and habitats when it settles, and can cause mechanical and abrasive impairment to the gills of fish and crustaceans. Suspended sediment also transports contaminants (particulate nutrients, metals and other potential toxicants), promotes the growth of pathogens and waterborne diseases, makes pathogens and waterborne diseases, makes marine pests difficult to detect and can lead to dissolved oxygen depletion in the water column if it is caused by particulate organic matter. Overall, *unnaturally high turbidity levels can lead to a reduction in the production and diversity of species*.

Reference: www.ozcoasts.org.au

TABLE 3. A summary of species impact issues that are asked and answered in this report.

WOULD ANY OF THE ADJACENT > CIRCUMSTANCES OF BOAT CENTRAL	PROXIMITY	NOISE	TURBIDITY	SHADE	COLLISION
Substantially affect or threaten the ecology and welfare of a rare, threatened, endangered, or candidate bird species, or the habitat of such species?	NO	NO	NO	NO	NO
Substantially diminish or degrade the marine habitat of any marine bird, including its prey base?	NO	NO	Potentially Ⓐ	NO	NO
Result in the notable net loss of a biotic community that is subject to local, state, and/or federal regulations or that is otherwise of very limited occurrence in the region? **or,**	NO	NO	NO	NO	NO
Significantly interfere with the movement of any resident or migratory wild animal species?	NO	NO	NO	NO	NO
	Ⓐ Potentially elevated turbidity in surrounding waters would degrade foraging conditions for diving and plunging predators including pelicans, cormorants and terns; also grebes and marine ducks, including mergansers.				

11.0 RECOMMENDATIONS

11.1 Special Management Requirements

Findings and analyses in this report indicate that one aspect of project construction, if unabated, would result in the degradation of habitat values (foraging conditions) for a particular group of bird species, including two that are federally-listed as endangered. *Although construction-related turbidity would be temporary and dissipate after containment or when work has been either suspended or completed, an episode still would represent a significant source of marine contamination.* In general, an increase in the amount of suspended particles will decrease the amount of sunlight in the water column, and that would threaten to (1) reduce primary productivity and photosynthesis, vital elements of affected communities, and (2) hamper foraging ability and success by predators that require visual contact with their prey. Therefore,

To prevent escaped particulates and associated debris (floating or suspended) from threatening to or actually harming the ecological communities and any of the primary bird species, in particular the two federally-endangered species, the project applicant should ensure readiness to contain and mitigate turbidity and debris. Specifically, project management should be prepared to ...

1. Hire only well-qualified marine contractors -- for demolition and construction -- who are familiar and practiced with the protective issues associated with the elevated turbidity and debris levels, and who are capable to manage the methods and materials required to contain contaminants within a limited work area and to mitigate its potential escape outside of that area;

2. Provide for the containment of moderately to excessively turbid conditions (i.e., above pre-project ambient conditions) and construction-originated floating debris within the project worksite by maintaining onsite an operational and appropriately fitted and rigged outfit of silt curtains [a, below] and booms [b, below].

   (a) Turbidity curtains are suspended underwater barriers designed to capture and control the dispersion of silt/sediment in a body of water (see Figure 7-A below);

   (b) Floating booms are floating mechanical barriers used to control the movement of floating that float (see Figure 7-B below).

11.2 Best Management Practices ~ Construction

In addition to the specific management issue of turbidity and debris, and the recommended obligation of the project to protect birds and other marine life from construction-related water contamination, there are general conservation concerns that would involve onsite resources and their protection from construction debris. Recommended steps to protect marine resources from construction debris are included in the following Best Management Practices (BMPs).

11.3 Construction Responsibilities and Debris Removal

(A) No construction materials, equipment, debris, or waste will be placed or stored where it may be subject to wave, wind, or rain erosion and dispersion.

(B) Any and all construction material shall be removed from the site within ten days of completion of construction and disposed of at an appropriate location.

(C) Machinery or construction materials not essential for project improvements are prohibited at all times in the subtidal or intertidal zones.

(D) Floating booms used to contain debris discharged into coastal waters and any debris discharged will be removed as soon as possible but no later than the end of each work day.

(E) Divers will recover non-buoyant debris discharged into coastal waters as soon as possible after loss.

(F) Erosion control/sedimentation Best Management Practices (BMPs) shall be used to control sedimentation impacts to coastal waters during construction. BMPs shall include, but are not limited to: placement of sand bags around drainage inlets to prevent runoff/sediment transport into MdR and a pre-construction meeting to review procedural and BMP guidelines.

(G) The applicant shall dispose of all demolition and construction debris resulting from the proposed project at an appropriate location. If the disposal site is located within the coastal zone, a coastal development permit may be required before disposal can take place.

11.4 Best Management Practices ~ Post-construction

In view of a project design element that strictly limits all long-term boat storage and all boat repair and cleaning activities to landside facilities of Boat Central, no additional BMPs for the project, including post-construction provisions for e.g., sediment and erosion control, debris collection, and use and storage of petrochemical and toxic hull cleaning products are required.

12.0 CONCLUSION & IMPACT STATEMENT

All identified threat factors that *potentially* would harm or hamper the identified birds species, including two endangered species, and/or their ecological communities inside MdR, can be substantially reduced or mitigated by at least the preceding management provisions. *Full execution of the prescribed management will limit or reduce all identified project impacts to less than significant levels.*

If to embrace sound planning and project management, including employment of the previously discussed mitigation measures and BMPs, the Boat Central project would cause no long-term or lasting impacts or losses to any listed or special-status bird species, i.e., California Brown Pelican or California Least Tern; and similarly, none to Double-crested Cormorants, Great Blue Herons, Great Egrets, Snowy Egrets, or Black-crowned Night-Herons. The same has been determined for Western Grebes, Eared Grebes, Red-breasted Mergansers, Ring-billed Gulls and Heermann's Gulls, and the similar and related species that these represent within the MdR and Basin H environments.

Finally,

★ Project impacts will be limited to the construction phase, and specifically from the effect of turbidity on species foraging capacity [to successfully see, dive-on or chase, and attack prey species].

★ There will be no long-term effect on birds, marine or terrestrial, created by an action or phase of the project.

____

15 September 2008

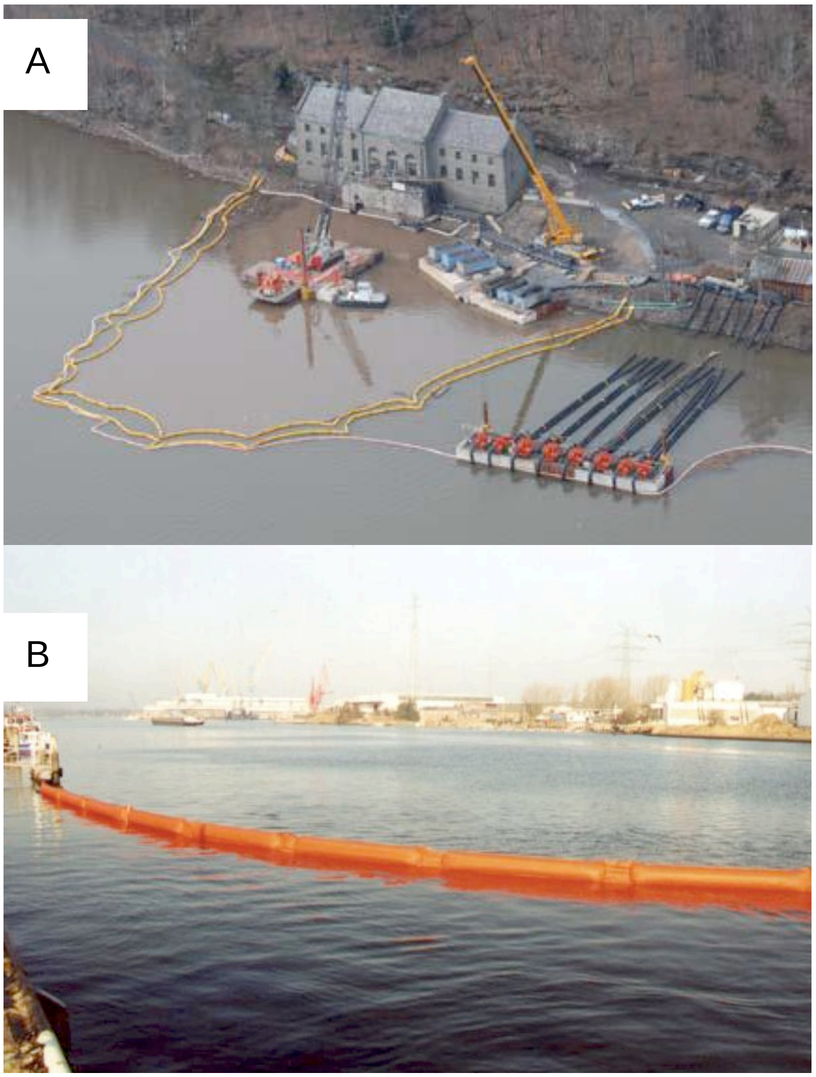

FIGURE **7**. Representative deployments of silt curtains (A) and debris boom (B), Federal Republic of Germany.

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14.0 WRITER'S QUALIFICATIONS

J.B. (Jeff) Froke is an ornithologist and wildlife ecologist who has worked for more than 35 years in conservation research, management, education and administration. Starting work as a California State Park Ranger , he later was a US Fish & Wildlife Service law enforcement inspector. in Los Angeles. Leaving government service, he joined the science & sanctuary staff of National Audubon Society, promoting from a resident sanctuary manager, to western states sanctuaries manager and finally associate director of the Audubon's nationwide Wildlife Sanctuary Department.

Among his scientific and professional awards, Harvard University awarded Jeff with a Loeb Fellowship that included one year of resident scholarship (his focus was landscape ecology, planning & architecture); simultaneously, he received a full sabbatical from Audubon. After Harvard, Froke was named to be President of the Roger Tory Peterson Institute in Jamestown, New York, where he worked with Dr. Peterson and NYC architect Robert A.M. Stern to program the institute's new research and education activities with its plans for the 20-million dollar RTPI headquarters, library and archives in Jamestown.

In 1991, JBF was made a partner and principal of Rancho San Carlos near Carmel, California, where for 14 years, he supervised extensive resource studies and participated in the planning, design and development of the 20,000-ac Santa Lucia Preserve & Preserve Golf Club. As a result of his efforts and those of others, 18,000 ac of the Preserve is today dedicated to wildlife and nature conservation; and with the support of a 20-million dollar endowment that Froke negotiated, the Preserve is managed by the nonprofit Santa Lucia Conservancy, which, with the Trust for Public Land, JBF co-founded and served for 10 years as its president.

Today, JBF consults in scientific and management projects dealing with endangered wildlife and habitat restoration. He advises municipal agencies regarding the restoration and management of public habitat reserves and wildlife resources, and he provides ecological solutions to home-owners and their architects, developers and their legal counsel, and both local governments and utilities throughout California. Among his current research and special projects are those focused on the California Gnatcatcher, urban-nesting herons and egrets, California Red-legged Frogs, the ecology of coastal marinas and harbors, and the integration of nature and native species with new and redeveloping golf courses. His current aim is to provide more counsel to private homeowners in the ways and possibilities to live with wildlife, a key theme of his entire career.

In addition to a B.S. and M.S. in wildlife management and ornithology (Humboldt State University), and his Ph.D. in landscape ecology and zoogeography (UCLA), Froke pursued doctoral studies in deep sea ecology and ocean policy at UC Scripps Institute of Oceanography.

JBF was a founding member of the Pacific Seabird Group and served on its Executive Council during the organization's first and formative years (1970s). Additionally, he serves or has served as a trustee/director of numerous nonprofit and scientific boards and public commissions, including, e.g., Asâ Wright Nature Centre & Lodge (Trinidad, West Indies), several National Audubon Society chapters and bird clubs, and presently Western National Parks Association (formerly Southwest Parks & Monuments Association), and Del Monte Forest Foundation (Pebble Beach, CA).

Appendix E4
An Assessment of Marine Biological Resources Associated with Parcels 52R and GG: Marina del Rey Boat Central dated September 13, 2008, prepared by J.B. Froke, Ph.D. of Califauna, in collaboration with Rick Ware of Coastal Resources Management, Inc.

AN ASSESSMENT *of* MARINE BIOLOGICAL RESOURCES ASSOCIATED WITH PARCELS 52R & GG

MARINA DEL REY BOAT CENTRAL

LOS ANGELES COUNTY, CALIFORNIA

Prepared for

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Saturday, 13 September 2008

Recommended Citation

FROKE, J.B. & R. WARE. 2008. Assessment of marine biological resources associated with Parcels 52R & GG: Marina del Rey Boat Central Project, Los Angeles County, California. Contract report prepared for Boat Central L.P., *c/o* Allen Matkins / Los Angeles. Pebble Beach, CA (13 September).

AN ASSESSMENT *of* MARINE BIOLOGICAL RESOURCES ASSOCIATED WITH PARCELS 52R & GG

MARINA DEL REY BOAT CENTRAL

LOS ANGELES COUNTY, CALIFORNIA

Prepared for

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LIST OF CONTENTS

1.0 INTRODUCTION

1.1 MARINA DEL REY SPECIFIC PLAN

The Marina del Rey Specific Plan (§22.46.1180.2, Filing Requirements) prescribes that a marine-oriented study be prepared to accompany filings for projects within Marina del Rey (*MdR*). The Specific Plan states that each study report "shall discuss the proposed development's impact on the biological productivity [1] of the marine resources within and adjacent to Marina del Rey. [M]itigation measures must be proposed for any negative impacts."

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1 BIOLOGICAL PRODUCTIVITY & Marine Ecological Processes

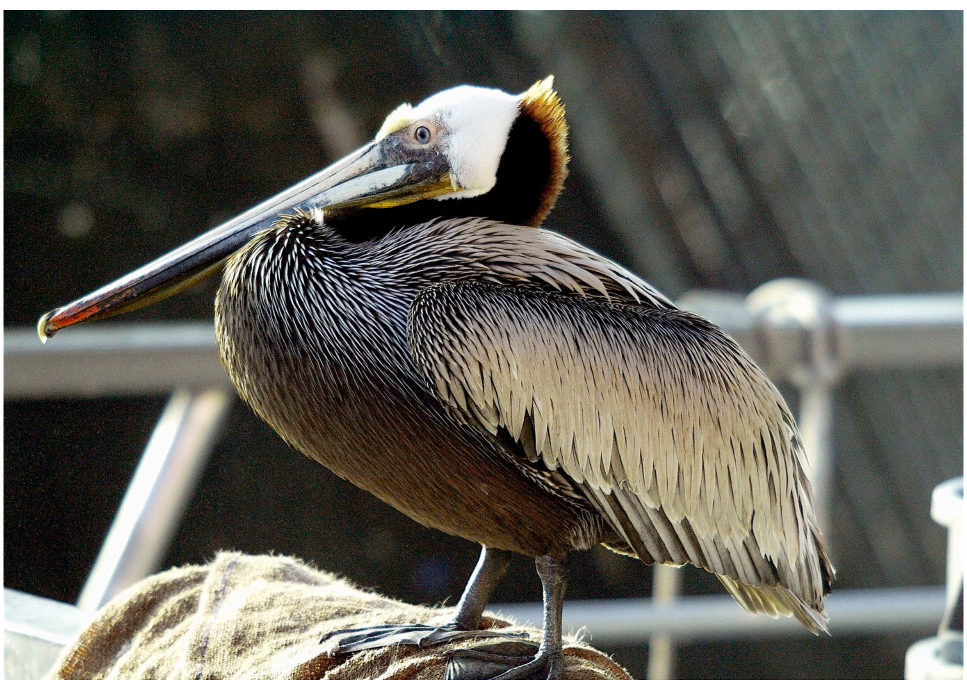
Fundamental to marine ecology is the discovery and understanding of the principles that underlie the organization of marine communities and govern their behavior, such as controls on population growth and stability, quantifying interactions among populations that lead to persistent communities, and coupling of communities to form viable ecosystems. The basis of this organization is the flow of energy and cycling of materials, beginning with the capture of radiant solar energy through the processes of photosynthesis and ending with the remineralization of organic matter and nutrients.

Photosynthesis in seawater is carried out by various marine organisms that range in size from microscopic, single-celled marine algae to multicellular vascular plants. The rate of photosynthesis, thus the growth and primary production of marine plants, is dependent on a number of factors, the more important of which are availability and uptake of nutrients, temperature, and intensity and quality of light. Of these three, the last probably is the single most important in governing primary production and the distribution and abundance of marine plants. Considering the high attenuation of light in water and the relationships between light intensity and photosynthesis, net autotrophic production is confined to relatively shallow water depths. The major primary producers in marine environments are intertidal salt marshes and mangroves, submersed seagrasses and seaweeds, phytoplankton, benthic and attached microalgae, and–for coral reefs–symbiotic algae (zooxanthellae). On an areal basis, estuaries and nearshore marine ecosystems have the highest annual rates of primary production. From a global perspective, the open oceans are the greatest contributors to total marine primary production because of their overwhelming size.

The Specific Plan further instructs that the contents of the required report will include the following,

- ★ Effects of any additional pollutants due to increased runoff caused by new development;
- ★ Potential changes in water temperature and biological productivity caused by outfalls, runoff, or a decrease in light entering the water due to shadowing (new buildings); and,
- ★ Effects of any new structures placed in the water.

In response, the present report fully complies with requirements of the MdR Specific Plan in regards to resolving impacts that the proposed Marina del Rey Boat Central (*MdR Boat Central; the project*), and specifically its marine construction and long-range operations, may have on marine biological productivity within and adjacent to MdR.



CALIFORNIA BROWN PELICAN
Pelecanus californicus

1.2 POTENTIAL IMPACTS ON ENVIRONMENTAL RESOURCES

In addition to the question of biological productivity, this report considers the potential impacts associated with development of Boat Central on certain other environmental elements, listed below. Thereby, the purpose of this assessment is to determine whether there may be significant effects, adverse or beneficial, on biological productivity and the following special resources. Afterwards, it will be necessary to develop thresholds of significance for the effects; and, finally, to identify practicable means to overcome (or, reduce) the significance of projected adverse impacts on behalf of these resources. The added special elements include --

★ Species listed by the state and/or federal government per the California Endangered Species Act (CESA) and the Endangered Species Act (ESA), respectively, as being either threatened or endangered; and, species not so listed but that are currently ranked by the California Department of Fish & Game (CDFG) as Species of Special Concern (SSC). These citations are for the current CDFG lists of SSC mammals (Williams 1986; revision is currently in draft form), SSC birds (Shuford & Gardall 2008); and fishes (Moyle et al. 1995).

★ Riparian habitat and communities, if present;

★ Wetland habitat and communities, if present;

Factors with the potential to negatively affect special resources, or legal commitments that are aimed at protecting the resources are as follow --

★ Elevated noise due to, e.g., demolition, dredging, and pile driving; also from onshore construction and operation of powered equipment, e.g., electrical generators;

★ Elevated turbidity due to, e.g., demolition, dredging, and pile driving; also from landside runoff into the waters;

- ★ Shading on marine resources as may be caused by building shadows and shading; and,

- ★ Increased waterside toxic and non-toxic contamination due to possible discharges and emissions from an increased number of boats in Basin H (oils, lubricants, paint, wastewater releases, debris, etc.).

- ★ Conflict with an adopted local, state, or federal regulatory action or permits, such as a county Development Agreement, Natural Community Conservation Plan (CA Natural Community Conservation Planning Act of 1991), or ESA § 10 permit, i.e., Habitat Conservation Plan (*HCP*).

1.3 PROJECT GEOGRAPHY

Located inside Santa Monica Bay (Figure 1), near to the ocean outlet of the Ballona watershed (Figure 2), the MdR Boat Central site is situated within Marina del Rey, an unicorporated area of Los Angeles County (*LACo*; CA, USA). The site encompasses 4.20 ac of land and water (land alone = 3.09 ac) at the foot of Basin H, in the NE quadrant of the marina (Figure 3). The combined parcels have street frontage on Fiji Way immediately adjacent to the County's boat launch ramp. The project site is located inside the Venice USGS 7.5-minute (1:24,000) map quadrangle. Figures 4 and 5 display layouts of existing and prospective facilities inside parcels 52R and GG. The specific geographic location of the project area, at the approximate center of the property, is 33.9765° *latitude* @ $^{\text{minus}}$118.4416° *longitude*.

1.4 PROJECT DESCRIPTION

The Boat Central project description is an adaptation of the developer's PD (January 2008 w/ modifications of September 2008).

1.4.1 Project Objective

Boat Central proposes to develop a state-of-the-art dry-stack boat storage facility to bring an increased and improved level of service to the marina boating community.

1.4.2 Project Scope

The Boat Central site is a 4.20-acre leasehold (including land & water areas) comprised of two contiguous parcels, 52R & GG, both facing Fiji Way. The project would accommodate approximately 345 boats and 28 boat trailers within the dry-stack building, and outside parking for 30 mast-up sail boats and a public waterside hoist. The boats will be delivered dockside upon reservation/request, fully fueled with the boaters option to order necessary supplies including food and drinks. A boat washdown facility will be incorporated on-site.

The project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two-story visitor building would have a gross floor area of 3,070 square feet and would house the Boat Central office. Contiguous with that building, the project will incorporate the existing Sheriff's Boatwright shop in a new two-story building (2,835 square foot building footprint with a 430 square foot second floor mezzanine) with an adjacent 2,200 square foot fenced yard. The Sheriff's boat dock will remain in place. The other existing public uses that include temporary office space and parking for charter fishing tours, will be relocated by the Department of Beaches & Harbors. Important from an environmental standpoint, no wet slip spaces are proposed, as all dock facilities will be reserved for the immediate queuing of boats scheduled for use.

1.4.3 Regulatory Framework

The MdR Land Use Plan designates the Property as "Public Facility[2]," a designation that does not allow the proposed land use.[3] The proposal requests an amendment to the MdR Local Coastal Program (*the LCP*) to designate the property instead as "Boat Storage[4]." The redesignation would be well aligned with the intent of the LCP -- as reflected in its goals and policies -- by providing enhanced recreational boating opportunities.

The Boat Central project will address a number of LCP policies including --

★ "Increased recreational boating use of coastal waters shall be encouraged, ... [5]"

★ "Facilities serving ... recreational boating industries shall be protected and, where feasible, upgraded."[6]

★ "Recreational Boating is a Top Priority. Recreational boating shall be emphasized as a priority use... the Plan shall strive to ensure that adequate support facilities ... including boat dry storage yards [are available to the public] ...[7] " "Additional boat storage facilities may be developed ... and dry stack storage may be constructed .... [8]"

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2 Marina del Rey Land Use Plan, Map 17.

3 Marina del Rey Specific Plan, Los Angeles County Code (LACC) § 22.46.1590-1600.

4 Marina del Rey Specific Plan, LACC § 22.46.1460.

5 California Coastal Act, Section 30224; Marina del Rey Land Use Plan page 3-1.

6 California Coastal Act, Section 30234; Marina del Rey Land Use Plan page 3-1.

7 Marina del Rey Land Use Plan, Chapter 3, Policies and Actions, § 1 page 3-4.

8 Marina del Rey Land Use Plan, Chapter 3, Policies and Actions, § 4 page 3-5.

The policy framework of the Local Coastal Program supports the expansion of dry-stack storage facilities within Marina del Rey. As such, the proposed amendment to redesignate the property from Public Facility to Boat Storage is consistent with the LCP and directly responds to priority objectives and policies of the LCP. Dry-stack storage provides environmental advantages and much less water coverage than would a comparable number of wet slips. Additional entitlements will be required, including a LACo Coastal Development Permit, a parking permit, and a State Coastal Permit from the California Coastal Commission.

1.4.4 Architectural Elements

Boat Central was designed to be visually sensitive to the marina environment in which it would be set; and, in part to do so, the project will use translucent polycarbonate (PC), or other similar material, as the primary architectural cladding. The PC material has several key benefits, and foremost is its ability to allow daylight to penetrate through the structure *to the water's surface* while providing a safe well-lighted workplace with a minimal electrical load. Another benefit is the longevity of polycarbonate: the UV and salt corrosion resistance is superior to most other available cladding products.

The lightweight nature of the polycarbonate panels allows the building mass to be broken down architecturally into a series of planes that will reduce the visual bulk *versus* what would happen were it made as a simple box-like structure, typical of enclosed dry stack facilities. According to the developer, there has been an intensive effort to study and choose a range of material colors for Boat Central, with an objective to be compatible with the surrounding sky and water. The overall program and content of the Boat Central project are illustrated by Figure 6 .

1.4.5 Public Shoreline Access

A basic objective and requirement of all development within the marina is improved pedestrian access to the shoreline, except where public safety is an overriding consideration. The Boat Central project will address a number of LCP policies that are focused on enhancing safe public access to the water. These policies include --

★ Maximum public access to and along the shoreline….shall be a priority goal of this Plan, balanced with the need for public safety,…[9]

★ All development shall be required to provide public shoreline access…[10]

★ All development in the existing Marina shall be designed to improve access to and along the shoreline.[11]

The project will answer the first-priority policy that would maximize public access to the shoreline, and do so by creating a waterfront park with direct access from Fiji Way. Signage will notify passers-by that the park is a public area. Furthermore, after construction, the tandem goal of preserving public safety will be met by construction of an enhanced walkway to the park, and that carefully segregates the public from potential hazards that are inherent in operating heavy machinery inside and outside of dry-stack storage facilities.

The waterfront overlook park area will incorporate landscaping, seating areas and a water fountain. The park is intended to be open during normal business hours. The public waterfront park, or overlook, will generally follow the character of the frontage road promenade. Approximately 30 ft by 50 ft, the park will offer ample opportunity for public access to the waterfront. It will utilize the same integrally colored paving as the promenade with an 8 ft-wide main walk, surrounded by groundcover. There will be a public area adjacent to the bulkhead, with benches provided.

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9 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 1 page 1-7.

10 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 2 page 1-7.

11 Marina del Rey Land Use Plan, Chapter 1, Policies and Actions, § 3 page 1-7.

As much of the access from Fiji Way to the park will double as a fire lane access corridor, it will be surfaced with *grass-crete* blocks, traversable by heavy emergency vehicles (to either side of the meandering 8-ft walk). At minimum, there will be 8 ft of planting alongside the dry-stack storage facility, including a row of palms, which will indicate the way to the waterfront. Because the area will perform triple-duty -- as a fire lane, accessway and view-corridor -- plantings will grow high enough to require occasional trimming to maintain views to the water. The park and its public and emergency access will add approximately 5,500 sqft of permeable surface to the Boat Central site for a total of 8,520 sqft.

1.4.6 Building Height & Massing

With respect to building height, the Boat Central property is subject to Category 3 regulations:[12] Dry Stack storage facilities normally are permitted to reach a vertical maximum of 75 ft, excluding the boat hoist mechanism, which may exceed the height limit. The maximum proposed height of the building above finished grade is 70 ft, exclusive of the crane that extends above by no more than 12 feet, but no more than 82 ft, overall.

Although the building would measure within official allowances, certain design elements will further reduce the total impact of the building's scale: The narrow ends of the building would be oriented toward Fiji Way and Basin H so the mass of the structure will not obstruct views of the harbor. In sum, the perpendicular alignment of the principal dry-stack feature, combined with the architectural elements noted above, will substantially reduce the visual scale of the proposed structure.

[12] LACC § 22.46.1880.

1.4.7 Parking

The proposal requests a parking permit that would provide fewer spaces than are required per the MdR Specific Plan. Specifically, the MdR Specific Plan requires the following ratio of parking spaces per boat stored (*ps^{-bs}*) to be one half or 0.50 ps^{-bs}.[13] The official ratio, however, is not supported by industry experience, which in turn shows that a ps^{-bs} of 0.25 would be adequate for the proposed type of facility.[14] Additionally, project planners expect that the proposed parking area will be under-utilized on a near daily basis. Information from parking analyses indicates that a proposed Boat Central ps^{-bs} ratio of 0.36 (based on 135 full-size parking spaces, including four stalls for disabled persons) will be at least adequate. For a limited number of peak periods, e.g., July 4th and Labor Day, when boat usage may cause the parking demand to approach the capacity of the proposed onsite parking, Boat Central will employ a valet scheme. In this scnario, the valet method would result in the addition of potentially 13 parking spaces, i..e., the special-event parking ratio would equal 0.40.

1.4.8 Landscape Treatment

The landscape design for Boat Central is intended to comply with the *Marina Walk Draft Design Guidelines.*[15] Hence, the project will include an 8-ft wide integrally-colored concrete walk along Fiji Way that would meander underneath Queen Palms, *Arecastrum romanzofianum*, and (unidentified) shade trees. Understory and ground cover generally will consist of drought-tolerant species (native and/or nonnative) appropriate to the local

13 Department of Beaches & Harbors to Boat Central, RFP respondents, 01 March 2005.

14 Linscott, Law & Greenspan report on Boat Central proposed parking ratio.

15 Draft Design Guidelines, The Marina Walk, prepared by Gruen, Jan. 1998.

Mediterranean climate[16]. In the parking lot, shade trees will be planted in diamonds between rows as a means to mitigate a "*heat island effect.*" All planting within view corridors between Fiji Way and the bulkhead will be pruned as a means to frame views between the tops of cars and bottoms of shade tree canopies. Additional Mexican Fan Palms, *Washingtonia robusta,* will be used alongside the boat storage facility and to frame gangways. There will be a public park/overlook to the northwest water's edge on the site. The park will be designed with input from the Marina del Rey Design Control Board so as to best serve the visiting public. Access to the public park will be a pathway similar to the promenade along Fiji Way, with planting between path and structure to the east and grass-crete or similar unit pavers to the west (a fire corridor). The project landscape plan anticipates approximately 18,560 sqft of landscaped area, a net increase of 178 pct above existing conditions while providing a 50.0 pct site-wide view corridor.

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A **Mediterranean climate** is one that resembles the climate of lands in the Mediterranean Basin (below), which comprises over half of the area with this climate type world-wide. In addition to areas surrounding the Mediterranean Sea -- Africa, Asia, and Europe -- the climate type prevails in much of southern and central California, in parts of Western and South Australia, in southwestern South Africa, and in parts of central Chile.

The climate is characterized by hot, dry summers and cool, wet winters. For example, the city of Perth, Australia, in the southern hemisphere winter months of June-August, experiences 18 in of rainfall and an average daily minimum of 46°F. Meanwhile, during the summer months of December to February the city only averages 1.30 in of ppt.

1.4.9 Wind Effects

The dry-stack storage building will not have a significant affect on surface winds in the marina. As part of the project application, an analysis was prepared on potential effects of the dry-stack building on surface winds. The completed report will be submitted with the entitlement application to the Department of Regional Planning and will be used in the Environmental Impact Report for the project. The wind impact assessment, prepared by Rowan Williams Davies & Irwin, Inc., found that the project is expected to have minimal effect on wind conditions in the adjacent basins and Main Channel."[17]

1.4.10 Shade & Shadow Study

AC Martin Partners conducted a study of the year-round potential for shade and shadow effects of the dry-stack facility. The analysis demonstrated that the project will not have any appreciable effect on nearby wet slips or the public launch ramp. Water coverage by shadows occurs twice during the Winter Solstice, once each in the morning and afternoon (Figure 7).

1.4.11 Project Lighting

Lighting for the Project will conform to the dark sky initiatives of Marina del Rey. Site lighting is expected to be at minimum legal levels throughout the surface parking area, with cutoff fixtures used. Lighting inside the dry stack storage facility will be down light only, enough to provide safe working levels for the crane operator and staff, approximately 40 footcandles (40 lm/ft2). Very little of that light will leak outside, as the stored boats will shade much of the surface from the inside; further, the polycarbonate material used to clad the building has a high shading co-efficient which will block more of the direct light. Overall the general design intent is for a soft glow of internal illumination. The hours of operation of the dry stack facility will be limited as well, and lights will be on in the Project for significantly fewer hours than in the neighboring shopping center.

[17] RWDI, Wind Impact Assessment for Boat Central, page 4.

1.4.12 Waterside Project Elements

The waterside portion of the Boat Central project includes the construction and operation of a variably-configured boat dock (Figure 5). The dock will be accessed via a pile-supported platform, and an ADA accessible ramp will be jointly used by Boat Central customers as well as the Sheriff's Department employees. The system will include a boat queuing basin and a dock system that will consist of seven finger-piers for tenants to use as temporary tie-up when departing and returning to the facility. No wet slip spaces are proposed, as the dock facilities will be reserved for the queuing of boats scheduled for use.

Existing Facility -- The approximate surface area of the existing dock and ramp at the project site is 1,690 sqft. Fourteen, 16-inch diameter piles (19.5 sq ft of surface area) will support the dock and ramp.

Proposed Facility -- Based on preliminary dock surface area calculations, the total surface area of the proposed dock queuing system is estimated to be 6,500 sq ft. The surface area of the proposed thirty, 16-inch diameter piles is 50.7 sq ft.

1.4.12.1 Building Materials

The building materials associated with the new floating dock system and the limited new piles to be driven in place, are of interest to this environmental study. The new floating docks system will consist of prefabricated, lightweight, aggregate concrete modules. Expanded polystyrene flotation is completely encased in a reinforced concrete shell, which is impervious to marine borers. Concrete encasement on all six sides provides maximum strength and protection. Galvanized steel rods pass through conduits cast into the Unifloat(R) units and are fitted with nuts and special washers on each end. Galvanized steel frames are included to provide high-strength connections at the critical joints between finger piers and main walks. Galvanized iron cleats, fiberglass locker boxes, marine-grade Medium Density Polymer (MDPE) used on triangle frames, stainless steel substations, Ultra High Molecular Weight (UHMW) pads, and marine-grade vinyl fenders are included in the project. No creosote treated wood products are included in this new concrete dock.

1.4.12.2 Construction Details

The proposed marina project includes installation of the new concrete floating dock system, pile-driving and installation of new utilities. If applicable, demolition will occur by removing sections of existing docks and removing them by crane onto trucks. These existing floating docks will be disposed off-site at a legal disposal site such as Puente Hills Landfill in Whittier, CA. New floating dock sections will be delivered by truck and offloaded by crane into the water. These new floating docks will be towed with a small skiff to their final location. Approximately 30 pre-stressed 16-inch square concrete pilings will be emplaced to support the dock system. New piles will be driven through openings in the floating docks to anchor them sufficiently. Pile driving will be accomplished with a crane located on a floating barge. The methodology of pile installation is a combination of jetting and driving. Piles will be jetted in place, through the floating dock system, and the last five feet of each guide pile will be driven to their final tip elevation. The methodology of pile removal will be accomplished with the crane and floating barge as well. In all pile-driving locations, turbidity screens/siltation curtains will be utilized around each piling to be driven or removed to assist in isolating the work area from potential water quality impacts related to construction.

1.4.12.3 Project Timing

Dock installation and pile-driving are expected to take approximately three months to complete, and would likely be conducted in the fall/winter season.

2.0 ENVIRONMENTAL SETTING

Marina del Rey is located in Santa Monica Bay, California, south of Venice, north of Playa del Rey and approximately 15 miles southwest of downtown Los Angeles (read section 1.3 - Project Geography; see Figure 1). The marina was constructed initially in 1957 from part of the Ballona wetlands and the former Lake Los Angeles. Encompassing approximately 354 acres, the marina has the slip capacity to accommodate approximately 5,200 private boats (Marina del Rey Convention & Visitors Bureau; however, more than 6,000 are reported by other sources). The marina is protected at its entrance by two jetties and a detached breakwall, and is adjacent to the downcoast Ballona Creek Flood Control Channel. A concise development history of Marina del Rey is found at http://labeaches.info/BandH/Marina/MdRhistory.htm.

2.1 WATERSHED CHARACTERISTICS

The Ballona Creek watershed drains approximately 127 mi^2 of watershed in LACo. The watershed boundary includes the Santa Monica Mountains on the north and the cities of Baldwin Hills and Inglewood on the south. The western boundary is approximately 1.0 mile inland from the Pacific Ocean and extends from the Santa Monica Mountains southward to Venice and eastward to Baldwin Hills. The eastern boundary extends from the crest of the Santa Monica Mountains southward and westwards to the vicinity of central Los Angeles. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains.

Flows from these sources vary greatly from year to year, depending on rainfall and discharge during major winter storms greatly exceeds discharge at other times. Large amounts of sediment may be discharged from Ballona Creek during major storm events and typical urban contaminants are entrained into the stormwater runoff. Discharge from Ballona Creek resulted in the shoaling of approximately 50,000 cubic yards of sediment at the south entrance of Marina del Rey during major storms in December 1994 and January 1995 (U.S. Army Corps of Engineers 1995). During summer and fall, Ballona Creek carries only nominal runoff from nuisance water, domestic, agricultural, and industrial discharges (Chambers Group Inc. 1998).

Runoff and associated contaminants from the watershed are discharged into the marina's south entrance channel and Santa Monica Bay at the mouth of Ballona Creek, which is located immediately downcoast of Marina del Rey Harbor. Several storm drains lead into the back basins including the Washington Street Drain and the Oxford Drain. Other sources of contaminants include (a) the illegal flushing of bilges and (b) certain boat repairs that involve scraping of fouling organisms and using antifouling paint on watercraft hulls. Additionally, accidental sewage discharges from the City of Los Angeles wastewater treatment system will contaminate local ocean resources and seawater.

Much of the habitat in Marina del Rey is subtidal (below the tide level), and its floor is covered with soft-bottom habitat-building materials that consist of sands, silts, and clays. The breakwall and main channel entrance jetties are constructed of riprap and support hard-bottom species of animals. With the exception of the riprap areas, hard-bottom in the marina is limited to vertical retaining walls, piers, and floats. The only gently sloping, shallow water habitat in the marina is Mother's Beach, a small but broad swimming beach at the back of Basin D.

2.2 CHIEF ENVIRONMENTAL STUDIES IN MARINA DEL REY

Environmental monitoring in Marina Del Rey has been ongoing since 1976. Monitoring efforts were initially conducted by the University of Southern California (USC) Harbors Project between 1976 and 1996. The emphasis of the USC studies was to document the chemical, physical, and biological (plankton, invertebrates, and fish) environment within the marina and associated drainages. Aquatic Bioassay and Consulting Laboratories (ABC Laboratories) has been conducting the environmental studies for the County of Los Angeles since 1996. Knowledge obtained from these MdR studies helped to substantiate findings of this biological report. Additionally, more recent information on sediment chemistry, toxicity, and the benthic biological environment is presented in the State of California Water Resources Control Board investigations of Los Angeles County harbors, wetlands, and channels (SWRCB *et al.* 1998), some of which is applicable to MdR and Ballona Creek.

Figure 8 shows the locations of LACo and SWRCB marine assay sampling stations. Water quality, sediment quality, and benthic infauna were monitored at 19 stations of which 14 are within the marina. Two of the ex-marina stations were located within or near Ballona Creek; the other two were inside the Oxford Drain. LACo's Station 7 is located closest to MdR Parcels 52R/GG at the terminal end of Basin H (ABC Laboratories (1997). The most recent data for the 19 stations were from monthly observations during 2003-2004 (CA Coastal Conservancy 2006).

2.3 WATER QUALITY

Water quality parameters measured inside MdR include temperature, salinity, dissolved oxygen, pH, light transmittance, Secchi disc readings (water clarity), and depth-stratified water samples. Public health issues are addressed by sampling for pathogenic coliform and *Enterococcus* (*faecalis* and/or *faecium*) bacteria.

The following generalizations are based on several years of water quality monitoring results (ABC Laboratories 1997; CA Coastal Conservancy 2006; SWRCB *et al.* 1998):

- ★ Marina del Rey is influenced by dry and wet season runoff from the watershed;
- ★ Seasonal runoff characteristics result in high variations in temperature, salinity, dissolved oxygen, and turbidity (Soule *et al.* 1993, ABC Laboratories 1997);
- ★ Marina del Rey water quality is influenced by poor tidal flushing and mixing with offshore waters (Chambers Group Inc. 1998); and
- ★ Water quality tends to improve in the main channels near the ocean entrance and decline with distance into the back basins.

18 Identification & Ecological Significance of Dissolved Oxygen (DO)

Measures of Dissolved Oxygen (DO) refer to the amount of oxygen contained in water, and define the living conditions for oxygen-requiring (aerobic) aquatic organisms. Oxygen has limited solubility in water, usually ranging from 6 to 14 mg L^{-1} [1]. DO concentrations reflect an equilibrium between oxygen-producing processes (e.g. photosynthesis) and oxygen-consuming processes (e.g. aerobic respiration, nitrification, chemical oxidation), and the rates at which DO is added to and removed from the system by atmospheric exchange (aeration and degassing) and hydrodynamic processes (e.g. accrual/ addition from rivers and tides vs. export to ocean).

Most aquatic organisms require oxygen in specified concentration ranges for respiration and efficient metabolism, and DO concentration changes above or below this range can have adverse physiological effects [2]. Even short-lived anoxic & hypoxic events can cause major "kills" of aquatic organisms. Exposure to low oxygen concentrations can have an immune suppression effect on fish which can elevate their susceptibility to diseases for several years [6]. Moreover, the toxicity of many toxicants (lead, zinc, copper, cyanide, ammonia, hydrogen sulfide and pentachlorophenol) can double when DO is reduced from 10 to 5 mg L-1 [2]. The death of immobile organisms and avoidance of low-oxygen conditions by mobile organisms can also cause changes in the structure and diversity of aquatic communities. In addition, if dissolved oxygen becomes depleted in bottom waters (or sediment), nitrification, and therefore denitrification, may be terminated, and bioavailable orthophosphate and ammonium may be released from the sediment to the water column. These recycled nutrients can give rise to or reinforce algal blooms. Ammonia and hydrogen sulfide gas, the result of anaerobic respiration, can be toxic to benthic organisms and fish assemblages in high concentrations.

Site cluster analysis of the various water quality parameters tested by ABC Laboratories grouped Stations 3 - 6 and 25 into a cluster that was highly influenced by ocean water and generally are cold, saline, clear, blue, and lower in nutrients, organics, and bacteria versus other sites inside the harbor. The Ballona Creek and Marina del Rey stations located at the harbor entrance were influenced by Ballona Creek runoff and open ocean waters. There the water tends to be cold, less saline, and more oxygenated than at other marina stations; but, it is higher in organics and bacterial contamination.

2.4 WATER TEMPERATURE

Monitoring water temperatures for 20 yrs (1976-96) identified variation in seasonal surface water temperatures that ranged between 11.0° and 28.2° C. More recently, the 1996-97 sampling program recorded temperatures that varied \\ 12.4° and 24.6° C.

2.5 DISSOLVED OXYGEN

Dissolved oxygen [18] in seawater ranges from about zero to 16 parts per million (0-16 milligrams per liter); and Santa Monica Bay levels typically range from 6.0 to 8.5 mg/l. A value of 5.0 is recognized as a standard acceptable level to sustain marine life, although benthic invertebrates, including crabs, snails, clams, and worms, can sustain slightly lower levels of dissolved oxygen, around 2.0 mg/l (EPA 1986).

Dissolved oxygen (DO) decreases inversely to distance into the back basins; this is because of a build-up of organics in the back channel basins and storm drain runoff areas . The relationship is due to reduced tidal flushing activity in those areas (Soule *et al.* 1986). Average DO values for Station 4 were 7.0 mg/l, and 7.9 mg/l at Station 12 in the Ballona Creek, levels that were above the acceptable levels required to sustain marine life. Lowest DO levels typically occur during the warmest time of the year and some individual values will decrease to below 5.0 mg/l. In August 1996, a concentration of 2.2 mg/l was recorded in the Oxford Lagoon.

2.6 SALINITY

Water salinity (S; the amount of dissolved salts per unit volume of seawater) is relatively constant in Santa Monica Bay whereas it varies over a wide range within Marina del Rey (MBC 1994). In Santa Monica Bay, mean salinity over a 5-year period was 33.75 parts per thousand (ppt), with a 90 percent range between 33.57 and 33.92 ppt (Chambers Group Inc. 1998). Variations in Santa Monica Bay occur primarily due to freshwater (stormwater) input and upwelling.

High volumes of stormwater runoff, mainly from Ballona Creek and Oxford Street Basin, highly influence water salinity. Salinity is generally well mixed from the surface to bottom, except during storm events when less saline, freshwater forms a lens above the denser and more saline bottom waters. Since 1983, salinity has varied from 0.0 to 34.8 ppt (ABC Laboratories, 1997). Salinity values for all marina stations ranged from 0.1 to 34.9 ppt from 1991 through 1996; a range of S @ 21.1 to 34.1 ppt was recorded for the 1996-1997 sampling period.

2.7 SURFACE TRANSPARENCY

Water clarity is important because the livelihood of benthic plants (bottom-dwelling algae and seagrasses) and phytoplankton (drifting microscopic algae) depend on their ability to capture light during the photosynthetic process. Surface transparency is recorded as the depth of a weighted white disk (Secchi disk) when it first disappears from view. The reading is useful as a simple indicator of the amount of ambient submarine light available during the photosynthetic process. Locally, transparency is affected by seasonal runoff during the winter, and occasional plankton blooms, both of which decrease surface transparency. During 1996-1997, surface transparency varied from less than 1 meter to 6 meters. Spatially, water clarity values were highest within the channels (3.4 to 3.7 m) and near the entrance (3.7 to 3.8 m), and lowest in Basin E (1.9 m).

2.8 WATER COLUMN CONTAMINATION

A variety of chemicals including metals, pesticides, hydrocarbons, and other organic contaminants are washed into Marina del Rey during storm events. Moffatt & Nichols Engineers (1999) demonstrated that Marina del Rey water quality is adversely affected by high discharges from Ballona Creek, and simultaneously by an inhibition of flushing of marina waters that leads to accumulation of chemicals. Further, their work shows that Ballona Creek contributes chemicals to marina waters as a physical result of deflection by the breakwall toward the marina entrance, and during flood tide this discharge is carried into the marina.

During the dry season – when Ballona Creek does not significantly contribute to water quality -- the principal source of chemicals in marina waters is direct input from marina activities such as boating, oil spills, overboard waste disposal, antifouling paint, and sacrificial zinc anodes. Principal chemicals linked to boating activities include lead, zinc, copper, tributyltin (TBT), polycyclic aromatic hydrocarbons (PAH) (Moffatt & Nichols 1999); bacteria including pathogenic forms also are potentially important factors.

Few data on chemical levels in the water column of Marina del Rey are available because the chemicals mostly are transitory due to tidal and wind driven current circulation and on-going chemical processes. Consequently, most studies rely on chemical information as it pertains to the sediments because the concentrations (accumulations) are more representative of long-term trends.

Available water quality data indicate that some metals have exceeded water quality standards in Marina del Rey. Woodward-Clyde (1990) indicated that chromium and lead in the entrance channel and Basin H exceeded State of California Ocean Plan Standards in May 1990.

2.9 SEDIMENTS

2.9.1 Sediment Grain Size

Most sediments within Marina del Rey consist of fine silts and clays and lesser percentages of coarser sand materials. The finest sediments occur in the center of the main channel and near the bend of the Marina Del Rey Channel (Station 4, medium to coarse silt). The fine-grain size regimes within Marina del Rey reflect (1) low current velocities within the marina channels and basins and (2) historical fine-grained Ballona wetland sediments from which the marina was dredged from. Coarser sediments tend to occur where current velocities are highest, near the mouth of Ballona Creek (Station 12), inside the breakwall at the mouth of Marina del Rey, and in Oxford Lagoon (ABC Laboratories 1997).

Moffatt & Nichol (1999) investigated sediment grain size characteristics throughout Marina del Rey. Their results indicate that sediments in the main channel near the Administration docks and the Villa Venetia apartment complex contained 97.5 pct silt clay. The mean percent silt/clay content for nine sites in Marina del Rey was 91.5 pct.

2.9.2 Sediment Contaminants

Measured sediments in MdR have not been found to have levels of chemicals high enough to qualify as hazardous to humans under the California Hazardous Waste Control Law (Moffatt & Nichol 1999). Nevertheless, the levels of specified chemicals in MdR sediments may be high enough to adversely affect marine organisms (Soule *et al.* 1997, ABC Labs 1997, SWRCB *et al.* 1998).

Sediment contamination within the marina may have originated from several sources, including stormwater runoff from surrounding parking lots, inflow from Ballona Creek (which drains much of the surrounding urbanized area), and from two storm drains -- Oxford Basin and Washington Street -- that empty into interior portions of the marina. Local sources include discharges and scrapings from boats berthed in the marina, and from historical industrial developments near Venice (Soule *et al.* 1997).

ABC Lab studies suggest the most contaminated sediments are in the channel (Stations 3, 4, 5, 25) and uppermost portions of the harbor (Stations 9, 10, and 11 in Basin E and F), whereas Basin B and Basin C (Stations 6 and 8) and Basin H (Station 7) have yielded some of the least contaminated sediments in the harbor.

The State Water Resources Control Board conducted investigations of sediment chemistry, toxicity, and benthic community conditions in Marina del Rey and other selected water bodies in the Los Angeles Region (SWRCB *et al.* 1998). Their data suggest that MdR sediments contain significant chemical contamination and some toxicity to amphipod crustaceans.

Three indices for comparing potential impacts on marine life are used to illustrate the level of potential toxicity in Marina del Rey sediments: Effects Range-Low (ER-L) and Effects Range-Medium (ER-M) (Long & Morgan 1990), and Apparent Range Effects (AET). Biological effects probably occur at or above ER-M (Long & Morgan 1990). An AET concentration of a selected chemical is above what statistically significant biological effects always occur, and therefore, are always expected (ABC Laboratories 1997).

2.9.2.1 Organochlorines (OCS)

Inflows from Oxford Lagoon and Ballona Creek appear to be the primary sources of pesticide derivatives including dichlorodiphenyl dichloroethylene (DDE; a break-down derivative of DDT), and polychlorinated biphenyls (PCBs). Marina-wide averages for DDE and PCB contamination in 1996 were 18.5 and 17.0 parts per billion (ppb), respectively; and all harbor stations exceeded at least one OC sediment limit above concentrations where adverse effects may begin to affect resident organisms or chronically impact sensitive or younger marine organisms.

Concentrations of organochlorines in the sediments near the Administration docks and Villa Venetia, both on Fiji Way, were some of the highest in the harbor: Station 4 total DDE level was 21.6 ppb, while the concentration of PCBs was below the detection limits

< 20 ppb. The State Water Resources Control Board Study however, indicated that PCB concentrations in sediments south of Station 4 (Station 48005) and in Basin B (Station 48003) were higher that most Los Angeles County marinas (SWRCB 1998). At the same time, for comparison, the DDE concentration in Ballona Creek was 17.8 ppb, and the PCBs measured 20 ppb.

Total DDT and DDE concentrations in the harbor exceeded the ER-L and the ER-M limits, and the AET limit for DDT was exceeded at Stations 2, 3, 4, 13, 22, and 25. Chlordane results obtained during the State Water Resources Control Board Study (SWRCB *et al.* 1998) indicate that the ER-M values for this pesticide were exceeded at all MdR Stations located between the entrance channel and Basin E. High chlordane and dieldrin concentrations also were found by the SWRCB study (SWRCB *et al.* 1998) at Station 44024, the approximate same location of ABC Laboratories' Station 12.

2.9.2.2 Heavy Metals

Concentrations of heavy metals in MdR are highest in the channel and back-basin sediments; and, levels are positively correlated to the finer sediments that attract chemical contaminants (Soule *et al.* 1987, ABC Laboratories 1997). Several metals (arsenic [As], chromium [Cr], copper [Cu], iron [Fe], manganese [Mn], mercury [Hg], selenium [Se], and silver [Ag]) likely originate from watercraft in the marina, through either hull paints and/or corrosion of metal components of boats and boat engines. All stations in 1996 exceeded at least one metal limit of potential toxicity and most exceeded at least one metal limit of probable toxicity to marine organisms, as listed as toxic by NOAA. Areas that exceeded most metal limits were Basins E and F, and most channel stations (ABC Laboratories 1997).

Based on results of the SWRCB 1997 investigation, sediments from Basin E (Stations 44014, 48001), Basin D (48002), Basin B (48003), and channel stations (48004 and

48005) produced excessive ER-Ms for copper, mercury, and zinc. The ER-M for zinc (Zn), collected from Ballona Creek (Station 44024), also was exceeded.

Tributyltin (TBT) is a toxic substance found in anti-fouling paints that were banned for use on vessels -- less than 25 meters in length -- due to its dangerous effects on marine life. TBT concentrations in sediments are highest in Basins E and F, and at the end of the harbor channel (ABC Laboratories 1997).

2.9.2.3 Organic Materials

Organic materials, e..g., food nutrients, carbonaceous organics, and food oils and grease, enter MdR through non-point source stormwater runoff from street drains, flood control channels, municipal wastewater discharges, and vessel discharges. Highest concentrations occur in the upper-most areas of the harbor (Basin E and F) and are lowest in Basins B and H, and inside the entrance channel breakwall. Distribution of these materials follows the spatial patterns of heavy metals and correlates to the fine sediment regimes in these areas.

2.9.3 Benthic Infauna

The benthic infauna of the marina incorporates bottom-dwelling organisms that live in or on the surface of the seafloor in unconsolidated sediments. Typically, the more abundant and diverse infauna consist of nematode worms, polychaete worms, clams, snails, arthropods (isopods, amphipods, cumaceans ('hooded shrimps'), shrimps, and crabs), and ophiuroid echinoderms (brittle stars). These organisms are influenced by a range of physical and chemical attributes in their environment such as sediment grain size, and amounts of organic carbon, sediment nutrients, trace metals, organochlorines, and other contaminants. Over the last 30 years, marine studies have focused on the benthic community because its organisms are useful in measuring environmental change because (1) they inhabit the sediments (2) they do not migrate, and (3) for the most part, they are taxonomically diverse and familiar to researchers. Some organisms are also used as indicators of natural or culturally induced actions such as dredging and discharges of organic and industrial wastes because they are opportunistic and can out-compete organisms which do not survive in stressed environmental conditions.

Historical analyses of the benthic community indicate nematode worms and annelid worms are the dominant phyla and contribute the largest number of individuals to the infaunal community (Soule *et al.* 1993). Less common are mollusks, crustaceans, and echinoderms. It is believed these organisms are less abundant and diverse because they are more sensitive to the high levels of contaminants that occur in MdR sediments.

From over 25 years of sampling conducted by the Harbors Project and ABC Laboratories, it has been found that the dominant benthic infauna in Marina del Rey includes nematodes and several species of polychaete worms that are typical of coastal embayments. Representative species include the capitellids *Capitella capitata* and *Mediomastus ambiseta*, the spionids *Pseudopolydora paucibranchiata* and *Prionospio heterobranchiata*, and the cirratulid *Tharyx* spp. Spatial analysis of benthic infauna distribution in Marina del Rey suggests that species richness (number of species per area) will decline along a gradient between the entrance channel and the dead-end basin environments in Basins E and F (Soule *et al.* 1997).

ABC Laboratories (1997) grouped stations together based upon similar sediment and biological characteristics. Their groupings consist of the following,

★ Stations characterized by infauna organisms indicative of disturbance (Basin E);

★ Stations that were "moderate" in number of taxa, individuals, and diversity (upper channel and Basin D);

★ Stations characterized by low diversity, but moderate for other indices (Basins B, H, and F);

★ Stations characterized by high numbers of species and individuals, and moderate values for other indices (lower channel Stations 3 and 4);

★ Stations characterized by high abundance but low diversity, dominance, and infaunal index values and considered to be "stressed" due to the high numbers of nematodes (Ballona Creek and Harbor Entrance Channel); and

★ High diversity but low number of individuals, and an infaunal trophic index that is indicative of "disturbance" (Harbor Entrance Channel).

Infaunal density (here as individuals per m^2) measured during the ABC study ranged from 2,160 (Station 10, Basin E) to 126,640 (Station 2, harbor entrance) (mean density = 24,170/m^2). Species richness varied from 28 to 78 species at station 10 and Station 4 (Basin E and the Administration docks). Average richness was 50 species per station. Species diversity [19] varied between 0.92 and to 3.03 at the harbor entrance Stations 1 and 2, respectively.

In 1980, the Southern California Coastal Water Research Project described the benthic community associated with the Administration Docks. The particular benthos had the (1) highest density @ 26,630 individuals per m^2; (2) highest species richness @ 28 species; and (3) a moderate species diversity (5th highest @ 2.38) of all 10 marina stations; and (4) an Infaunal Trophic Index value of 69 that is representative of "normal" seafloor conditions.

Dominant species at Station 4 (Basin E and the Administration docks) were the polychaetes *Mediomastus ambiseta, Exogone lourei, Leitoscoloplos pugettensis, Euchone limnicola, Prionospio heterobranchia, Mediomastus californiensis,* and *Armandia brevis*; the caprellid crustacean *Mayerella banksia*; the amphipod crustacean *Amphideutopus oculatus*; and the clam *Tagelus subteres.*

19 Species diversity (H') = number of different species in a particular area (species richness) weighted by a measure of abundance, such as the number of individuals (N) or amount of biomass in the area.

In Ballona Creek, infaunal density was moderately high (73,850 individuals per m^2); species richness was above average (63); species diversity was the lowest of all sites (1.17); and the Infaunal Trophic Index was on the low range of normal (62.6). Dominant taxa included nematode worms, the polychaetes *Mediomastus ambiseta, Pseudopolydora paucibranchiata, Armandia brevis, Polyopthalmus pictus, Exogone lourei,* and *Prionospio heterobranchiata*; the clam *Tagelus subteres*; the cumacean *Oxyurostylis pacifica,* and the caprellid amphipod *Mayerella banksia.*

Biota at Stations 1 and 2, at the mouth of Marina del Rey, and Station 10 (Basin E) showed evidence of ecological stress. All of these stations tended to have comparatively high proportions of organisms that are common to habitats near wastewater diffusers or are otherwise known to be present in disturbed habitats. Nematode worms, in particular are common in stressed environments and they dominated the abundances at Station 12 in Ballona Creek (73 % of the total abundance).

Benthic studies conducted in 1997 (SWRCB *et al.* 1998) indicated that the Marina del Rey benthic community structure was adversely correlated with heavy metals, several pesticides, and PCBs, sediment grain size, and Total Organic Carbon (TOC). Toxicity tests, based upon the survival of amphipods over a 10-day period suggested that toxicity was highest in the basin samples and negatively correlated with metals, tributyltin, ER-M exceedance, and percent clay. Benthic community analyses suggested that marina basin benthic community was "transitional" based on a Relative Benthic Index value (RBI ≤ 0.30), whereas Stations 48004 and 48005, which bracket the waters near the Administration Docks, were not degraded (RBI ≥ 0.61).

To identify areas of primary concern, in terms of chemical pollution and potential impacts on beneficial resources, the SWRCB study compared the relative degree of chemical pollution with different measures of toxic effect, and combining these data with information on benthic community degradation, a weight-of-evidence approach was employed to identify the most impacted sites. The lowest ranking "Category 1" included stations with elevated chemistry, recurrent toxicity, and degraded benthos, whereas the highest ranking "Category 8" included stations with chemistry, toxicity, and benthic degradation below thresholds. These sites are relatively undisturbed sites that support a healthy benthic community.

Station 48004 was categorized as a "Category 7" area that exhibited elevated chemistry but biological measures were below threshold and indicative of normal conditions. The Ballona Creek benthos (Station 44024) was polluted with a number of pesticides and exhibited recurrent toxicity to amphipods, but no biological studies were conducted and no categorization was provided. However, based upon the work of ABC Laboratories, who did investigate the benthic infauna of the Creek, this site is likely to be classified as a Category 4 or 5 area, that exhibits elevated chemistry, toxicity, and mixed results from biological indicators.

2.9.4 Ichthyofauna

Marina del Rey waters are believed to be viable habitat and a nursery for numerous species of marine fish (e.g., ABC Laboratories 1997), based on several studies of the fish populations of Marina del Rey over the previous 20 years. Surveys of MdR fish populations were studied by John Stephens in the late 1970s, in the early 1980s, and then yearly with the Van Tuna Research Group (Occidental College) for the USC monitoring program between 1984 and 1996. Allen (1991) studied the fishes of Ballona Creek and Marina del Rey in 1990 and 1999. ABC Laboratories (1997) continued the Occidental College studies. Since 1984, the Occidental College and ABC Laboratory surveys recorded 103 species of fish in the harbor. During 1996, ABC Laboratories identified 53 species and 235,410 individuals (including eggs and larvae).

Common reef associated species found along the south breakwater of Marina del Rey during diver surveys in 1996 included Opaleye (*Girella nigricans*), Sargo (*Anisotremus davidsonii*), Black Surfperch (*Embiotoca jacksoni*), Blacksmith (*Chromis punctipinnus*) Barred Sand Bass (*Paralabrax nebulifer*), Kelp Bass (*Paralabrax clathratus*), and Pile Perch (*Damalichthys vacca*). The most abundant bottom fishes in the channel at Station 5, captured by trawl nets, included California Halibut (*Paralichthys californicus*), Barred Sand Bass, White Croaker (*Genyonemus lineatus*), and Round Stingray (*Urolophus halleri*). Topsmelt (*Atherinops affinis*) and Deepbody Anchovy (*Anchoa compressa*) are common schooling fishes found throughout the marina waters. Additional information on MdR fishes is available in the companion report, Marina del Rey Boat Central: an evaluation of potential impacts on marine bird populations (Froke 2008).

Collections of ichthyoplankton in marina waters were dominated by goby, and blenny larvae during the summer and winter months; also, anchovy larvae were abundant during the summer sample periods.

L.G. Allen (1991) identified 29 species of fish and collected 6,063 individuals using otter trawl net surveys in lower Marina del Rey and Ballona Creek. The study was conducted between July 1990 and April 1991. The majority of species (23) and individuals (90 percent) were collected in Marina del Rey. Overall, the catch in lower MdR was characteristic of harbor environments throughout southern California, whereas the fish assemblage in Ballona Creek was relatively depauperate because of the absence of the highly abundant species (e.g., Northern Anchovy, Queenfish, and White Croaker). The creek results were similar to shallow marina habitats adjacent to estuaries and marinas in Southern California (Allen 1985). The catch was dominated by Queenfish (*Seriphus politus*), Northern Anchovy (*Engraulis mordax*), Cheekspot Goby (*Ilypnus gilberti*), and White Croaker (*Genyonemus lineatus*). Species captured exclusively in Marina del Rey were Queenfish, Northern Anchovy, and White Croaker, while Cheekspot Goby was the most abundant fish captured in the Ballona Channel. Species captured in comparable numbers in both areas were California Halibut, Barred Sand Bass, Arrow Goby (*Clevelandia ios*), and Diamond Turbot (*Hypsopetta guttulata*).

2.9.5 Sensitive Marine Biological Resources

2.9.5.1 Seagrasses

There are no stands of Eelgrass, the commonest seagrass of Southern California, known to exist in Marina del Rey. This species, however, occurs widely throughout other Southern California bays and harbors at depths between approximately 0.0 and -10 ft between MLLW (Mean Lower Low Water;). It serves as an important habitat for larval and adult fishes that use the vegetation for cover and protection from predators. The nearest Eelgrass sites occur in Los Angeles Harbor and Mugu Lagoon, and an offshore form of Eelgrass has been reported offshore of Malibu.

Ditchgrass (*Rupia maritima*) is an uncommon seagrass species found in quiet water habitats. Since 1979, the species has been observed irregularly within Basin D (Mother's Beach), (Soule *et al.* 1993, 1996).

2.9.5.2 Fish & Wildlife (collectively, *Wild Vertebrates*)

2.9.5.2.1 Tidewater Goby

The Tidewater Goby, *Eucyclogobius newberryi*, is a federally listed endangered species that has been expatriated from numerous creek mouths along the Southern California coastline. Currently, however, the species can be found in shallow marine areas and lower reaches of streams between San Diego and Humboldt County, particularly in waters that have salinity values at less than 10 ppt. The population of Tidewater Goby is depleted due to (a) reduced or eliminated flows in the lower reaches of coastal streams, (b) pollution, and, (c) the filling, channelization, and other destructive alterations of their habitats. Goby populations have disappeared from about 74 percent of all coastal lagoons from Morro Bay southward to San Diego (U.S. Fish and Wildlife 1994). The Tidewater Goby occurs in neither Marina del Rey nor the Ballona Channel.

2.9.5.2.2 California Halibut

Although it does not have a formal special status, the California Halibut is considered by resource agencies to be a sensitive species because of its commercial value and a continued region-wide reduction of its nursery habitat in bays and wetlands. California Halibut spawn at sea and its ensuing larval stages are planktonic. After several months, larval halibut settle to the bottom and migrate into shallow coastal waters including embayments, such as Marina del Rey. Young-of-the-year (YOY) animals prefer shallow waters between roughly -1.5 ft and -3.5 ft MLLW, whereas juveniles prefer deeper channel bottoms to a maximum depth of approximately -15 ft MLLW. After spending nearly nine months in coastal embayments, juveniles move out and into the open coastal environment. The species uses inshore waters of bays, harbors, and estuaries as a nursery habitat. California Halibut are common in the waters of Marina del Rey, but they do not occur in the Ballona Creek.

2.9.5.2.3 California Least Tern

The California Least Tern, *Sternula antillarum browni*, breeds in ocean bays within a very limited range of Southern California; the subspecies of the Least Tern also breeds in San Francisco Bay and extreme northern Mexico. This migratory bird is a state and federally listed endangered species. Least Terns hunt primarily in shallow estuaries and lagoons, where smaller fish are abundant. To extract their catch, the birds will hover until spotting prey then plunge into the water, but without fully submersing,. In the bays and lagoons of

Southern California and northern Mexico, favored prey of the terns include anchovy, smelt, silversides, shiner surfperch and small crustaceans. The terns frequently feed alongshore in the ocean, especially when close to lagoons and bay mouths.

California Least Terns forage throughout Marina del Rey. The species has been observed nesting on Venice Beach during March - September; and there, during 2006, 384 tern nests produced between 280 and 320 fledglings (K. Keane, pers. comm., 05 Jan 2006).

2.9.5.2.4 California Brown Pelican

The California Brown Pelican, *Pelecanus occidentalis californicus*, nests only on islands in the Gulf of California and along the outer seacoast from Baja California to West Anacapa and Santa Barbara Islands (only recently), offshore of the Southern California mainland. Non-breeding California Brown Pelicans range northward along the Pacific Coast from the Gulf of California to Washington and southern British Columbia.

Currently, the pelican is federally listed as endangered throughout its range in the United States, except the Atlantic Coast, Florida and Alabama. The U.S. Fish & Wildlife Service (USFWS) has reviewed and found warranted a private petition to remove the Brown Pelican from the Endangered Species List (see Federal Register: May 24, 2006 [Volume 71, Number 100]). In keeping, the agency is conducting its 5-year study to determine whether there is sufficient credible information to support delisting the species.

Roosting and loafing sites provide important resting, or roosting, habitat for breeding and non-breeding pelicans. Valuable roosting sites include offshore rocks and islands, river mouths with sand bars, breakwaters, pilings, large bouys -- even boat decks -- and jetties along the Pacific Coast and into San Francisco Bay.

Brown Pelicans are dependent for food on Northern Anchovies and Pacific Sardines, both of which have declined in numbers due to over-fishing. Breeding populations and nesting productivity of the species vary dramatically from year to year, dependent on El Niño events and other climatic and oceanic changes.

California Brown Pelicans presently forage inside Marina del Rey and neighboring waters; and the birds roost and loaf throughout the harbor, on docks and other floating structures, and especially on the rock jetties of the harbor entrance.

2.9.6 Recent Studies of Marine Biological Resources

Rick Ware and his associates of Coastal Resource Management (CRM) conducted a pre-construction survey of marine botanical resources inside MdR on 17 October 2006. The specific purposes of the CRM investigation, as prescribed by regulatory agencies, were to (a) determine whether the native Eelgrass, *Zostera marina*, and the nonnative invasive alga, *Caulerpa taxifolia*, were present in the marina, and specifically in the vicinity of the proposed MdR Boat Central; and (b) to assess the potential effects of construction and long-term operation of the proposed facilities on populations of the two species, if present.

2.9.6.1 *Caulerpa taxifolia*

On 17 October 2006, CRM conducted a project-specific survey for *Caulerpa taxifolia*, n.c.n. (no common name)[20], within marine waters adjacent to MdR Parcel 52R & GG (CRM 2007). In sum, other than *Sargassum muticum*, which is ubiquitous in MdR, no invasive algae, including *Caulerpa*, was observed during the study.

Caulerpa was introduced to Southern California at Laguna Agua Hedionda (San Diego County) during 2000, and Huntington Harbour (Orange County) during 2001. *Caulerpa* is a tropical-subtropical species of Indo-Pacific waters and the Red Sea that is collected and widely sold for use in aquariums; and the likely source of its introduction to coastal waters of California are aquarists who dump their tank waters into storm drains, or directly into the bays. Although outbreaks have been contained, the State Water Resources Board, NOAA Fisheries, and California Department of Fish and Game (CDFG) presently require that waterside projects with potential to spread the species, as through dredging and bottom-disturbing activities, conduct pre-construction surveys to determine whether the species is present. Whenever *Caulerpa* is found present, project applicants are required to take steps to eradicate the species prior to start of construction. Eradication of *Caulerpa* must use only agency-approved standard protocols, and employ survey personnel who are certified by NOAA Fisheries and CDFG.

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20 Caulerpa taxifolia is a green alga native to tropical waters that typically grows in limited patches. A particularly cold tolerant clone (tolerant of temperatures at least as low as 10 °C for a period of three months) of this species has already proven to be highly invasive in the Mediterranean Sea and efforts to control its spread have been unsuccessful. In areas where the species has become well established, it has caused ecological and economic devastation by overgrowing and eliminating native seaweeds, seagrasses, reefs, and other communities. In the Mediterranean, it is reported to have harmed tourism and pleasure boating, devastated recreational diving, and had a significant impact on commercial fishing both by altering the distribution of fish as well as creating a considerable impediment to net fisheries. Recently, Caulerpa had been detected, then eradicated from two locations in southern California, and other infestations of the noxious species may also exist but remain undetected.

Due to its capacity to out-compete native algae and seagrasses, *Caulerpa* has the potential to cause ecosystem-level damage within bay and nearshore marine communities. *Caulerpa* stands grow as dense 'smothering' blankets, which can kill virtually all native aquatic vegetation in its path. *Caulerpa* invasions, by virtue of their effect on native marine vegetation, ultimately may be lethal to, or displace, native wildlife that rely on the native plants and cover.

2.9.6.2 *Zostera marina*

Eelgrass, or Seawrack (*Zostera marina*), is a marine angiosperm (flowering plant) that grows in the soft sediments of coastal bays and estuaries, and occasionally offshore to depths of 50 feet. An Eelgrass canopy, consisting of shoots and leaves, and the vertical cover it creates, attracts notably more marine invertebrates and fishes versus comparably size areas where sediments are sparse or barren. A diverse community of bottom-dwelling invertebrates, i.e., clams, crabs, and worms, live on Eelgrass or within the soft sediments that cover its root-and-rhizome system. Locally, ninety-seven species of invertebrates were found associated with Eelgrass blades and shoots in Sunset Bay, Huntington Harbour, and Mission Bay; and another 216 taxa were found living among the roots and sediment of the same sites (MBC Applied Environmental Sciences 1986).

Eelgrass vegetation provides valuable nursery shelter and foraging cover for juveniles of numerous fish species, e.g., California Halibut and Barred Sand Bass. Closer to the surface, Eelgrass meadows provide forage resources for coastal waterbirds, notably Brant (Brent-Goose; *Branta bernicla*), a sea-going goose that is nearly an eelgrass-obligate feeder outside of its nesting season and during migration. California Least Terns hunt juvenile Topsmelt and other small fish that are attracted to the Eelgrass, or Seawrack cover. Within bay communities, Eelgrass contributes organic detritus that is consumed by benthic invertebrates such as polychaete worms, and that is reduced to primary nutrients by marine bacteria.

Because of the high ecological value of Eelgrass meadows, it is important to document the location and amount of the plant in areas of proposed waterside developments, then to mitigate potential losses and adverse impacts by avoidance, reduction, or compensation.

There are few records to document the presence of seagrasses in harbor basins or channels inside MdR. Eelgrass was not found during the mentioned May 2006 survey of (26) sites where seawall improvements were/are proposed (Coastal Resources Management 2006a). In earlier studies, Ditchgrass, a seagrass found in quiet water habitats and that is important habitat for larval and adult fish, was reported to occur within Basin D between 1979-1997 (Soule & Oguri 1993; Soule *et al.* 1997).

2.9.7 Marine Field Surveys

Eelgrass and *Caulerpa* surveys were conducted by R. Ware and L. Jenkins (CRM) on 17 October 2006; and the underwater surveys were conducted adjacent to the Basin H project location -- using SCUBA and a 14-ft inflatable vessel. Surface support personnel were in communication with the diving-biologist using an Offshore Technology Systems, Inc. underwater communication system. All surveys were conducted in accordance with the Southern California Eelgrass Mitigation Policy (NOAA Fisheries 1991, as amended) and/or the *Caulerpa* Control Protocol (NOAA Fisheries, Version 2.1, March 2006).
A total of twenty-eight 230-ft long transects and thirteen 108-foot long transects were conducted perpendicular to the seawall at 10-ft (3-m) intervals. Bottom type, common marine life, and the presence or absence of Eelgrass and invasive algae were recorded. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Santa Monica Pier tidal survey station.

2.9.7.1 Survey Protocols

Marina del Rey is considered a "non-infected" system and requires a moderated "surveillance level" monitoring effort for the presence of *Caulerpa*. The following information regarding the required level of survey effort is extracted from the NOAA Fisheries *Caulerpa* Control Protocol.

To determine the possible presence or absence of *Caulerpa,* a systematic sampling of the entire marine project site, including inspection of at least 20 pct of the bottom, was conducted at the prescribed surveillance level.

2.9.7.2 Survey Results

Project surveys encompassed a total of 70,008 sq ft: Underwater visibility conditions averaged 4-ft (2-ft on each side of the centerline); and the area of bay floor observed was 31,366 sq ft (43.60 pct of total project area).

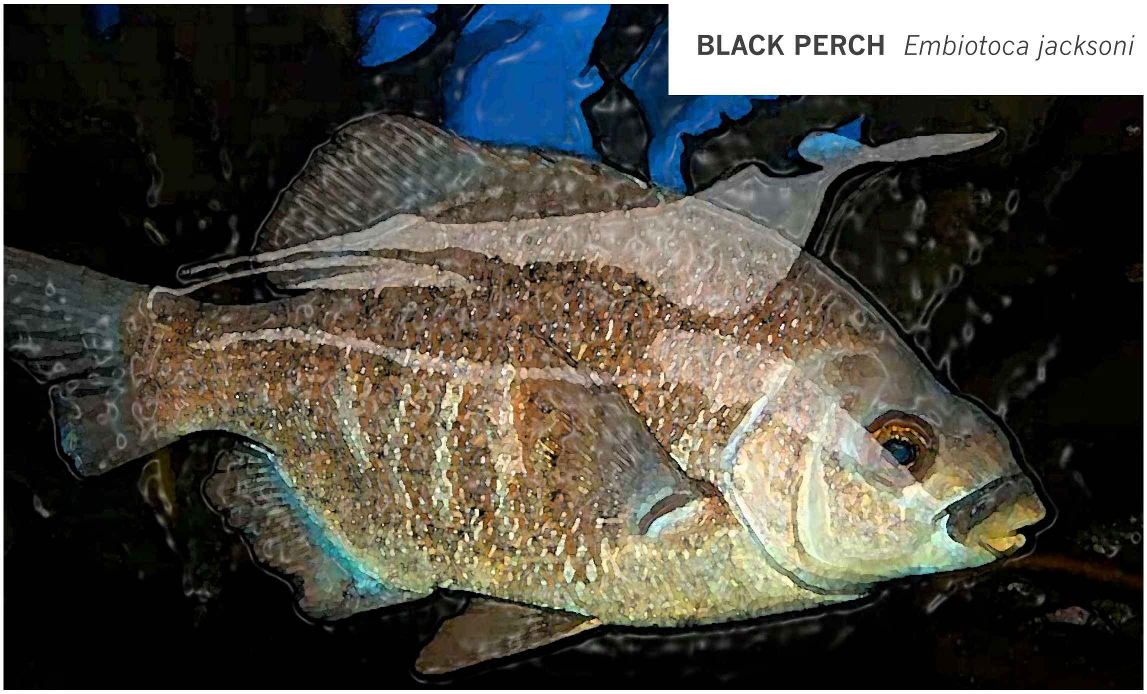
The survey was conducted at depths between the top of the riprap during a +3-ft high tide along the seawall and a maximum depth of - 9-ft MLLW, 230 ft seaward from the bulkhead. Substrate types in the survey area included cement seawall, rock riprap, and unconsolidated sand-to-silty sediments beyond the riprap. Sediments contained a greater proportion of silts with increasing distance into the channel, near the launch ramp docks. Underwater visibility was low-to-moderate and averaged 2 ft on each side of the transect centerline. Water temperature was 66 degrees F; and tidal currents were minimal during the survey.

2.9.7.2.1 Eelgrass Results

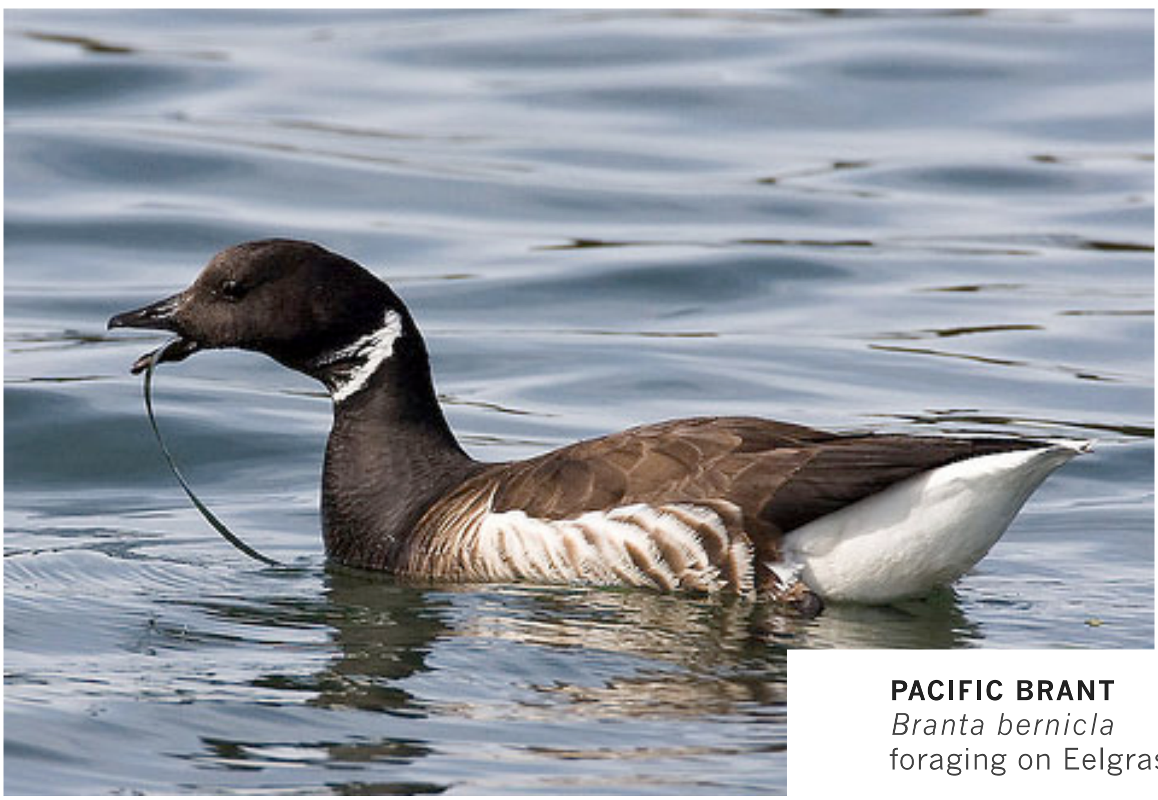
Eelgrass was not present in the project area. The only location where a seagrass , in this case Ditchgrass, had been reported in recent MdR surveys was Basin D (Mother's Beach) and the species has occurred there irregularly since 1979 (Soule & Oguri 1993; Soule *et al.* 1997). As previously stated, there are no records of Eelgrass from MdR, even though it is the most common seagrass in other waters of Southern California. CRM personnel conducted site-specific Eelgrass surveys in Marine del Rey in May and December 2006 at 22 sites throughout the harbor, for the County of Los Angeles Phase 1 Seawall Repair Project (CRM 2006a, 2007a), in Basin B (CRM 2006b), along the south jetty in front of the Villa Venetia apartment complex (at the terminus of Fiji Way; CRM 2006c) and in front of Fisherman's Village, also on Fiji Way (CRM 2007b). Specifically, no Eelgrass was found present at any of these locations.

2.9.7.2.2 *Caulerpa* Results

No stands of the invasive algae were located inside the project area, nor has any been observed within the Marina del Rey harbor ecosystem to date. The total survey area was 70,008 sq ft.; and, based on underwater visibility conditions that averaged 4 ft (2 ft on each side of the centerline), the actual area of bay floor that was observed was 31,366 sq ft (43.50 pct of total area). A minimum coverage of 20 pct is required for non-infected systems such as the MdR harbor. The invasive algae reporting form, submitted to the National Marine Fisheries Service and CDFG is provided in Appendix A.



BLACK PERCH *Embiotoca jacksoni*



PACIFIC BRANT
Branta bernicla
foraging on Eelgrass

2.9.7.2.3 Marine Biota Observed During Seagrass & Invasive Algae Surveys

The overall diversity of marine life recorded from CRM's 2006 field survey was low. The invasive *brown* algae (Phaeophyta), *Sargassum muticum*[21] was the most common algae observed, and it was growing on the riprap against the bulkhead. This nonnative alga is common inside MdR very much as it is in other bays, harbors and offshore settings in Southern California. The species is present on the existing boat dock pilings and bulkhead at the Boat Central site. While it does provide habitat for marine fish and invertebrates, it is not considered a sensitive species or one of significant ecological value.

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[21] Sargassum muticum is originally from Japan, and was brought to the Pacific Northeast in the 1930's. In North America its range stretches from British Columbia to Baja California, and it has also succeeded in invading the coasts of England, France, Scandinavia, and the Iberian peninsula. The species was most likely transmitted via Japanese oysters (Crassostrea gigas) rather than by ships, as its distribution is not concentrated around ports and the holdfast mechanism is not strong enough to remain attached to a moving vessel (Deysher & Norton 1982).

Pacific Northeast temperatures range from 9 to 13 degrees Celsius, with central California on the cooler end due to upwelling. Because S. muticum prefers warmer water, this stretch of coast is free from invasion. This raises the question of how S. muticum managed to migrate 1100 km from Northern California to Southern California in one leap. It most likely travelled along the California Current, which flows southward and shoreward from March to July, while the rest of the year algal branches tend to be carried out to sea. But S. muticum is described as being fertile only in July and August, and even the earliest reproductive branch would not have time to travel 1100 km and still release germlings. Fortunately for S. muticum, it survives as a pelagic organism and is both monoecious and self-fertile, which means that a single vegetative branch could float down to Southern California and establish a new population by itself (Deysher & Norton 1982.)

While not muticum, the best-known population of Sargassum is that found in the Sargasso Sea in the Atlantic Ocean. This community is not attached to a substratum, but rather is purely pelagic, forming enormous floating mats. No one knows if the pelagic alga is a separate species or if it is an attached species that has become detached and reproduces asexually by thallus division.

Short-term losses of this invasive species, and more so the animals that inhabit it, would have a less-than-significant impact as there is an abundance of the algae adjacent to the project area and throughout the marina. Once the new dock structure is constructed, it will, without doubt, recolonize the habitat. No long-term significant impact on this species will occur as a result of the project, as desirable as that would be, ecologically.

Onsite invertebrates include Tube-dwelling Anemone (*Pachycerianthus fimbriatus*), predatory Sea Slugs (*Navanax inermis*), and nonnative and invasive Mediterranean Mussels (*Mytilus galloprovincialis*). Vertebrates seen were an unidentified perch (Embiocidae) and Round Stingrays (*Urolophus halleri*).

The invertebrates and fishes discussed on page 9 of the Eelgrass Survey Report, i.e., *Pachycerianthus fimbriatus, Navanax inermis, Mytilus galloprovincialis*, an unidentified embiocid perch, and *Urolophus halleri*, are all common species that occur throughout the Marina del Rey harbor. *Pachycerianthus, Navanax*, and *Urolophus* are associated with the soft-bottom benthos, while *Mytilus* attaches to bulkheads, pilings, and docks. None of these or other local animals that dwell on the bottom, on dock-and-pier pilings and in the water column are sensitive, rare, threatened, or endangered species.

Any loss of individuals or populations that are now attached to MdR 52R docks and pilings, and in the soft-bottom benthos, will be short-term, and the short-term effect on marine life would be less than significant. *There will be no long-term effect on species and their habitats from the dock improvement project.* Species such as mussels that will be removed along with old pilings and docks will soon recolonize the new structures once they are built and in place. Recolonization will occur over a period of a 2-3 months to as many years. Water-column fish such as *Embiotoca jacksoni*, and soft-bottom species such as *Urolophus halleri* will not be adversely affected by project construction *or* the long-term operation of the new structures. Fish will avoid the construction zone during construction because of potentially increased turbidity, vessel movements, and noise; however, some species may also be attracted to biofouling materials that fall off the original docks and pilings as they are removed. It is predictable that no fish mortality will result from project construction.

3.0 ENVIRONMENTAL EFFECTS

3.1 THRESHOLDS FOR DETERMINING SIGNIFICANCE OF IMPACTS

The threshold for significance of impacts to Marina del Rey biological resources is determined by scientific judgment, and considers the relative importance of the habitat and/or species affected by project implementation. For the purposes of this analysis, the project's effects on biological resources are considered to be significant if it would:

- ★ Substantially affect a rare, threatened, endangered, or candidate plant or animal species, or the habitat of any such species;
- ★ Substantially diminish or degrade the marine habitat of any marine plant or animal;
- ★ Result in notable net loss of a biotic community that is subject to local, state, and/or federal regulations or that is otherwise of very limited occurrence in the region.
- ★ Interfere substantially with the movement of any resident or migratory fish and wildlife species; or
- ★ Conflict with adopted environmental policies, general plans, or regulatory policies of the community and State of California.

3.2 TURBIDITY [22]

3.2.1 Effect of Turbidity on Water Quality

The bottom of the MdR harbor basin is comprised of sand and mud. Under winds, vertical mixing brings fine sediments, suspended near the bottom, up into surface waters. Typical surf outside the harbor also keeps fine sediment particles suspended in layers above the bottom. The system of naturally-occurring turbidity and suspended loads of solids provides the background levels useful to evaluate the addition of localized sediment sources from construction activities.

Pile installation using pile-driving and hydraulic jetting methods will result in a temporary increase of suspended sediments, and consequently, a temporary reduction in submarine light levels. Another related effect of pile-driving would be a

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22 BIOLOGICAL PRODUCTIVITY & Marine Ecological Processes

Fundamental to marine ecology is the discovery and understanding of the principles that underlie the organization of marine communities and govern their behavior, such as controls on population growth and stability, quantifying interactions among populations that lead to persistent communities, and coupling of communities to form viable ecosystems. The basis of this organization is the flow of energy and cycling of materials, beginning with the capture of radiant solar energy through the processes of photosynthesis and ending with the remineralization of organic matter and nutrients.

Photosynthesis in seawater is carried out by various marine organisms that range in size from the microscopic, single-celled marine algae to multicellular vascular plants. The rate of photosynthesis, and thus the growth and primary production of marine plants, is dependent on a number of factors, importantly the availability and uptake of nutrients, temperature, and intensity and quality of light. Of these three, the last probably is the single most important in governing primary production and the distribution and abundance of marine plants. Considering the high attenuation of light in water and the relationships between light intensity and photosynthesis, net autotrophic production is confined to relatively shallow water depths. The major primary producers in marine environments are intertidal salt marshes and mangroves, submersed seagrasses and seaweeds, phytoplankton, benthic and attached microalgae, and coral reefs with symbiotic algae (zooxanthellae). On an areal basis, estuaries and nearshore marine ecosystems have the highest annual rates of primary production. From a global perspective, the open seas are the greatest contributors to total marine primary production due to their overwhelming size.

potential decline of dissolved oxygen levels, especially in areas where the re-suspended sediments are anoxic.[23]

Turbidity also may increase if prop-wash stirs up bottom sediments or if vessels deploy and retrieve anchors. These impacts will result in a short-term impact on water quality that can be mitigated to less than significant levels by employing Best Management Practices (BMPs). BMPs would reduce the potential for the spread of turbid waters outside the construction zone. The levels of contamination in waters surrounding the project area are fully expected to dissipate and clear soon after construction has finished and demobilized. Thereby, the short-term effects of pile-driving, which also include elevated noise, would terminate, and potential long-term effects would be obviated, and altogether reduced to a less than significant degree. Furthermore, the long-term operation of the Boat Central facility will not generate appreciable negative water quality, principally because it is a dry-storage and landside maintenance program, and so doing it would not generate harmful impacts into the long-term.

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23 **Anoxia**, the complete absence of dissolved oxygen (DO), is commonly encountered in bottom waters, and results from enhanced sedimentation associated with culturally impacted or constructed embayments. Anoxic and hypoxic (low levels of DO)* events are caused by the decomposition of organic matter by oxygen-utilizing bacteria. In many cases, anoxia results from eutrophication (enhanced sedimentation of Particulate Organic Matter (POM) to bottom waters) and reflect an underlying problem of excessive nutrient loads, therein. DO depletion in coastal and estuarine waters is a growing global concern.

(* Bottom water dissolved oxygen (DO) concentrations, which are near zero under anoxic conditions, are <2.0 mg L^{-1} O_2 under hypoxic conditions).

3.2.2 Effect of Turbidity on Birds

In view of findings and analyses made in the separate bird report (Froke 2008)[24], it is evident that elevated turbidity, if left unabated, could result in a significant reduction of avian habitat values. The probable outcome of a large flux of sediments into the upper portion of the water column would be a deleterious to foraging conditions, particularly for species of wading, swimming and diving predators. Among the species at MdR that would be most impacted by *highly turbid* waters are two federally-listed endangered birds -- the California Least Tern and California Brown Pelican. Both the tern and pelican are aerial searchers that dive to catch birds in sight (see Froke 2008; the Boat Central Bird Report), therefore their ability to see into the water is crucial to their success.

Regardless of the cause or source of turbid waters, an increase in the amount of suspended particles does, by definition, decrease the amount of sunlight in the water column. In so doing, turbidity provides more visual cover for swimming prey, including fish larvae and crustaceans, and effectively hampers the hunting capabilities and success of predatory birds that require visual contact with their prey (e.g., Lotem *et al.* 1991). French scientists investigated a 'positive effect' of turbidity, and birds' need for visual contact with prey, by demonstrating that the impact of piscivorous birds on open air, non-netted fish farms can be reduced, or managed, by intentionally increasing turbidity levels in ponds. Affected most in this experiment were Little Egrets, *Egretta garzetta*, whose hunting efficiency, by prey-capture rates, were substantially reduced in manipulated turbid ponds.

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24 The effects of MdR Boat Central on resident and migratory bird species, particularly special-status species, are discussed, along with recommended mitigation measures, in a contemporary companion report entitled, Marina del Rey Boat Central: an evaluation of the potential impacts on marine bird populations (J.B.Froke, 29 Jul 2008). As such, birds are not treated to the same level as aquatic biota in the present report. The bird report also includes a more comprehensive list of fishes that are known to occur in the marina.

Even though construction-related turbidity would be temporary and dissipate (by settlement and dilution of sediments suspended particles) following containment or when work has been completed, it is possible that an unguarded episode would become a potentially significant source of marine contamination. However, the natural response of birds affected by unfavorably turbid conditions in Basin H would be to relocate their fishing to an unaffected or permissably affected location. Provided the ready ability of the marine birds to leave behind affected waters in or near the construction zone, and the mitigating effect of deployed turbidity curtains and sediment booms, the potential and temporary impact on birds, in the short-term, would be less than significant.

While *short-term*, temporary effects on birds could potentially pose an impact on the project, but at a less than significant level, no l*ong-term* effects on local birds, as could follow construction into operations, have been identified. This conclusion is supported with evidence in the project bird report (Froke 2008).

3.2.3 Effect of Turbidity on Mammals

In addition to marina birds, fishes and invertebrates that are discussed elsewhere, research evidence demonstrates that the presence of turbid waters can adversely affect *marine mammals*,[25] particularly pinnipeds. Scientific data from the Wadden Sea (Germany) show how Harbor Seals (*Phoca vitulina*; SEEHUNDE), which also are native to California coastal waters and MdR, may dramatically, if only temporarily, lose their

25 Modern marine mammals include the Cetaceans (whales, dolphins, and porpoises), Sirenians (dugongs and manatees), certain Carnivores (the Polar Bear and sea otters), and the Pinnipeds (true seals, eared seals, and walruses).

underwater visual acuity in response to even moderate levels of turbidity (7.4' to 6.0' per formazin nephelometric unit [FNU]) [26] (Weiffen *et al.* 2006).

Whereas, Harbor Seals regularly visit or occupy MdR, they would predictably avoid turbid waters created by construction activities at the project site, whether they were also deterred by working turbidity curtains. However curious, seals and other pinnipeds, as well as cetaceans, when present, would veer away from the site while construction is underway, chiefly due to possible turbidity, but also in response to spontaneous underwater noises generated by, e.g., demolition and construction equipment (see following discussion).

The effects of short-term exposure to turbidity by Harbor Seals and possibly other marine mammals, would fall underneath a significance threshold due to the animals' natural avoidance of places or circumstances characterized by high turbidity, and in favor of resting and foraging in or near waters with greater visibility. Short-term, temporary effects of turbidity on mammals is a potential impact of the project and requires mitigation. Long-term actions and effects on local marine mammals related to turbidity will not occur, i.e., post-construction because there are no actions related to the operation of the project that will cause a significant level of turbidity.

3.2.4 Effect of Turbidity on Fishes

Changes in turbidity can have both direct and indirect effects on fish (Meager 2008, for an overview). At very high levels, turbidity can directly affect fish growth and survival, for example, by interfering with gill function or the quality of substrata for egg laying (see review by Bash *et al.* 2001; also Fisken *et al.* 2002). By limiting the photic zone, turbidity can also reduce habitat quality, for example, by reducing macrophyte cover from predators (Goldsborough and Kemp 1998; Berger *et al.* 1999).

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26 Measurement of turbidity in FNUs employs a device that uses a light-emitting diode (LED) with a wavelength of 860±60 nanometers as a light source, and measure the scattered light at an angle of 90±2.5 degrees to the incident light beam. FNUs are more common in Europe, whereas in North America turbidity is measured in NTUs (Nephelometric Turbidity Units) which use a tungsten lamp with a color temperature of 2,200 to 3,000 K, and measure the scattered light at an angle of 90±30 degrees to the incident light beam.

Turbidity also limits fish vision, which can interfere with social behavior (Berg & Northcote 1985), foraging (Gregory & Northcote 1993; Vogel & Beauchamp 1999) and predator avoidance (Miner & Stein 1993 & 1996; Meager *et al.* 2006). This can have varying effects on fish growth and survival, dependent on ranging factors such as ambient light levels and depth; relative visual sensitivities of predators and prey; and non-visual sensory abilities.

Although the effects of turbidity on freshwater fishes are well known (see reviews by Henley *et al.* 2000; Bash *et al.* 2001), comparatively little is known of the effects on marine fishes. Turbidity levels in marine systems are generally not as extreme as fresh water, hence, behavioral effects are considered to be more important than physiological effects (e.g., Utne-Palm 1999).

The impact of changes in turbidity on fishes in marine systems is likely to depend on background turbidity levels. In systems with high levels of algal productivity, high inflow and terrestrial inputs (e.g. as in estuaries), turbidity levels are naturally high. In such areas, turbidity can have a positive effect in reducing predation from visual predators (e.g., Macia *et al.* 2003: Johnson & Hines 1999; Meager 2003; Minello *et al.* 1987;). Turbidity can also have a positive effect in areas with low background turbidity (e.g. fjords and oceanic areas), where small increases can enhance feeding of planktivores and larval fish by increasing prey contrast (Boehlert & Morgan 1985; Utne 1997; A similar visual effect is evident when we view a nearby object in thick fog). However, with larger and more conspicuous visual targets, for example, fish prey, conspecifics or predators, even small increases in turbidity rapidly limit visual range.

While short-term, temporary effects to fish is a potential impact of the project, no long-term effect on local fish, as following construction and during operations, has been identified. This is because identified impacts of potential significance are tied to turbidity increases during construction, whereas the circumstances will not occur following project completion.

3.3 BIOLOGICAL ISSUES RELATED TO SHADOWS & SHADING

Transient shadows will have a less-than-significant effect on the biological productivity of the marine community that occurs within approximately zero to 340 ft of the bulkhead facing Marina del Rey. The shadow influence will be transitional throughout the year in terms of the amount of time and area of marine resources that will be affected; and at any one phase, the area or volume of open water, bulkhead, riprap, and piling habitat will be minimal. Principal organisms associated with the fixed dimensional sites, e.g., faces of bulkheads, interstices of riprap, and undersides of pilings are naturally adapted to constant and/or moving shadows (remote structural cast; e.g., nearby or distant building) and shade (closer structural cast; e.g., docks and pilings). See Monro & Poore (2005) for an overview of marine plant adaptations to shading.

Shadow-cast is a short-term changing factor that is less significant ecologically than other cultural and natural factors that affect light fields and bioactive irradiance values in open water. For example, prevalent forces such as ultraviolet radiation, phytoplankton light attenuation, background turbidity and dissolved and suspended materials are long-term and predictably more influential in relation to benthic diversity and productivity (e.g., Kavanaugh 2005; Kirk 1994; Monro & Poore 2005; Salles *et al.*, 1996; Wahl & Hay 1995; Wahl *et al.*, 2004).

Shading from boat docks has been reported to affect growth of seagrasses in temperate, tropical, and subtropical regions of the world. In addition to *Zostera marina*, dense shading may lead to a decrease in shoot density and biomass species of *Thalassia testudinum, Halodule wrightii,* and *Posidonia australis* (Walker *et al.* 1989, Czerny & Dunton 1995, Loflin 1995, Burdick & Short 1999, Shafer 1999; also see Struck *et al.* 2004). In the instance of MdR and the Boat Central project, however, Eelgrass cannot be affected by shading effects from the new buildings or dock structures simply because the species does not occur within the project area.

The existing 1,690-sq ft dock and ramp system will be replaced by a 7,259-sq ft ramp and dock system. This will result in the shading of an additional 5,569 sq ft of open water habitat inside Basin H.

The effect of shadows on marina biological resources may range from nil to minimal. On the other hand, the effect of shading, as from increased dock coverage, would be incrementally higher than current conditions. However, neither the present nor projected shading has or would have an effect on native Seawrack, because the species is not present in Marina del Rey. The effect of shading on present organisms is and may become more positive because each has been attracted to or is adjusted to shade as an constant element of habitat.

3.4 EFFECT OF CONSTRUCTION NOISE ON ANIMALS

The matter of noise generation and sound travel in the ocean and coastal waters is a relatively new problem for scientists. From a zoological standpoint, a dominant focus of concern is on marine mammals and how they might be affected by underwater sounds and vibrations: Direct harm to individual animals exposed to prolonged high-level sounds, e.g., arguably from Navy Sonar, and interference with a group and population's natural behavior suggests the range of urgent problem areas.

The ±124 species of the world's marine mammals live in a medium that poorly transmits light but through which sound propagates very well, even over long distances. Wind, waves, earthquakes, precipitation, cracking ice, whale *songs*, and fish vocalizations are among many and diverse natural sounds in the ocean. In this medium, marine mammals heavily rely on sound to communicate, to exploit and investigate the environment, to find prey and to avoid obstacles (for an overview, see *Ocean Noise and Marine Mammals,* which is available from the National Academies Press, 500 Fifth Street NW, Washington, DC, 20001).

The present question is whether project-related underwater sounds, particularly from pile-driving, would significantly affect local marine mammals. The issue is closely associated with turbidity and its potential effects on mammals, as the actions that produce sounds are the same as would initiate new volumes of resuspended sediments.

Short-term, construction-generated sounds, e.g., spontaneous and acute noise (*versus* that which is continuous and diffuse), such as from pile-driving, would not impact or significantly affect underwater animals inside and near the project site. This is because the mechanical and percussive sounds produced by pile-driving develop at a lower frequency and duration. The immediate impact (of the first driven pile in the morning) on birds and mammals might be to startle them, but as the cyclical and repetitious sounds are linked to periods of also visible construction activity, the combined cues would send the animals out of the affected area. The short-range movement of seals would be temporary and short-term, limited specifically to (1) days of construction, and (2) the total construction period; and the effect would not be significant to the species.

In sum, the effect of underwater construction sounds on marine mammals - and birds and fishes by similar circumstances - would be transient and short-term during the construction period, and potential contrasts to ambient sound levels would neither harm nor significantly affect the animals. There would be no long-term impact to fish and wildlife from expected noise during both construction and operations of Boat Central; this because construction noise would be intermittent and at relatively low levels, and because the animals would readily move from noise-affected, bothersome sites during emanation. On the other hand, sounds from operations factors (boat motors) would be at even lower levels, and also consistent with ambient levels inside Basin H.

3.5 IMPACTS ON SOFT-BOTTOM BENTHIC HABITAT

Thirty, 16-in guide piles will replace 14 existing piles. The increase in the number of guide piles will result in a net decrease of approximately 31 sq ft of soft bottom benthic habitat. The soft bottom habitat will be replaced by hard substrate in the form of cement structures which, in turn, will support organisms that are adapted to hard substrate such as those currently found on the existing rock rip rap and piles in the project area. Conversion to an increased amount of hard-bottom habitat and the consequent transition of the original biota to adapted species in the modest area (≈31 sq ft) of the project site and Basin H would not be considered a significant biological effect of the project. An incremental change in the overall number of individuals of potentially affected benthic species, e.g., *Capitella capitata, Mediomastus ambiseta, Pseudopolydora paucibranchiata* and *Prionospio heterobranchiata* would not constitute an adverse effect on the native fauna or its segments, therein. As previously stated (p. 43), the project would create neither short-term nor long-term impacts on benthic infauna and macrofauna.

3.6 IMPACTS ON SENSITIVE MARINE RESOURCES

3.6.1 Eelgrass

In the absence of Eelgrass at the project site, there can be no short-or-long term impacts on the species in relation to water quality and habitat loss that may be linked to pile removal and installation, shadowing and shading, or other active element.

3.6.2 *Caulerpa taxifolia*

Caulerpa is not present inside the project area, a fact that precludes potential spread of this species during the construction or operation of the Boat Central facilities. Future invasion of the Marina by the exotic alga would not result from Boat Central operations; rather it would arrive by deliberate disposal or accidental passage via ships or boats, and therefore would be managed adaptively, principally by government managers and contractors.

3.6.3 Tidewater Goby

The Tidewater Goby does not occur inside Marina del Rey, and as a consequence, no impacts to this species will occur as a result of the project, either in the short- or long-term.

3.6.4 California Halibut

Although juvenile halibut are present inside Marina del Rey, presence of the species within Basin H is unlikely. Even so, if young halibut should appear inside the project area during pile installation, the animals closer to pile driving - as during the morning start-up of compressors and other power equipment - would be expected to swim to quieter areas outside the impact zone. Predictably, neither halibut mortality nor long-term impacts on the species from actions of the construction and/or operation of the dock facility would occur in detriment of the species. This is because of the species local absence - and more so its aversion to disturbance.

3.7 CUMULATIVE IMPACTS RELATED TO AN INCREASED NUMBER OF BOATS IN BASIN H

Normally, in cases where marina development would bring about an increased number of moored or docked boats in the harbor, incremental and cumulative impacts on water quality would naturally include contamination, e.g., from fuel and oil leaks, detergent spills, and paints and varnishes. However, as a stacked dry dock operation that has its maintenance and storage function take place entirely off-water, the Boat Central project would not cause an increase of contaminants in the marina. Conversely, the project will effectively reduce the potential and actual contamination risk by removing and storing boats out of water, and conducting the upkeep of the marine vessels in an environmentally closed landside environment. Hence, there would be very little risk or potential for the project to degrade water quality and habitat values, at any level of impact.

4.0 MITIGATION MEASURES & BEST MANAGEMENT PRACTICES

4.1 WATER QUALITY

Preceding statements regarding protection of biological values that would be associated with the project are based on two fundamental assumptions: (1) that the project would be fulfilled as described, or reasonably close to the project description relayed in this report; and (2) that project implementation at the construction level be made to adopt and carry-out the following two mitigation measures. Herewith, the purpose of mitigation would be to preserve (or improve) water quality, and to control and reduce the effects of potentially altered water quality during and after construction on sensitive biotic resources inside the marina.

4.1.1 Mitigation Measure #1

To prevent escaped particulates and debris -- floating or suspended -- from threatening or harming ecological communities and their biotic constituents, the project applicant should ensure readiness to contain and mitigate the effects of potentially elevated turbidity and debris. Specifically, This Mitigation Measure (#1) for water quality impacts instructs the adoption and implementation of several BMPs. Importantly, the following BMPs are not offered *in lieu* of MMs, rather they comprise them.

★ Hire only well-qualified marine contractors (demolition and construction) who are familiar and practiced with permit and protective issues that are associated with the elevation of turbidity and debris loads, and are professionally capable to employ the methods and materials necessary to contain contaminants within an aquatic work area, and to mitigate the potential escape of contamination to areas outside of project boundaries;

★ For landside construction, contractors should be prepared within 1-hour to distribute straw waddles (that are stored onsite) around the work area in the event of unexpected runoff and the threat of construction debris and contaminated flows entering storm drains or directly into Basin H;

- ★ Contractors shall ensure the containment and disposal of debris and trash using suitable covered trash containers placed securely on land and the work barge at the end of each construction day;

- ★ Contractors shall prohibit and preclude the discharge of any hazardous materials into Marina del Rey waters; and,

- ★ Where feasible and as an ongoing practice, contractors will deploy adequate silt curtains, collars and booms around the work barge and pile removal and emplacement operations, to minimize the spread of turbid waters, sediments and floating debris outside the project boundaries.

4.1.2 Mitigation Measure #2

To ensure that construction activities do not permanently or significantly impact the marine environment and biota, the second Mitigation Measure (#2) specifies application of the following BMPs and work precautions:

- ★ Placement and storage of construction materials, equipment, debris and waste products will be locations that are not subject to wave, wind, or rain erosion and runoff dispersion.

- ★ Any and all construction material shall be removed from the site within ten days of completion of construction and relocated to or disposed of at an appropriate offsite location.

- ★ Placement or storage of machinery and construction materials not essential to making project improvements shall be prohibited at all times in subtidal and intertidal zones.

- ★ Divers will be deployed to recover non-buoyant debris that has been discharged into marina waters as soon as possible after the loss.

★ Sand bags will be placed landside around drainage inlets to prevent runoff and sediment transport into the surrounding harbor.

★ At least one pre-construction meeting that involves at least the developer or applicant's representative, the project general contractor and the ecological monitor shall be conducted to review and agree to procedural guidelines and BMPs aimed at biological resource protection.

★ The applicant or contractor shall dispose of all demolition and construction debris that has resulted from project construction at an appropriate, offsite and secure location. If the offsite disposal site is located within the coastal zone, project managers will need to know that a coastal development permit may be required before the disposal can take place.

4.1.3 Eelgrass

Eelgrass does not occur in or near the project; therefore, mitigation measures are not required.

4.1.4 *Caulerpa taxifolia*

Caulerpa does not occur in or near the project area; therefore, no management measures are required.

4.1.5 Tidewater Goby

The Tidewater Goby does not occur in MdR; therefore, mitigation measures are not required.

4.1.6 California Halibut

Refer to the previous section on water quality to understand the potential impacts of diminished water quality on California Halibut. Implementing Mitigation Measure #1 would minimize potential impacts to California Halibut, in the event the species appears in the general vicinity of construction. No short-term or long-term impacts to halibut resources will occur as the result of this project.

4.2 SHADOW & SHADE ISSUES

Any realistic effect of shadowing or shading on biological resources inside or near the project area would be insubstantial and not of significance; thusly, mitigation measures would not be required. There would be no short-term or long-term effects from modified shade and shadowing created by the project, either during or after construction.

5.0 MISCELLANEOUS MATTERS

5.1 RIPARIAN HABITAT -- Riparian habitat does not occur inside or near to MdR, and no riparian resources would be affected by the Boat Central project.

5.2 WETLAND HABITAT -- Wetlands do not occur inside MdR, and no wetland resources, including the Ballona wetlands reserve, which is located approximately 1,000 ft across Fiji Road, or the closest wetlands habitat that is 2,500 ft from Fiji Way, would be affected by the Boat Central project.

5.3 GOVERNMENTAL INTERFERENCE -- The Boat Central project would not interfere with an adopted local, state, or federal regulatory action or permits, such as a county Development Agreement, Natural Community Conservation Plan or ESA § 10 permit, of which none are in place.

5.4 CLEAN WATER ACT -- The placement of piles into the marina bottom would represent a "fill of coastal waters," and therefore require authorization per the Clean Water Act. A section 404 permit will be obtained from the US Army Corps of Engineers, and that will address biological matters of the fill.

5.5 CALIFORNIA COASTAL ACT of 1976

From the standpoint of biological resources, the Boat Central project, as discussed above, would be in conformance with the following sections of the CA Public Resources Code / California Coastal Act of 1976. To wit,

§30230

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economical significance. Use of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and education purposes.

§30231

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

6.0 SUMMARY & CONCLUSION

This study and the report that followed examined MdR Boat Central, a project that is proposed to redevelop and reuse marina parcels 52R and GG. Boat Central would incorporate marine construction on the waterside portion of the property, and immediately adjacent landside. In turn, this report has focused on principal ecological elements and relationships that the site shares with marine biota including vertebrates and invertebrates, and the vascular plants, grasses and major algae that may be found in project waters. This study has determined that neither the construction nor anticipated operations and use of MdR Boat Central -- when mitigated as proposed herein -- would neither adversely affect nor significantly impact the subject marine resources.

Saturday, 13 September 2008

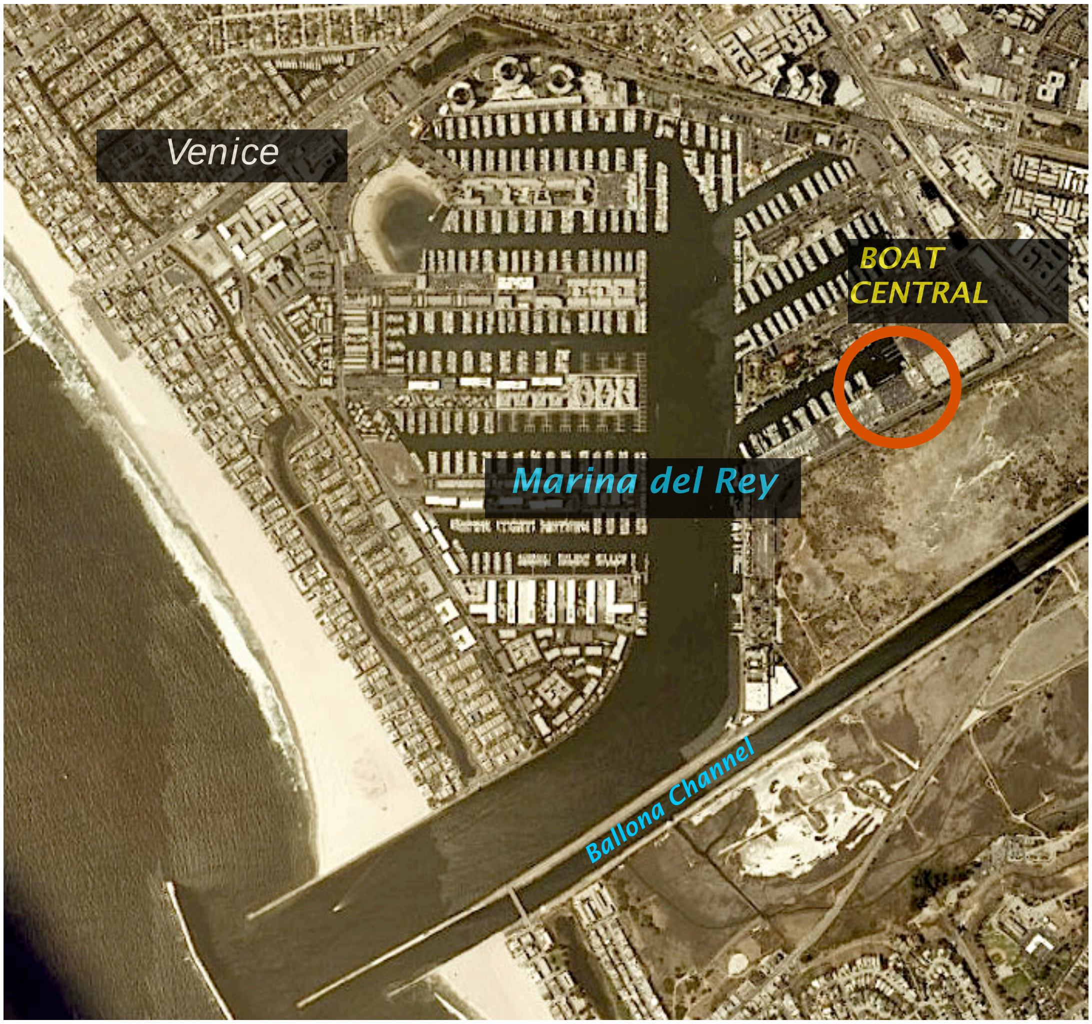


FIGURE 1. The Boat Central site and its vicinity including Marina del Rey, Los Angeles County, California.

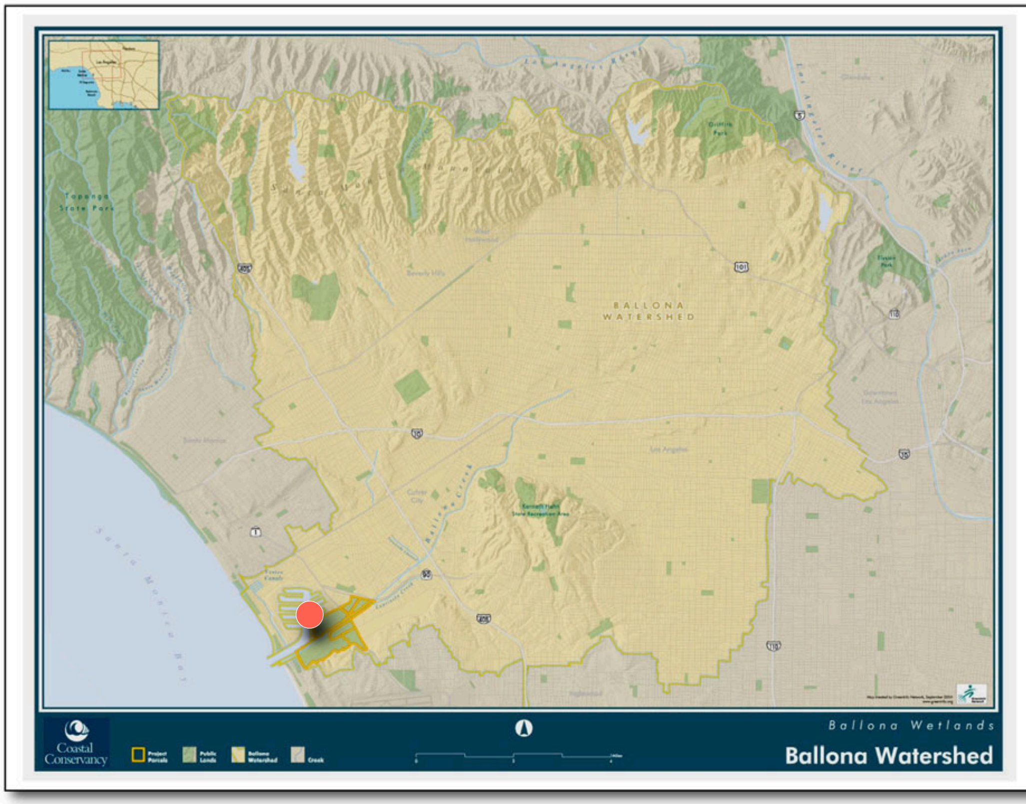


FIGURE 2. Ballona Watershed boundaries involving the "Greater Los Angeles Basin" and adjacent mountains and foothills: Flows enter Santa Monica Bay and the Pacific Ocean via the Ballona Creek/Channel, Los Angeles County, California. The red dot indicates the location of the Boat Central project.

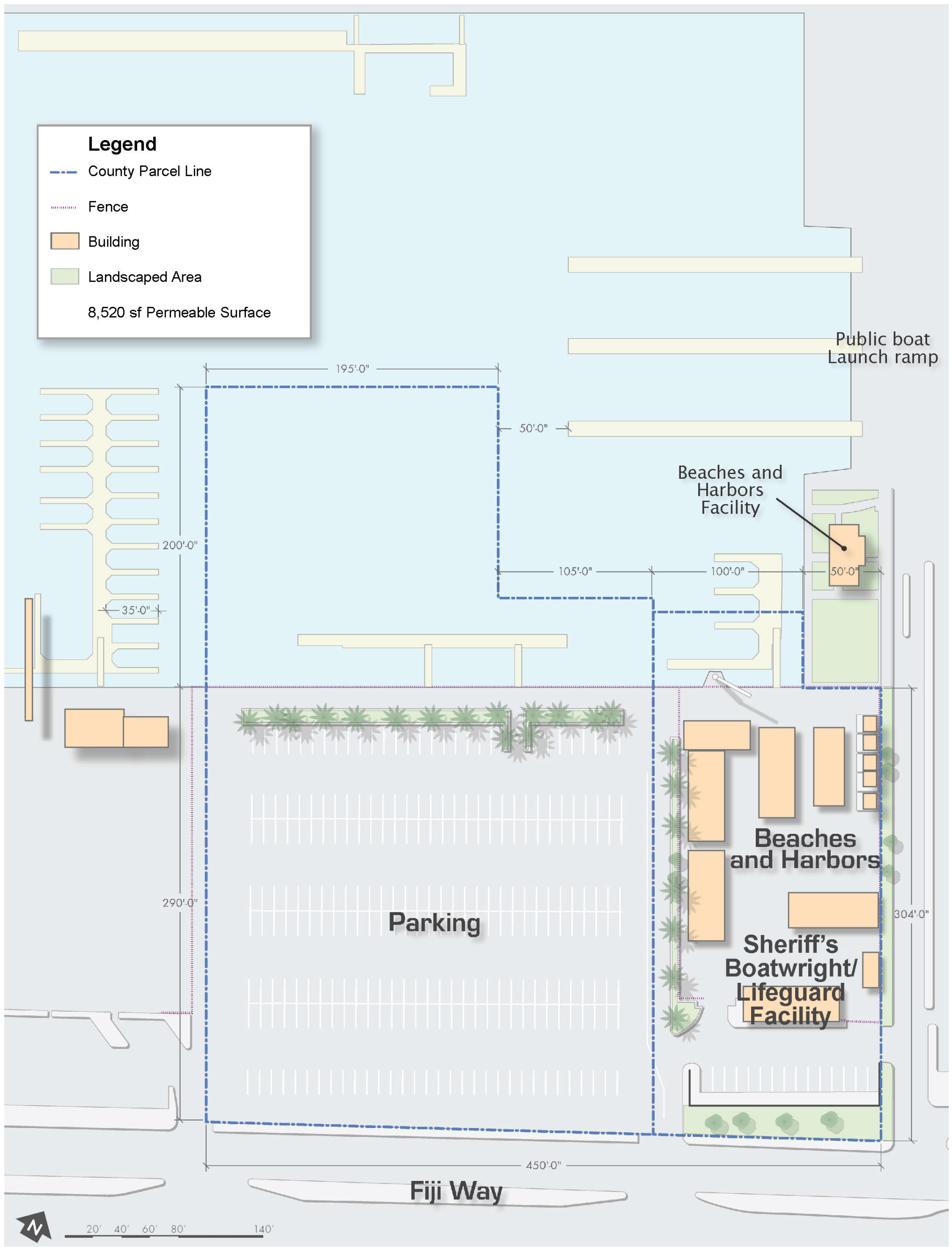


FIGURE 4 Existing site use and facility layout over MdR Parcels 52R & GG, Basin H, Marina del Rey, Los Angeles Co., California.

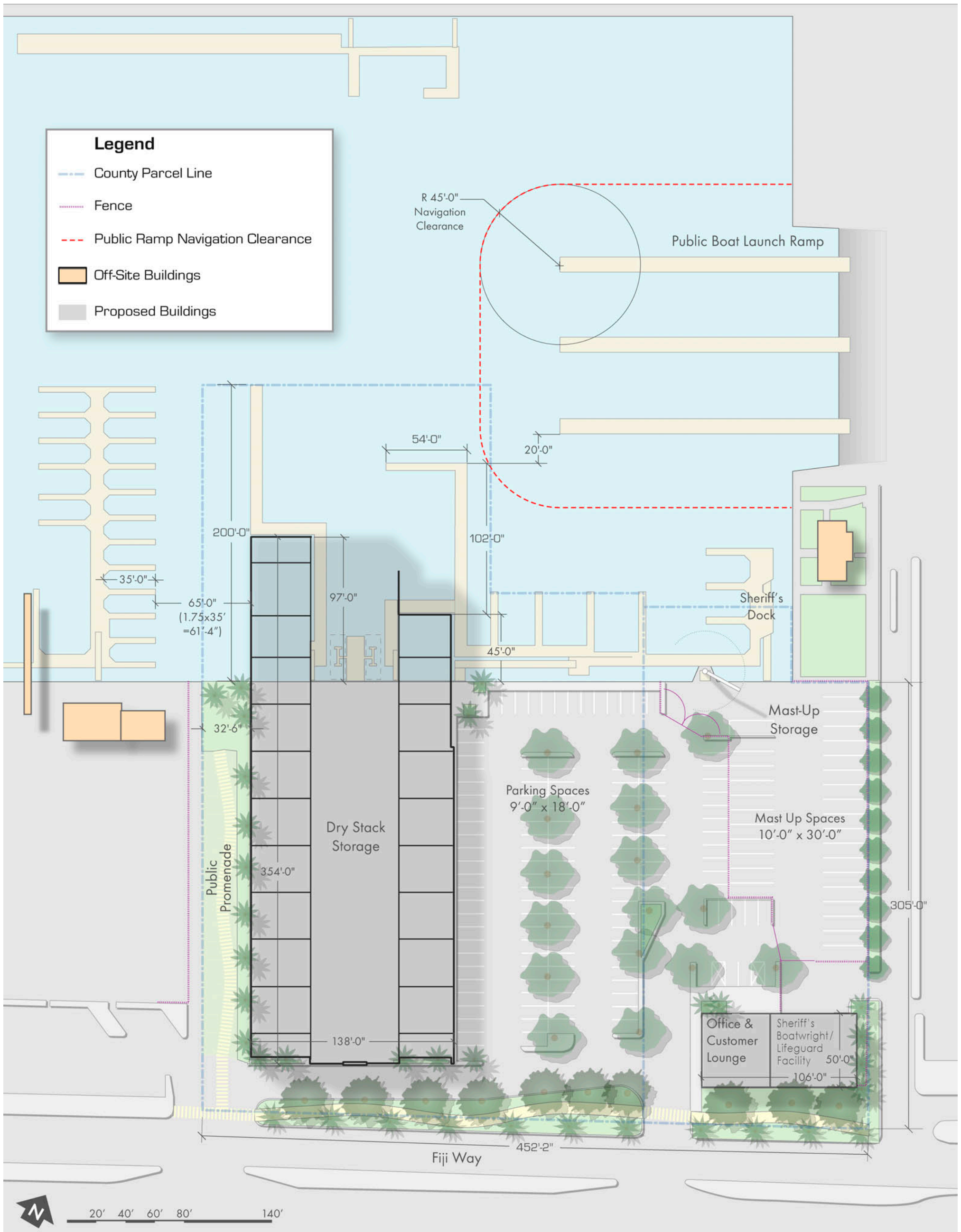
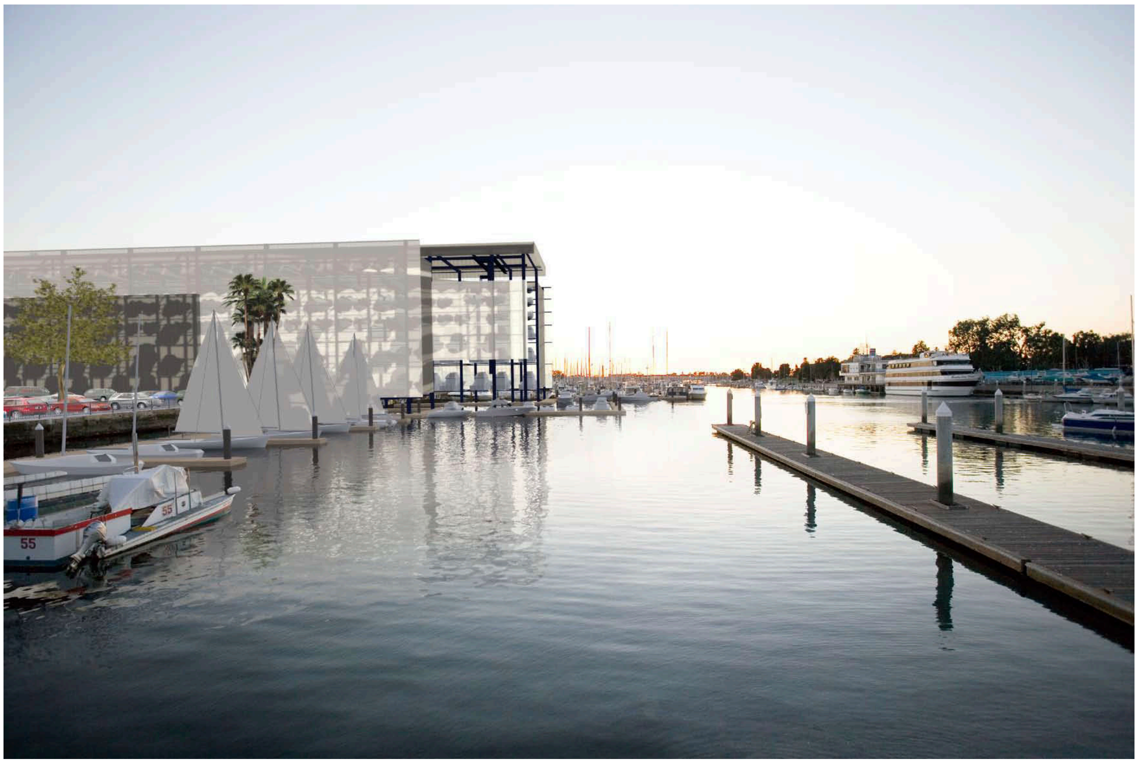
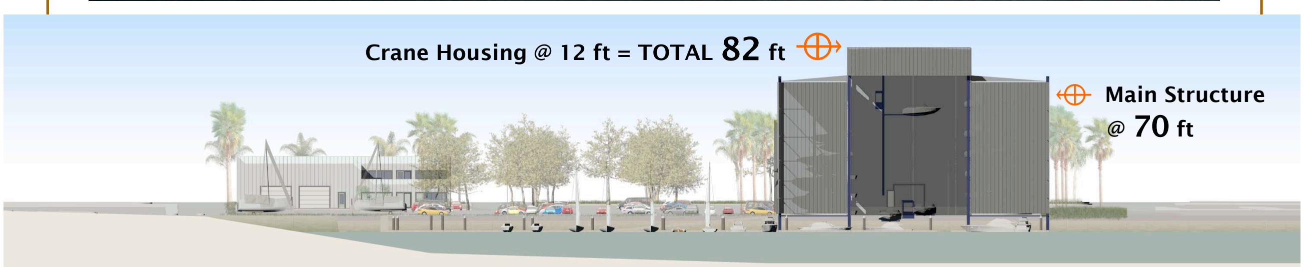


FIGURE 5 Proposed site use and facility layout over MdR Parcels 52R & GG, Basin H, Marina del Rey, Los Angeles Co., California.





NORTH ELEVATION

FIGURE 6 Two artist's renderings that show the Boat Central dry-stack building with translucent cladding, and outdoor docking facility, Marina del Rey, Los Angeles County, California.

FIGURE 7. Over-water shadow cast from the Boat Central dry-stack structure is maximizes during the Winter Solstice (21 December), Marina del Rey, Los Angeles County, California. Study by AC Martin Partners Inc., 2007.

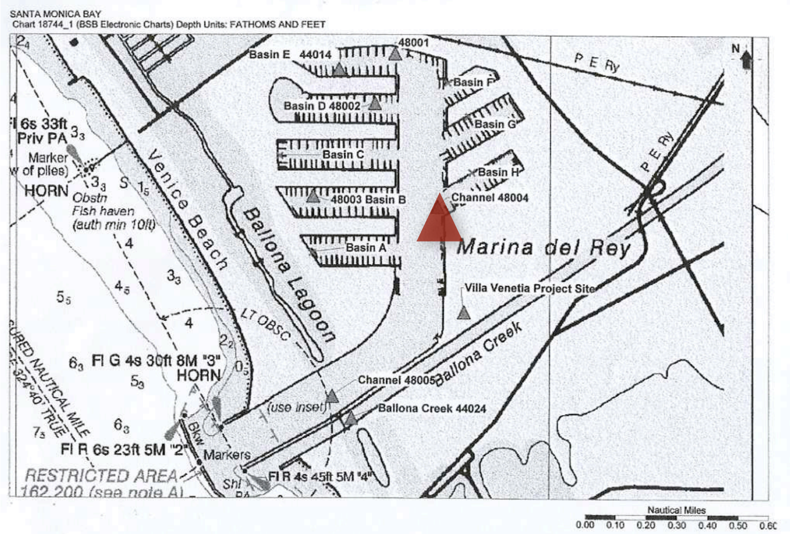


Figure 3b. Location of State Water Resources Control Board Sampling Stations in Marina del Rey

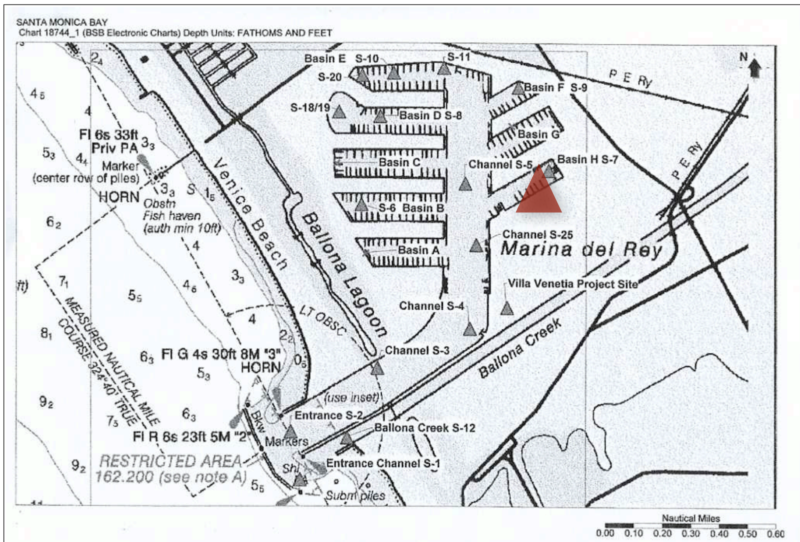


Figure 3a. Location of L.A. County-Funded Sampling Stations, 1976-1997. Source: ABC Laboratories

FIGURE 8 A & B. Locations of government funded marine assay sampling stations including the two most proximal to Parcels 52R & GG in Marina del Rey, California (A: LACo; B: SWRCB). Map source: ABC Laboratories, 1997.

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Marina del Rey 1962

EELGRASS AND INVASIVE ALGAE SURVEY AND IMPACT ASSESSMENT FOR THE PROPOSED BOAT CENTRAL WATER-SIDE FACILITIES MARINA DEL REY, LOS ANGELES, CALIFORNIA

October 17, 2006 SURVEY

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1.0 INTRODUCTION

1.1 PROJECT PURPOSE

Coastal Resources Management, Inc. (CRM) conducted a pre-construction marine biological resources survey in Marina del Rey, Los Angeles, California on October 17th, 2006. The purposes of the investigation were to determine if (1) eelgrass (*Zostera marina*) and invasive algae (*Caulerpa taxifolia*) were present in the vicinity of a proposed dry-boat storage facility and dock system and (2) assess the potential environmental effects of construction and long-term operation of the facilities on these two species or other sensitive marine species occurring within the project area.

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Project Background and Location

Marina del Rey is located in Santa Monica Bay, California, south of Venice and north of Playa del Rey (Figure 1). It is approximately 24 kilometers (14.9 mi) southwest of downtown Los Angeles. Constructed in 1960 from part of the Ballona Wetlands and the former Lake Los Angeles, Marina del Rey encompasses approximately 354 acres and has a capacity to accommodate more than 6,000 private watercraft. The marina is protected at its entrance by two jetties and a detached breakwall, and is adjacent to the downcoast Ballona Creek Flood Control Channel. Marina del Rey is divided into eight basins, A through H.

The Boat Central Project (The Project) will be located on the 4.25 acre leasehold (encompassing land & water areas) composed of Parcels 52 & GG along Fiji Way at the eastern end of Basin H, near the Harbor Patrol Facilities and the public launch ramp (Figures 2 and 3). The Project could accommodate up to a maximum of 388 boats and 24 boat trailers within the dry-stack building and outside parking for 30 mast-up sail boats and a public waterside hoist. Boat Central was designed to be sensitive to and enhance the marina environment in which it is set, as such The Project will use translucent polycarbonate as the primary architectural cladding. This material has several benefits, foremost is its ability to allow daylight to penetrate through the structure to the water's surface while providing a safe workplace with minimal electrical load. The boats will be delivered dockside upon reservation/request, fully fueled with the boaters option to order necessary supplies including food and drinks. A public boat washdown facility will also be incorporated on-site. The Project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two story visitor building has a gross floor area of 3080 square feet and will house the Project office. The Project will incorporate the existing Sheriff's boatwright shop in a new two story building (2850 square foot building footprint with a 500 square foot second floor mezzanine) with an adjacent 2,200 square foot fence yard. The Sheriff's boat dock will remain. The other existing public uses including the temporary office space and temporary parking for charter fishing tours, will

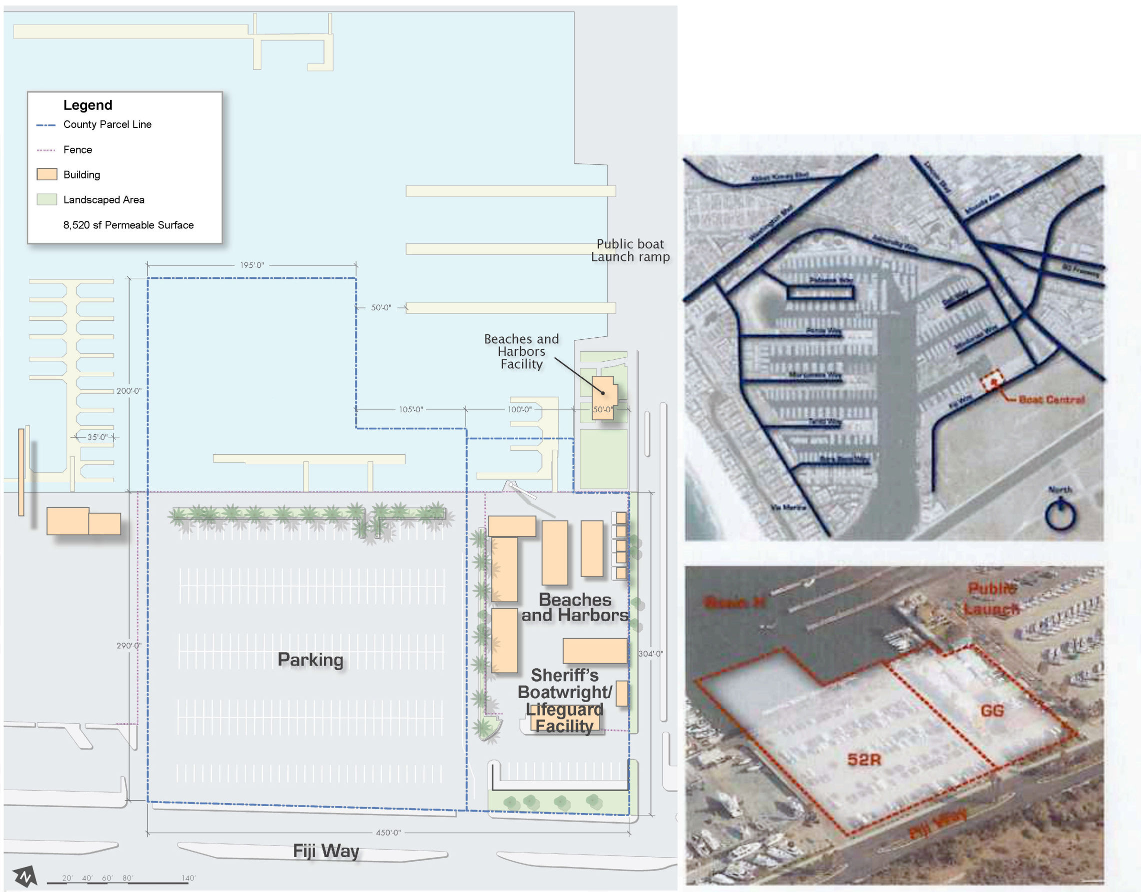

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Figure 1. Base Plan & Location Map

BOAT CENTRAL
ALMAR / PMD
MARINA DEL REY, CA
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Base map updated: 09.13.08

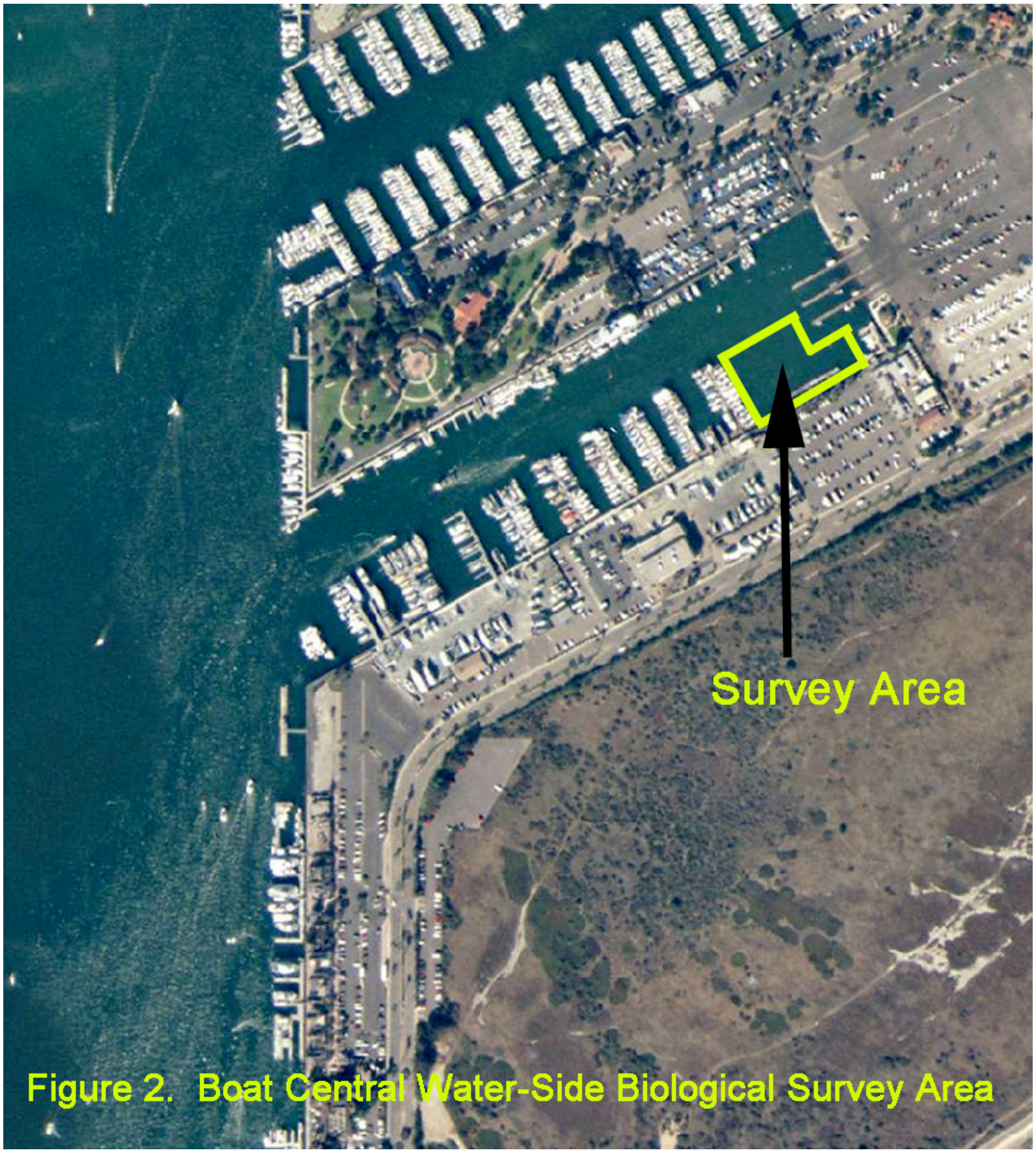

Figure 2. Boat Central Water-Side Biological Survey Area

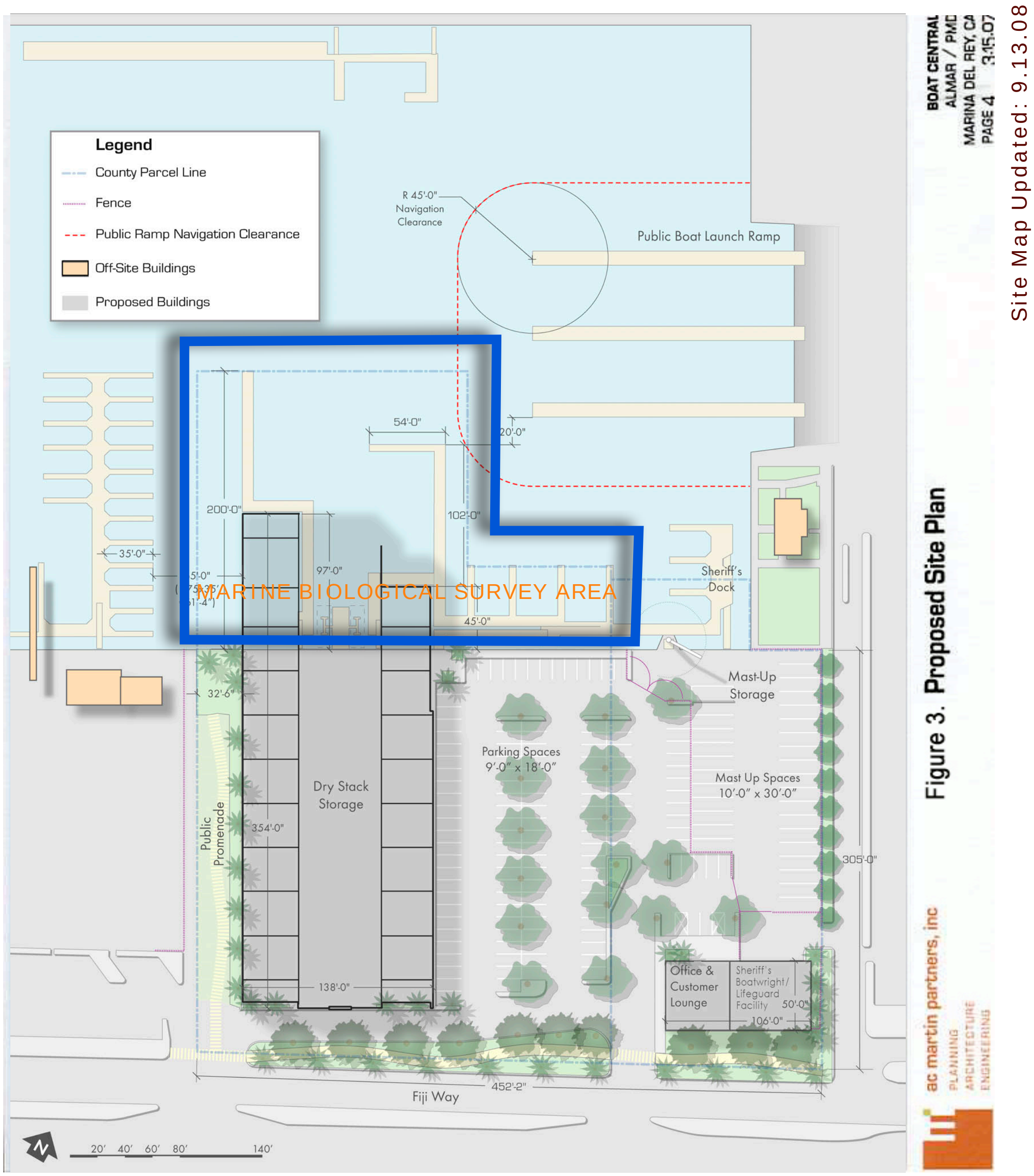

Figure 3. Proposed site layout and overlay showing biological study (dive) area.

be relocated by the Department of Beaches & Harbors. No wet slip spaces are proposed for permanent, individual dock slips, as the dock facilities will be reserved for the queuing (preparation of boats) of boats scheduled for use.

1.2 IMPORTANCE OF EELGRASS

Eelgrass (Figure 4) is a marine flowering plant that grows in soft sediments in coastal bays and estuaries, and occasionally offshore to depths of 50 feet (ft). Eelgrass canopy (consisting of shoots and leaves added vegetation and the vertical relief it provides enhances the abundance and the diversity approximately two to three ft long attracts many marine invertebrates and fishes and the of the marine life compared to areas where the sediments are barren. A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) live on eelgrass or within the soft sediments that cover the root and rhizome mass system. MBC Applied Environmental Sciences (1986) identified a total of 97 species of invertebrates associated with Sunset Bay, Huntington Harbour, and Mission Bay eelgrass blades and shoots. Another 216 taxa were found living among the roots and sediment. The vegetation also serves a nursery function for many juvenile fishes, including species of commercial and/or sports fish value (California halibut and barred sand bass). Eelgrass meadows are critical foraging centers for seabirds (such as the endangered California least tern) that seek out baitfish (i.e., juvenile topsmelt) attracted to the eelgrass cover. Lastly, eelgrass is an important contributor to the detrital (decaying organic) food web of bays as the decaying plant material is consumed by many benthic invertebrates (such as polychaete worms) and reduced to primary nutrients by bacteria.

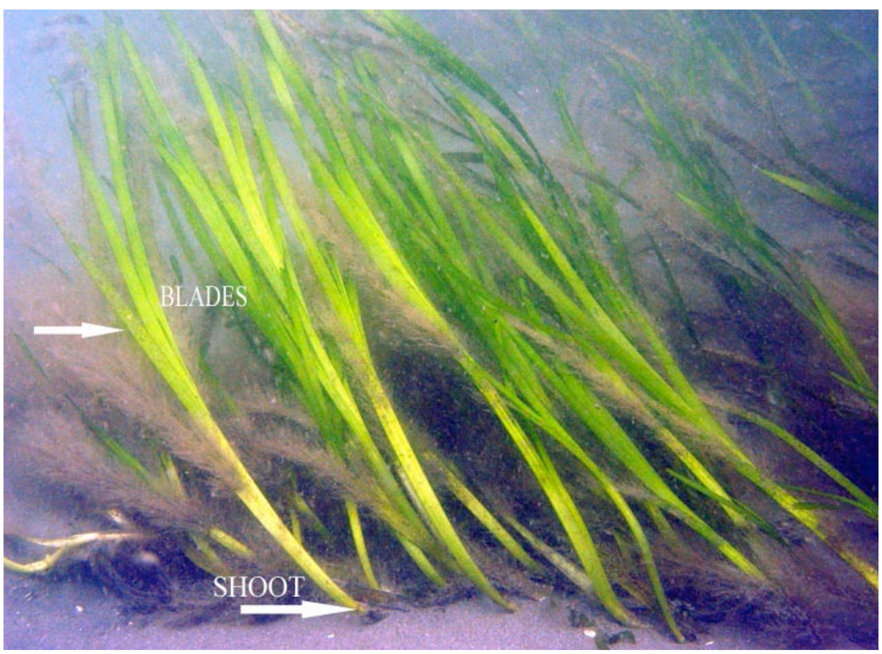

Figure 4. Eelgrass, *Zostera marina*. One "shoot" and the cluster of "blades" arising from the shoot is considered a "turion unit".

Because of the high ecological value of eelgrass meadows, it is important to document the location and amount of eelgrass in areas of proposed waterside developments and to mitigate any losses by avoiding or reducing, or compensating for any adverse effects on eelgrass habitats and communities.

1.4 IMPORTANCE OF INVASIVE ALGAE, *CAULERPA TAXIFOLIA*

The invasive algae Caulerpa taxifolia (Figure 5) has a potential to cause ecosystem-level impacts on California's bays and nearshore systems due to its extreme ability to out-compete other algae and seagrasses. *Caulerpa taxifolia* grows as a dense smothering blanket, covering and killing all native aquatic vegetation in its path when introduced in a non-native marine habitat. Fish, invertebrates, marine mammals, and sea birds that are dependent on native marine vegetation are displaced or die off from the areas where they once thrived. It is a tropical-subtropical species that is used in aquariums. It was introduced into southern California in 2000 (Agua Hedionda Lagoon) and (Huntington Harbour) by way of individuals likely dumping their aquaria waters into storm drains, or directly into the lagoons. While outbreaks have been contained, the Water Resources Board, through the National Marine Fisheries Service and the California Department of Fish and Game require that projects that have potential to spread this species through dredging, and bottom-disturbing activities conduct pre-construction surveys to determine if this species is presence using standard agency-approved protocols and by National Marine Fisheries Service/California Department of Fish and Game Certified Field Surveyors.

Figure 5. The invasive algae, *Caulerpa taxifolia*. Source: NOAA/NMFS

2.0 FIELD SURVEY METHODS

Eelgrass and *Caulerpa* surveys were conducted by CRM Senior Marine Biologist Rick Ware and Technician Lein Jenkins on October 17th, 2006 between 1030 and 1300 hrs. Surveys were conducted from a 14 foot inflatable vessel.

Underwater surveys were conducted within the Basin H project location using SCUBA. Surface support personnel were in communication with the diving-biologist using an Offshore Technology Systems, Inc. underwater communication system. Surveys were conducted in accordance with both the *Southern California Eelgrass Mitigation Policy* (National Marine Fisheries Service 1991 as amended) and the *Caulerpa Control Protocol* (National Marine Fisheries Service, Version 2.1, March 2006).

A total of twenty-eight 230-foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals. Bottom type, common marine life, and the presence or absence of eelgrass and invasive algae were recorded. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Santa Monica Pier tidal survey station.

Caulerpa Survey Protocols. Marina del Rey is considered a "non-infected" system and requires a "surveillance level" monitoring effort for the presence of *Caulerpa.* The following information is extracted from the National Marine Service Caulerpa *Control* Protocol in regards to the level of survey effort required.

1) *Surveillance Level* – General survey coverage providing a systematic sub-sampling of the entire APE during which at least 20% of the bottom is inspected and widespread occurrences of *Caulerpa* would be expected to be identified if present. Surveys may be accomplished using diver transects, remote cameras, and acoustic surveys with visual ground truthing. Other proposed methodologies may be approved on a case-by-case basis by NOAA Fisheries and CDFG.

A separate project report was prepared for this species and is included in Appendix A of this report.

3.0 SURVEY RESULTS

The area within the marine biological project limits encompassed a total of 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 4 ft (2 ft on each side of the center line the diver followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 43.6 % of the total bayfloor habitat within the project limits.

3.1 PHYSICAL ENVIRONMENT

The survey was conducted at depths between the top of the rip rap during a +3 ft high tide along the seawall and a maximum depth of -9 ft MLLW, 70 meters seaward from the bulkhead. Substrate types within the survey area included cement seawall, rock rip rap, and unconsolidated sand-to-silty sediments beyond the rip rap. Sediments contained a greater proportion of silts with increasing distance into the channel, near the launch ramp docks. Underwater visibility was low-to-moderate and averaged 0.6 meter (2 ft) on each side of the transect center line. Water temperature was 66 degrees Fahrenheit. Tidal currents were minimal during the survey.

3.2 EELGRASS

Eelgrass was not present in the project area. The only location where seagrass has been reported in past Marina del Rey surveys is in Basin D at “Baby Beach”, where ditchgrass (*Ruppia maritima*) is reported to occur.

To date, no records of eelgrass (*Zostera marina*), the common seagrass of southern California are known from Marina del Rey. However, ditchgrass (*Ruppia maritima*) occurs within Basin D (Mother's Beach), and has occurred irregularly since 1979 (Soule and Oguri 1993; Soule et al. 1997). This is an uncommon seagrass species found in quiet water habitats that is an important habitat for larval and adult fish. Coastal Resources Management, Inc conducted site-specific eelgrass surveys in Marine del Rey in May 2006 and December 2006 at 22 sites throughout the harbor for the County of Los Angeles Phase 1 Seawall Repair Project (CRM 2006a, 2007a), in Basin B (CRM 2006b), along the south jetty in front of the Villa Venetia Apartment Complex (CRM 2006c) and in front of Fisherman’s Village (CRM 2007b). No eelgrass was found at any of these locations.

3.3 *CAULERPA TAXIFOLIA*

No invasive algae was located in the project area, nor has it been observed within the Marina del Rey Harbor ecosystem to date. The total survey area (Area of Potential Effect, or the APE) was 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 24 ft (ft on each side of the center line that the biologists followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 4.3.5 % of the total APE bayfloor habitat within the project limits. A minimum of 20% coverage is required for non-infected systems such as Marina del Rey Harbor. The invasive algae reporting form, submitted to the National Marine Fisheries Service and the California Department of Fish and Game is provided in

Appendix A.

3.4 OTHER MARINE FLORA AND FAUNA OBSERVED DURING THE SURVEY

The diversity of marine life observed during the field survey was low. The brown algae *Sargassum muticum* was the most common algae observed growing on the rip rap against the bulkhead. Invertebrates and fishes observed within the project area included burrowing anemones (*Pachycerianthus fimbriatus*), predatory sea slugs (*Navanax inermis*), mussels (*Mytilus galloprovincialis*), unid perch (Embiocidae, unid.), and round sting ray (*Urolophus halleri*).

3.5 OTHER SENSITIVE MARINE SPECIES POTENTIALLY PRESENT IN THE PROECT AREA

Tidewater Goby

The Tidewater Goby (*Eucyclogobius newberryi*) is a Federally-listed endangered species that has been expatriated from many southern California creek mouths. It is currently found in shallow marine areas and lower reaches of streams between San Diego northward to Humboldt County waters where salinity is less than 10 ppt. The population of Tidewater Goby is depleted due to reduced or eliminated flows in the lower reaches of coastal streams, pollution, and the filling in, channelization, and other physical alterations of their habitats. The population disappeared from about 74 percent of the coastal lagoons from Morro Bay southward to San Diego (U.S. Fish and Wildlife 1994).

This species currently does not occur within Marina del Rey Harbor or the Ballona Channel.

California Halibut

Although it does not have a formal special status, the California halibut (*Paralichthys californicus*) is considered a sensitive species by resource agencies because of its commercial value and a continued region-wide reduction of its nursery habitat in bays and wetlands. California halibut spawn at sea and its larval stages are planktonic. After several months, larval fish settle to the bottom and migrate into shallow coastal waters including embayments such as Marina del Rey Harbor. Young-of-the-Year (YOTY) prefer shallow waters between about -1.5 feet and -3.5 feet MLLW, whereas juveniles prefer deeper channel bottoms to a maximum depth of approximately -15 feet MLLW. After spending nearly nine months in coastal embayments, juveniles move out into the open coastal environment. The species uses inshore waters of bays, harbors, and estuaries as a nursery habitat. California halibut frequent the entrance channel habitat more commonly than farther back in the channels or boat basins. Its potential to be present in the Basin H project area is low.

4.0 IMPACT ASSESSMENT

4.1 PROPOSED PROJECT ELEMENTS

The water-side portion of the Boat Central project includes the construction and operation of a variable-configured boat dock (Figure 3). The dock will be accessed via a pile-supported platform and an ADA accessible ramp to be jointly used by Boat Central customers as well as the Sheriff's Department employees. The system will include (1) a boat queuing basin and a dock system consisting of seven finger piers for tenants to use as temporary tie up when departing and returning to the facility. No wet slip spaces are proposed as the dock facilities will be reserved for the queuing of boats scheduled for use.

The approximate surface area of the existing dock and ramp at the project site is 1,690 sq ft. Fourteen, 16-inch diameter piles (19.5 sq ft of surface area) support the dock and ramp.

Based on preliminary dock surface area calculations made by CRM, the total surface area of the proposed dock queuing system is 7,259 sq ft sq ft. The surface area of the proposed thirty, 16-inch diameter piles is 50.7 sq ft.

4.2 PROPOSED CONSTRUCTION METHODS (Source: Bellingham Marine, Inc.)

Building Materials

The building materials associated in this project are associated with the new floating dock system and the limited new piles to be driven in place. The new floating docks system will consist of prefabricated, lightweight aggregate concrete modules. Expanded polystyrene flotation is completely encased in a reinforced concrete shell, which is impervious to marine borers. Flotation absorption is minimal (up to 3% by volume which meets ASTM C-272). Concrete encasement on all six sides provides maximum strength and protection. Galvanized steel rods pass through conduits cast into the Unifloat(R) units and are fitted with nuts and special washers on each end. Galvanized steel frames are included to provide high-strength connections at the critical joints between finger piers and mainwalks. Galvanized iron cleats, fiberglass locker boxes, marine-grade Medium Density Polymer (MDPE) used on triangle frames, stainless steel substations, Ultra High Molecular Weight (UHMW) pads, and marine-grade vinyl fendering are included in the project. No creosote treated wood products are included in this new concrete dock.

Construction Details

The proposed marina project includes installation of the new concrete floating dock system, pile-driving and installation of new utilities. If applicable, demolition will occur be removing sections of existing docks and removing them by crane onto trucks. These existing floating docks will be disposed off-site at a legal disposal site such as Puente Hills Landfill in Whittier, CA. New floating dock sections will be delivered by truck and offloaded by crane into the water. These new floating docks will be towed with a small skiff to their final location. Approximately 30 pre-stressed concrete 16 inch square concrete pilings (will emplaced to support the dock system. New piles will be driven through openings in the floating docks to anchor them sufficiently. Pile driving will be accomplished with a crane located on a floating barge. The methodology of pile installation is a combination of jetting and driving. Piles will be jetted in place, through the floating dock system, and the last 5 of each guide pile will be driven to their final tip elevation. The methodology of pile removal will be accomplished with the crane and floating barge as well. In all pile-driving locations, turbidity screens/siltation curtains will be utilized around each piling to be driven or removed to assist in isolating the work area from potential water quality impacts related to construction.

Project Timing

Dock installation and pile-driving should take no more than 3 months, and would likely be conducted in the fall/winter season.

4.3 IMPACTS ON WATER QUALITY

Pile installation using pile driving and hydraulic jetting methods will result in a temporary increase of suspended sediments, a temporary reduction in submarine light levels, and a potential to decrease dissolved oxygen levels in areas where the sediments are anoxic. Turbidity may also increase if prop wash stirs up bottom sediments or if vessels deploy and retrieve anchors. These impacts will result in a short-term impact on water quality that can be mitigated by employing Best Management Practices (BMPs) to reduce the potential for the spread of turbid waters outside the construction zone. See Section 5 for Best Management Practices.

4.4 SHADING ISSUES

The existing 1,690 sq ft dock and ramp system will be replaced by a 7,259 sq ft ramp and dock system. This will result in the shading of an additional 5,569 sq ft of open water habitat in Basin H.

4.5 IMPACTS ON SOFT BOTTOM BENTHIC HABITAT

Thirty, 16-inch guide piles will replace 14 existing piles. The increase in the number of guide piles will result in a net decrease of 31.2 sq ft of soft bottom benthic habitat. The soft bottom habitat will be replaced by hard substrate in the form of cement structure that will support hard-substrate associated organisms such as those currently found on the rock rip rap and piles in the project area.

4.6 IMPACTS ON SENSITIVE MARINE RESOURCES

Eelgrass

There is no eelgrass at the project site, therefore there will be no short-or-long term impacts on eelgrass related to water quality, loss of habitat through pile installation/removal, or shading.

Caulerpa taxifolia

No *Caulerpa* is present within the project area which precludes the potential spread of this species during construction and/or the operation of the facilities.

Tide Water Goby

Tide water gobies are not known from Marina del Rey; no impacts will occur on this species.

California Halibut

Juvenile halibut are known to occur within Marina del Rey, although their occurrence within Basin H are unlikely. However, if they should be present in the project area during pile installation, any juveniles in the immediate area of pile driving activity will swim to areas outside the immediate impacted zone. No mortality or long-term impacts as a result of construction and/or operation of the dock facility are anticipated on this species.

5.0 MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

5.1 WATER QUALITY

During construction, the following mitigation measures and Best Management Practices (BMPs) are recommended to prevent water quality degradation and to reduce potential adverse impacts on marine resources. For landside construction activities, straw waddles should be placed around the work area to prevent construction debris and runoff from entering storm drains or into the marina.

- All debris and trash shall be disposed in suitable trash containers on land or on the work barge at the end of each construction day;
- Discharge of any hazardous materials into Marina del Rey will be prohibited; and
- Where feasible, silt curtains should be deployed around the work barge and around the pile removal and emplacement operations to minimize the spread of turbid waters outside the project area.

5.2 EELGRASS

Eelgrass does not occur within the project area. No BMPs or mitigation measures required.

5.3 *CAULERPA TAXIFOLIA*

Caulerpa does not occur within the project area. No BMPs or mitigation measures required.

5.4 TIDEWATER GOBY

No mitigation required.

5.5 CALIFORNIA HALIBUT

To minimize impacts on California halibut, refer to Section 5.1 (Water Quality). These Best Management Practices will minimize any potential impacts on California halibut should halibut be present in the general vicinity of construction.

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APPENDIX A
CAULERPA TAXIFOLIA REPORTING FORM

Caulerpa taxifolia Survey Reporting Form

Boat Central Waterside Facilities, Parcel 52B/GG
Basin H, Marina del Rey Boat Harbor
Los Angeles County, California
Survey Date: October 17th, 2006

Prepared by:
Coastal Resources Management, Inc.
PMB 327, 3334 East Coast Highway
Corona del Mar, CA 92625
Contact: Rick Ware, Senior Marine Biologist
(949) 412-9446

Prepared for:

Contact: Roger Van Wert
Allen Matkins Attorneys at Law
515 S. Figueroa St 7th Floor
Los Angeles, CA 90071

This form is required to be submitted for any surveys conducted for the invasive exotic alga *Caulerpa taxifolia* that are required to be conducted under federal or state permits and authorizations issued by the U.S. Army Corps of Engineers or Regional Water Quality Control Boards (Regions 8 & 9). The form has been designed to assist in controlling the costs of reporting while ensuring that the required information necessary to identify and control any potential impacts of the authorized actions on the spread of *Caulerpa*. Surveys required to be conducted for this species are subject to modification through publication of revisions to the *Caulerpa* survey policy. It is incumbent upon the authorized permittee to ensure that survey work is following the latest protocols. For further information on these protocols, please contact: Robert Hoffman, National Marine Fisheries Service (NOAA Fisheries), (562) 980-4043, or William Paznokas, California Department of Fish & Game, (858) 467-4218).

Report Date:	October 27, 2006
Name of bay, estuary, lagoon, or harbor:	Marina Del Rey, Los Angeles, California. See Figure 1.
Specific Location Name:	South Bulkhead, Parcels 52B and GG, Basin H
Site Coordinates: (UTM, Lat./Long., datum, accuracy level, and an electronic survey area map or hard copy of the map **must** be included).	Center of Proposed Waterside Development: 33.97684^0 N; 118.44204^0 W Accuracy: 1 m, WGS 84 See Figure 2 and 3 for the project location
Survey Contact: (name, phone, e-mail)	Rick Ware, Senior Marine Biologist, Coastal Resources Management, Inc. (949) 412-9446, rware.crm@earthlink.net Robert Van Wert Project Manager rvanwert@allenmatkins.com
Personnel Conducting Survey (if other than above): name, phone, email	Mr. Rick Ware and Mr. Lein Jenkins, of Coastal Resources Management, Inc.
Permit Reference: (ACOE Permit No., RWQCB Order or Cert. No.)	RWQCB File No. Pending CCC File No. Pending Army Corps File No. Pending
Is this the first or second	First survey

survey for this project?	
Was *Caulerpa* Detected?: (if *Caulerpa* is found, please immediately contact NOAA Fisheries or CDFG personnel identified above)	___________________Yes, Caulerpa was found at this site and ____________________has been contacted on __________ date. _________X X__________**No, Caulerpa was not found at this site**.

Description of Permitted Work: (describe briefly the work to be conducted at the site under the permits identified above)	The Boat Central Project is located on Parcels 52R and GG at the eastern end of Basin H, near the Harbor Patrol Facilities and the public launch ramp (Figure 2 and 3). Landside, the facility will accommodate 345 boats in dry-stack, with 30 mast-up storage spaces. The existing Sheriff's dock capacity will remain the same, with an eight- boat capacity. Waterside queuing will consist of a mix of sixty-five, 24-40 ft vessels at maximum capacity. Thirty, 16-inch diameter guide piles will be installed to support a 7,259 sq ft dock system for the temporary tie-up of vessels launched from the dry storage facility.	
Description of Site:	*Depth range:*	+3 ft to -9 ft MLLW.

(describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).	*Substrate type:*	Rip rap extended between the intertidal zone to a depth of approximately -6 ft MLLW: sand and silty sediments were present between depth of -6 and -9 ft MLLW.
	Temperature:	66 degrees F
	Salinity:	25-35 ppt
	Dominant flora:	The brown algae *Sargassum muticum*
Site Description (continued)	*Dominant fauna:*	Invertebrates and fishes observed by biologists included burrowing anemones (*Pachycerianthus fimbriatus*), predatory sea slugs (*Navanax inermis*), mussels (*Mytilus galloprovincialis*), unid perch (Embiocidae, unid.), and round sting ray (*Urolophus halleri*).
	Exotic species encountered (including any other Caulerpa species):	None
	Other site description notes:	None
Description of Survey Effort:	*Survey date and time period:*	October 17th, 2006, 1030-1300 hrs

Description of Survey Effort: (continued) please describe the surveys conducted including type of survey (SCUBA, remote video, etc.) and survey methods employed, date of work, and survey density (estimated percentage of the bottom actually viewed.	*Horizontal visibility in water:*	0.6 m meter (2 ft) on each side of centerline of each transect; total viewing area along each transect: 1.3 meters (4 ft) on all transects
	Survey type and methods:	The survey was conducted on 17 October 2006 between 1030 and 1300 hrs. A total of twenty-eight 230 foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals. Bottom type, common marine life, and the presence or absence of eelgrass and invasive algae were recorded. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Santa Monica Pier tidal survey station. The total survey area (Area of Potential Effect, or the APE) was 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 4 ft (2 ft on each side of the center line that the biologists followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 43.5 % of the total APE bayfloor habitat within the project limits. This survey was a surveillance level survey (minimum of 20% bottom cover)
Describe any limitations encountered during the survey efforts.	*Survey personnel:*	Rick Ware and Lein Jenkins of Coastal Resources Management, Inc.
	Survey density:	A total of twenty-eight 230 foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals.
	Survey limitations:	No survey limitations

Other Information: (use this space to provide additional information or references to attached maps, reports, etc.)	See attached project maps **Figure 1**. Project location, Marina del Rey Harbor **Figure 2**. Marine Biological Survey Area **Figure 3**. Proposed Project Plans

Caulerpa Survey Reporting Form (version 1.2, 10/31/04)

Appendix E5
Three memos prepared by Mr. Robert A. Hamilton, dated August 22, 2007

Assessment of Proposed Boat Central and Fisherman's Village Projects on Herons and Egrets in Marina del Rey

Draft Peer Review of Dr. Jeffrey Froke's Heron Studies at Marina del Rey;
Conceptual Great Blue Heron Management Strategy

Great Blue Heron Nesting Trees as Environmentally Sensitive Habitat Areas

Robert A. Hamilton

August 22, 2007

Memorandum

To: Andi Culbertson

Subject: Assessment of Proposed Boat Central and Fisherman's Village Projects on Herons and Egrets in Marina del Rey

The County of Los Angeles is considering a project known as "Boat Central" at Parcels 52/GG on Fiji Way as well as renovations to the existing Fisherman's Village, which is located about a quarter-mile west-southwest of the Boat Central site, also on Fiji Way (see Figure 1). The Boat Central project involves constructing a 70-foot-tall "dry stack" boatyard in an area currently used for parking. The Fisherman's Village project involves constructing ten buildings up to 40 feet tall, providing above- and below-ground parking, and renovating existing boat docks. At your request, I have evaluated the potential effects of constructing buildings of these heights on the ability of herons and egrets to move around Marina del Rey, with particular reference to movement between potential heron/egret nesting habitat at Burton Chase Park, located approximately 0.1 mile northwest and north of the proposed project sites, and potential foraging habitats at the Ballona Freshwater Reserve, located south and east of the proposed project sites (see Figure 1).

Figure 1. The proposed location of Boat Central ( ) is approximately 0.5 mile northeast of the area used for nesting by Great Blue Herons in recent years ( ) and approximately 0.1 mile southeast of Burton Chase Park. Fisherman's Village ( ) is an existing commercial center; palm trees at its southern end have been used for nesting by Great Blue Herons. The Ballona Freshwater Reserve is located south of the Boat Central site and east of Fisherman's Village.

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Herons and egrets are highly mobile birds capable of flying around buildings to move between nesting and foraging areas. As such, the proposed construction of the Boat Central facility and the proposed redevelopment of Fisherman's Village would likely have only minimal effects on the ability of these birds to move around Marina del Rey and surrounding areas. Ample room exists between the Boat Central and Fisherman's Village sites to allow herons and egrets to fly unmolested between Burton Chase Park and the Ballona Freshwater Reserve. Since the Boat Central building would extend out over the water, it appears likely that there would be some loss of potential heron/egret foraging habitat that now exists along the edge of Parcel 52, although such loss would be negligible compared with the area of potential foraging habitat available to herons and egrets in and around Marina del Rey. It is my opinion that implementation of these projects would have very little effect, if any, on the status of herons and egrets at Marina del Rey.

If you have any questions or comments regarding this memorandum, please call me at 562-477-2181 or send e-mail to robb@rahamilton.com.

Robert A. Hamilton

August 22, 2007

Memorandum

To: Andi Culbertson

Subject: Draft Peer Review of Dr. Jeffrey Froke's Heron Studies at Marina del Rey; Conceptual Great Blue Heron Management Strategy

Breeding populations of Great Blue Herons (*Ardea herodius*) are generally increasing along the coast of southern California, a phenomenon related to the birds' more frequent use of exotic landscape trees for nesting and roosting. In recent years, colonization of such trees on the south side of Marina del Rey has created an unresolved conflict between nesting Great Blue Herons and local citizens who expect their living environment to be free from large birds depositing substantial quantities of guano on people, buildings, sidewalks, parking lots, and cars. Dr. Jeffrey Froke has been monitoring heron populations at Marina del Rey since July 2005 in order to learn how many birds are nesting in the area, what trees they are using, where they are foraging, and other relevant issues. At your request, we have read Dr. Froke's *Marina del Rey Heronry Report for 2005-2006* and his nesting updates through 21 August 2007. This draft memorandum provides an independent, third-party review of these efforts to characterize the heron colonies at Marina del Rey. We also present here a conceptual heron management strategy for the local area, which has the goal of resolving the ongoing conflict between herons and humans to the benefit of both. Our qualifications to provide these services are provided in the attached Curricula Vitae.

We found Dr. Froke's reports to be well organized, in accordance with accepted scientific methods, and very thorough. As reviewed by Dr. Froke, during the past three years Great Blue Herons in Marina del Rey have nested mainly on the south side, along Fiji Way, but also at Mariner's Village on the north side of the marina. He has observed that the Great Blues have been nesting in trees ranging from approximately 25 to 60 feet tall—mainly Monterey Cypresses (*Cupressus macrocarpa*), with some use of Mexican Fan Palms (*Washingtonia robusta*) and Monterey Pines (*Pinus radiata*). One Monterey Cypress along Fiji Way, near the Coast Guard station, has died as the result of deposition of guano and another tree in the same small stand is nearly dead. In addition to killing off the birds' nesting trees, guano deposition carries potential health risks for humans since herons are among the most common carriers of avian chlamydiosis, an airborne bacterium.

During July through October 2005 and throughout 2006, Dr. Froke made incidental observations of herons and egrets foraging in the local area. He noted that Great Blue Herons more frequently foraged in the uplands and seasonally dry fields of Ballona Wetlands than did either Black-crowned Night-Herons or Snowy Egrets. Great Blue Herons foraged throughout the lamp-lit marina waterfront from late evening through early

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morning, using docks, ramps, and boats (dive and bait platforms) as perches from which to stalk and attack prey. He did not observe Great Blue Herons foraging at the Oxford Flood Control Basin ("Oxford Slough") during July through October 2005 and only infrequently during 2006. The majority of foraging observations, and of observations made while specifically searching for foraging herons, were from within the marina dock environment and the Ballona Lagoon/Grand Canal areas.

We are aware of complaints made by some residents of the local area against Dr. Froke, including that in 2006 he overlooked a heron nest at Villa Venetia. In regard to this, Page 11.2 of his 2005-2006 report states:

> Lastly, a pair of Great Blue Herons nested in a fan palm (now palm no. 2 [P2]) that is located inside the Villa Venetia pool yard (left and below pool in Figure 9). The fate of the hatchling(s) from palm no. 1 was not observed or determined.

In a follow-up e-mail, Dr. Froke clarified that the above reference to "palm no. 1" was a typographical error, and that he meant "palm no. 2." We inquired with Dr. Froke about how he came to miss this nest, which was in a palm tree in the northwestern corner of the pool yard at Villa Venetia. Dr. Froke explained that the pool area is kept clear of guano (which normally gives away the locations of nests) and that the nest and its birds were very difficult to see from the ground (although they were obvious to residents living on the upper floors of Villa Venetia). While missing this nest was regrettable, the explanation for his error is reasonable, and one would be hard-pressed to imagine a possible motivation for Dr. Froke intentionally failing to report on a nest that would have to be well-known to many residents of Villa Venetia. We note also that Dr. Froke has reported in 2007 on an active nest that is well-concealed in a different palm tree in the same pool area. With this error corrected in the 2005-2006 report, baseline data on Great Blue Heron nesting activities in the local area from late July to the present time appears to be complete.

We also inquired into further accusations that Dr. Froke overlooked a second nest in 2005. Dr. Froke responded that he believes the nest in question to have been in a palm tree at the UCLA Marina Aquatic Center, which is outside of the area he was surveying. He further explained that he did not include this nest in his report for that year because he believed that the birds had finished nesting by the time he started his surveys in late July 2005. We regard these as reasonable responses.

To summarize, we are satisfied that the tables and figures in the *Marina del Rey Heronry Report for 2005-2006*, and the periodic monitoring reports through 21 August 2007, clearly and accurately depict the trees in the local area that have been occupied by herons from late July 2005 to mid-August 2007.

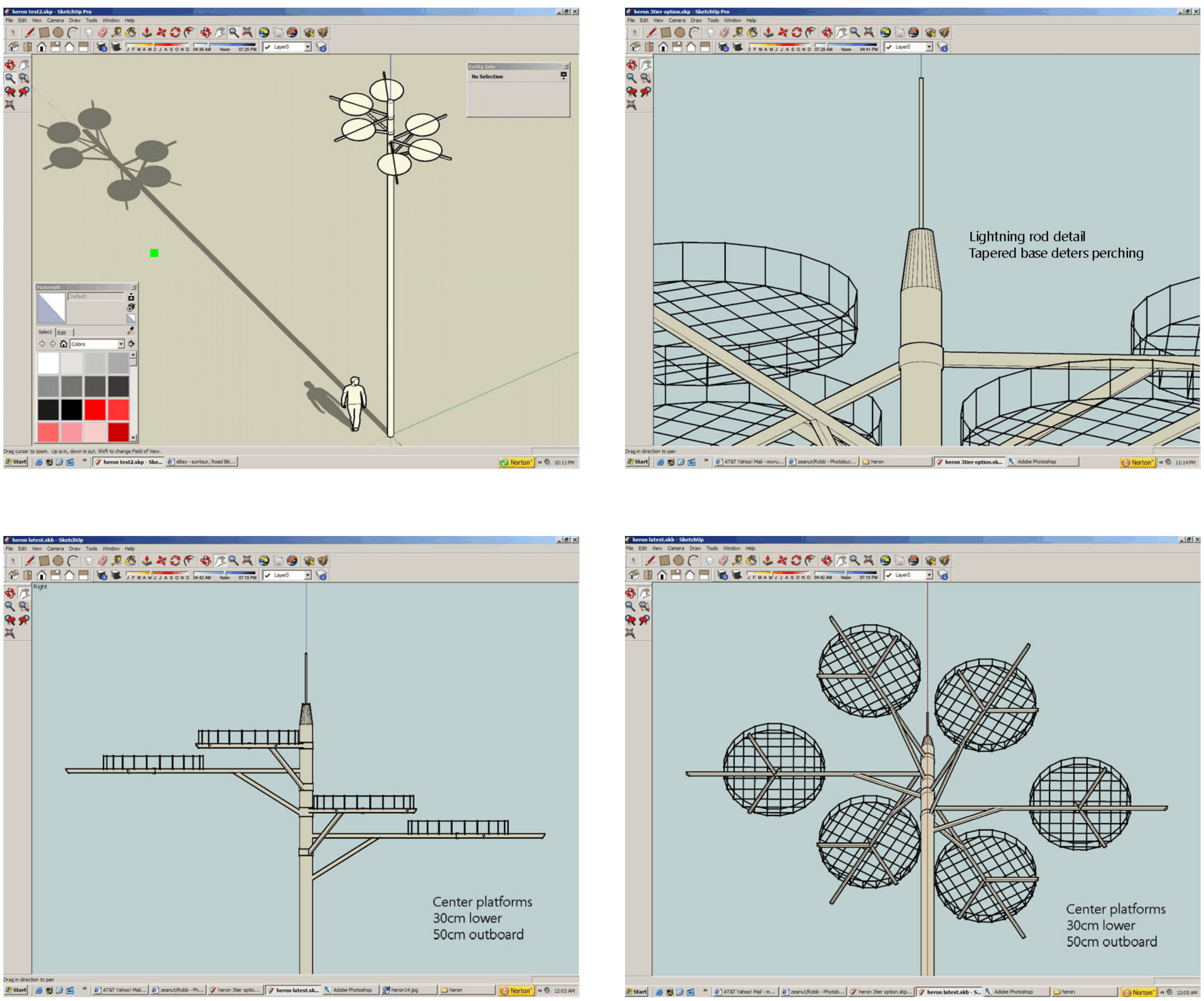
The *Marina del Rey Heronry Report for 2005-2006* includes the following declaration:

> The GBH colony at Parcel 64 is in need of management. This is true regardless of whether the proposed redevelopment project moves forward and the existing nest trees are left standing or are removed. The existing trees are disintegrating and their

> usefulness to the herons is exceptionally limited. Presently available nest opportunities are limited in scope and number, and this condition is constraining the size and future welfare of the colony.

We concur with Dr. Froke's conclusions regarding the need to manage the herons that nest along Fiji Way in order to provide these birds with suitable nesting sites that will not disintegrate due to guanification and that will be compatible with pre-existing human activities in the neighborhood.

Pages 8.9 through 8.16 of Dr. Froke's report describe six case studies from across the United States in which Great Blue Herons readily adopted artificial nest structures. We have been working with designer Matt Ruiz to develop designs for artificial Great Blue Heron structures (see Figures 1-4, below).



Figures 1-4 (upper left, upper right, lower left, lower right). These sketches depict a basic prototype design, but different configurations can be fabricated depending on individual site characteristics and management needs. The overarching goal is to provide the structural characteristics of an ideal nest substrate (e.g., size and depth of the platforms, distance of the platforms from each other, height of the platforms above the ground or water, inclusion of a perch at each nest platform).

The metal structures shown on the previous page are intended to be resistant to terrestrial predators, very durable, nearly maintenance-free, and visually appealing to both herons and people. We anticipate that the pole supporting the heron platforms will be made of either stainless steel or aluminum and that the arms and baskets will be fashioned out of stainless steel. These decisions will be made once the basic conceptual design has gained the needed approvals.

It is our understanding that the U.S. Fish and Wildlife Service and California Department of Fish and Game urge caution in determining the number of heron platforms to be established for fear that Great Blue Herons may prey upon Snowy Plovers or California Least Terns, endangered species that nest on beaches in the local area. Therefore, input from these resource agencies will be needed in order to determine the proper number of structures to be established.

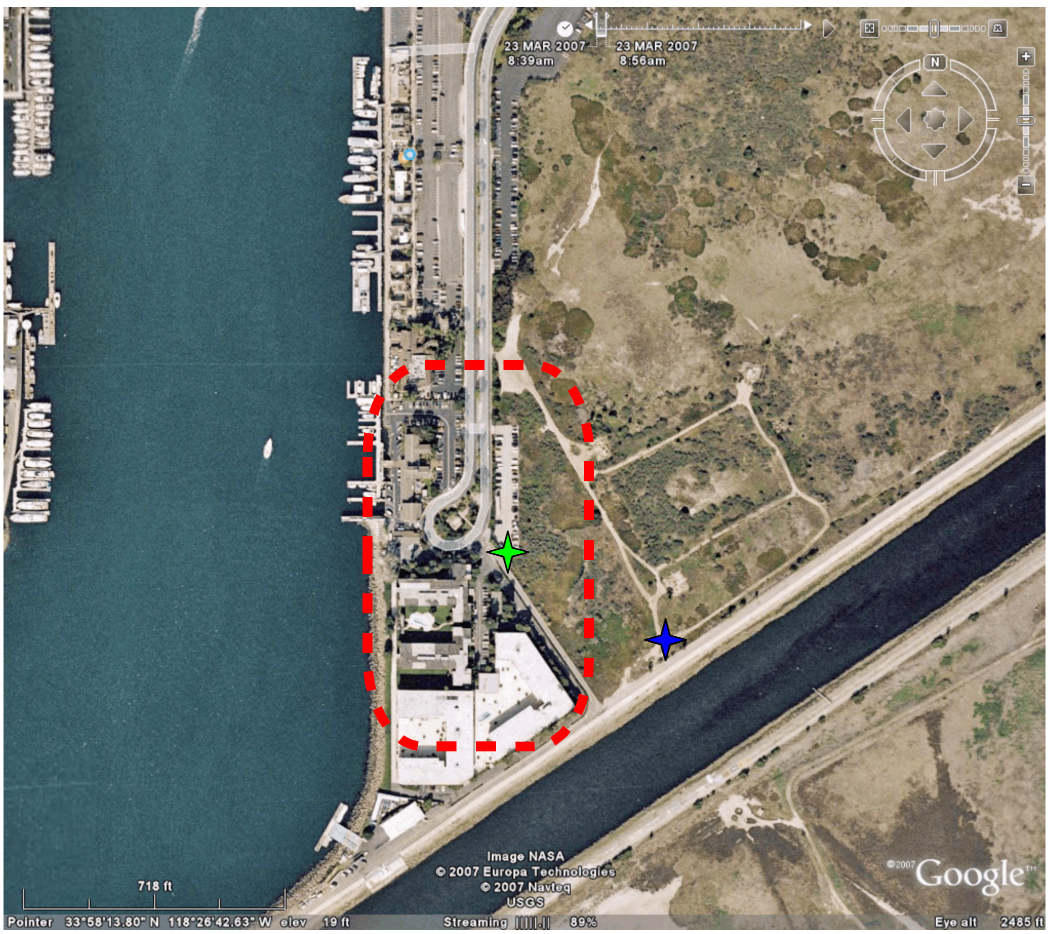


Figure 5. This exhibit shows the area along Fiji Way where Great Blue Herons have been nesting in recent years ( ) and the site that has been proposed for the temporary installation of a Great Blue Heron nesting structure ( ). The temporary site is owned by the California Department of Fish and Game, and the Department has given tentative approval for installation of a temporary heron nesting structure at this location. Also shown is the approximate area in the Ballona Freshwater Reserve that could potentially serve as a permanent location for the heron nesting structure ( ). Compared with the temporary site, this natural site is farther from human activity and closer to water, both factors that could improve its attractiveness to nesting Great Blue Herons. The Department has not yet determined its vision for the ecological reserve, however, so it would be premature to propose installing a permanent structure at this location at this time.

In recent years, the Great Blue Herons of Marina del Rey have repeatedly demonstrated their ability to successfully raise young in various types of trees while people go about their business below them. At the pool area of Villa Venetia, pairs have even nested in trees where people can look directly into their nests from nearby balconies. In light of the birds' evident habituation to normal, everyday human activities, we perceive no basis for the heron management plan to identify a "setback" or "buffer zone" around the proposed nesting structure in which routine human activities such as walking, biking, or driving would be prohibited. We do recommend, however, that the management plan include prohibitions against any type of major disturbance around the nesting structure during times when the herons are nesting or otherwise present at the nesting platforms.

Conclusions

We conclude that Dr. Froke has done a capable job of reporting the status of Great Blue Herons at Marina del Rey from 2005 to present, including documenting the birds' capacity to establish territories and successfully breed in areas where humans are routinely and conspicuously present. His report also includes excellent information on heron biology and describes several instances in which Great Blue Herons readily adopted artificial nest structures. We believe that implementation of the concepts outlined in this memorandum will allow Great Blue Herons to maintain their breeding population at Marina del Rey while (1) limiting the potential threats that these predatory birds pose to endangered beach-nesting birds, (2) preventing the potentially dangerous toppling of more trees in the landscape due to the accumulation of guano below heron nests, and (3) helping to promote public health and the intended operation of the marina by moving these large birds to an appropriate area away from sidewalks, buildings, and associated parking areas. We will continue to work with you and other interested parties to develop a final management plan that will achieve these goals.

Robert A. Hamilton
Curriculum Vitae

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Expertise

CEQA Analysis
General Biological Surveys
Endangered Species Surveys
Avian Population Monitoring
Open Space Management
Bird Banding

Education

1988. Bachelor of Science degree in Biological Sciences, University of California, Irvine.

Professional Experience

1995 to Present. Independent Biological Consultant.
1988 to 1995. Biologist, LSA Associates, Inc.
1987 to 1988. Independent Biological Consultant.

Other Relevant Experience

Field Ornithologist, San Diego Natural History Museum Scientific Collecting Expedition to Central and Southern Baja California, October/November 1997 and November 2003.
Field Ornithologist, Island Conservation and Ecology Group Expedition to the Tres Marías Islands, Nayarit, Mexico, 23 January to 8 February 2002.
Field Ornithologist, Algalita Marine Research Foundation neustonic plastic research voyages in the Pacific Ocean, 15 August to 4 September 1999 and 14 to 28 July 2000.
Field Assistant, Bird Banding Study, Río Ñambí Reserve, Colombia, January to March 1997.

Board Memberships, Advisory Positions, Etc.

American Birding Association: Baja California Peninsula Regional Editor, *North American Birds*
Western Field Ornithologists: Publications Committee & Associate Editor of *Western Birds*
California Native Plant Society, Orange County Chapter: Conservation Chair (1992-2003)
California Bird Records Committee (1998-2001)
Nature Reserve of Orange County: Technical Advisory Committee (1996-2001)

Other Professional Affiliations

American Ornithologists' Union
Cooper Ornithological Society
Association of Field Ornithologists
Institute for Bird Populations
Southern California Academy of Sciences
Western Foundation of Vertebrate Zoology

Permits

Federal 10(A)1(a) Permit No. TE-799557 to survey for the Coastal California Gnatcatcher and Southwestern Willow Flycatcher (expires 12 October 2007)
Federal Bird Banding Subpermit No. 20431-AY

Insurance

$2,000,000 general liability policy (Hartford)
$1,000,000 auto liability policy (State Farm)

Principal Professional Qualifications

I perform field work throughout southern California, including 1) floral and faunal surveys, 2) directed surveys for sensitive plant and animal species, including California Gnatcatchers, Southwestern Willow Flycatchers, and Least Bell's Vireos, 3) open space monitoring and management, 4) vegetation mapping, and 5) bird banding. Professional experience includes:

Under contract to the Port of Long Beach, I completed a 1996 study of the Black-crowned Night Heron colony that nested in ornamental street trees at the Long Beach Naval Shipyard (LBNS). This study involved (1) determining the number of pairs nesting at the LBNS in 1996 (506 pairs); (2) collecting data on breeding activity, including banding of 525 nestlings; (3) characterizing the trees used for nesting; (4) analyzing the data collected in order to identify relationships that exist between heron nesting activity and nest-tree characteristics; (5) reviewing the known nesting status of the Black-crowned Night-Heron in southern California in order to help characterize the regional importance of the LBNS nesting colony; and (6) providing recommendations for relocation of the heron rookery to a different portion of the Long Beach Naval Shipyard.

I have worked with study-design specialists and resource agency representatives to develop the long-term passerine bird monitoring program for the Nature Reserve of Orange County, and have directed its implementation since 1996. This has included (1) oversight of up to 10 constant-effort bird banding stations from 1998 to 2003 under the Monitoring Avian Productivity and Survivorship (MAPS) program; (2) annual monitoring of 40 California Gnatcatcher and Cactus Wren study sites from 1999 to 2004; and (3) detailed mapping of cactus scrub resources and two rounds of focused surveys for the Cactus Wren across the NROC's coastal reserve in 2006.

Having prepared biological technical reports for numerous CEQA documents for projects throughout southern California, I am highly qualified to provide professional, third-party review of CEQA documents. I have professionally reviewed EIRs for the following projects:

- The Ranch Plan (residential/commercial, County of Orange)
- Southern Orange County Transportation Infrastructure Improvement Project (Foothill South Toll Road, County of Orange)
- Tonner Hills (residential, City of Brea)
- Villages of La Costa Master Plan (residential/commercial, City of Carlsbad)
- Whispering Hills (residential, City of San Juan Capistrano)
- Santiago Hills II (residential/commercial, City of Orange)
- Rancho Potrero Leadership Academy (youth detention facility/road, County of Orange)
- Saddle Creek/Saddle Crest (residential, County of Orange)
- Frank G. Bonelli Regional County Park Master Plan (County of Los Angeles)

References provided upon request.

Presentations

Hamilton, R. A., Mitrovich, M. J. 2006 Cactus Wren Study, Nature Reserve of Orange County. Twenty-minute Powerpoint presentation given at the Nature Reserve of Orange County 10th Anniversary Symposium, Irvine, California, 21 November 2006.

Hamilton, R. A. 2006. 1999-2004 Results of Annual California Gnatcatcher and Cactus Wren Monitoring in the Nature Reserve of Orange County. Twenty-minute Powerpoint presentation given at the Partners In Flight meeting: Conservation and Management of Coastal Scrub and Chaparral Birds and Habitats, Starr Ranch Audubon Sanctuary, 21 August 2004.

Hamilton, R. A. and K. Messer. 1999-2004 Results of Annual California Gnatcatcher and Cactus Wren Monitoring in the Nature Reserve of Orange County. Twenty-minute Powerpoint presentation given at the Partners In Flight meeting: Conservation and Management of Coastal Scrub and Chaparral Birds and Habitats, Starr Ranch Audubon Sanctuary, 21 August 2004; and at the Nature Reserve of Orange County 10th Anniversary Symposium, Irvine, California, 21 November 2006.

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Hamilton, R. A. and R. A. Erickson. 2001. Noteworthy breeding bird records from the Vizcaíno Desert, Baja California Peninsula. Pp. 102-105 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Hamilton, R. A. 2001. Log of bird record documentation from the Baja California Peninsula archived at the San Diego Natural History Museum. Pp. 242-253 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

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Erickson, R. A., R. A. Hamilton, and S. N. G. Howell. 2001. New information on migrant birds in northern and central portions of the Baja California Peninsula, including species new to Mexico. Pp. 112-170 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Howell, S. N. G., R. A. Erickson, R. A. Hamilton, and M. A. Patten. 2001. An annotated checklist of the birds of Baja California and Baja California Sur. Pp. 171-203 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

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Erickson, R. A., and Hamilton, R. A. 1995. Geographic distribution: *Lampropeltis getula californiae* (California Kingsnake) in Baja California Sur. Herpetological Review 26(4):210.

Bontrager, D. R., R. A. Erickson, and R. A. Hamilton. 1995. Impacts of the October 1993 Laguna fire on California Gnatcatchers and Cactus Wrens. *in* J. E. Keeley and T. A. Scott (editors). Wildfires in California Brushlands: Ecology and Resource Management. International Association of Wildland Fire, Fairfield, Washington.

Erickson, R. A., R. A. Hamilton, S. N. G. Howell, M. A. Patten, and P. Pyle. 1995. First record of Marbled Murrelet and third record of Ancient Murrelet for Mexico. *Western Birds* 26: 39-45.

Erickson, R. A., and R. A. Hamilton. 1993. Additional summer bird records for southern Mexico. *Euphonia* 2(4): 81-91.

Erickson, R. A., A. D. Barron, and R. A. Hamilton. 1992. A recent Black Rail record for Baja California. *Euphonia* 1(1): 19-21.

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EDUCATION

8/01 - Present	Ph.D. candidate, College of Natural Resources, University of Idaho, Moscow. Dissertation topic: Long Distance Movements, Natal Dispersal, and Philopatry in Sympatric Buteos in Southwestern California
9/79 - 8/89	California State University, Long Beach, M.S. Degree in biology August 1989. Thesis: Red-shouldered Hawk habitat home range and habitat use in southern California. Graduation With Honors. Outstanding thesis award, School of Natural Sciences.
9/71 - 5/79	California State University, Long Beach, B.S. Degree in zoology, May 1979.

AWARDS

2005 Wildlife Biologist Professional of the Year. Western Section of the Wildlife Society.

PROFESSIONAL HISTORY

1/77-present Independent research biologist/consultant. Supervised 1-7 employees/year. Responsible for performing surveys of nesting and wintering birds of prey for the California Department of Fish and Game, Bureau of Land Management, U.S. Forest Service, Department of Defense, and numerous private land owners. Countless general biological surveys. Numerous focused surveys for California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, arroyo southwestern toad, red-legged frog, coast horned lizard, flat-tailed horned lizard, desert tortoise, orange-throated whiptail, coastal whiptail, coast-patched nosed snake, coastal glossy snake, red-diamond rattlesnake, Pacific pond turtle, and Pacific pocket mouse. Numerous general herpetological, small mammal, breeding bird and winter bird surveys in southern California. Translocated several hundred arroyo toads at MCB, Camp Pendleton. Managed sensitive herpetological, mammal and raptor surveys for the Transportation Corridor Agency in Orange County and a raptor status and management plan for Naval Weapons Station, Seal Beach and Fallbrook Detachment. Prepared numerous biological assessments, and worked on several avian research projects in the western U.S., Alaska, Peru, Ecuador, and India. Over 500 hours of helicopter and fixed wing nest survey work and aerial radio tracking of eagles, California condors, hawks and herons.

7/90-present Research Biologist, Western Foundation of Vertebrate Zoology. Served on Science Advisory Board of the South Orange County Natural Communities Conservation Program. Member of Technical Advisory Committee for the 17,000 acre Nature Reserve of Orange County. Herpetological input into the Orange County environmental GIS and Cleveland National Forest environmental inventory. Management of long-term (30 yr.) raptor ecology study in California. Management of successful Great Blue Heron mitigation project designed to increase numbers of nesting herons through artificial nest platforms. Supervised and performed predator management activities related to protection of California least terns, snowy plovers, and light-footed clapper rails in southwestern California from avian and other vertebrate predators for FWS. Locations included Vandenberg Air Force Base, Naval Weapons Station, Seal Beach, Batiquitos Lagoon, Port of Long Beach, Port of San Diego, and Tijuana Slough National Wildlife Refuge. Supervisor on a two year Caltrans radio-telemetry study of nesting peregrine falcons in southwestern California and their relationship to California least terns. Principal biologist overseeing long-term monitoring of raptors of the Nature Reserve of Orange County. Organized and finished seven year MAPS passerine monitoring station.

1976 – 2000 Heron research: As part of investigations into natal dispersal, and while working for the Bureau of Land Management, I banded ~ 30 nestling great blue herons in ponderosa pines at Eagle Lake, Lassen County. From 1987-1990 I banded ~ 15 great blue herons on San Juan Creek in sycamores on Rancho Mission. During spring of 1990 I attached 15 radio transmitters to fledgling great blue herons and followed them from Irvine Lake to San Luis Obispo, Long Beach, north central Nevada, and San Diego. In 1990 I designed and coordinated a great blue heron mitigation project that successfully established about 6 artificial heron nests adjacent to an existing rookery with diseased trees. These platforms have been successful at fledging young in every year examined. In 1995 I color-banded over 500 nestling black-crowned night herons and 3 adults nesting in fig trees in Long Beach.

1/93-2001 Research biologist/advisor in India (7 visits) for Indo-US wildlife conservation project sponsored by the U.S. Fish & Wildlife Service International Affairs Office, Indian Government, and Bombay Natural History Society. Responsibilities involved educating local biologists in the various techniques needed to capture birds, and conduct radio-telemetry research.

1992-2002 Orange County Natural History Museum. Designed museum theme and layout including display cases, terrariums, and 108 ft. x 4 ft. mural.

1993-present Saddleback College, Dept. of Technology and Applied Sciences. Instructor, California Natural History.

1999-present Dept. of Biology, Calif. State Univ., Long Beach, thesis committee member to two students, C.S.U., Humboldt, one student, and C.S.U., Fullerton, one student.

5/82-6/90 Research Biologist, National Audubon Society. Responsible for writing the grant proposal and ultimately the successful award of two grants totaling $300,000 for 6 years of full time research on the ecology of southern California raptor populations. Responsible for project management, personnel selection, supervision of 12 volunteers, proposal and budget preparation, method design, data analysis, report writing, and publication of results. Directed the effort to capture all wild free flying California condors for transmitter placement or captive breeding. Radio tracked condors, and conducted contaminant studies involving condors and 180 golden eagles.

5/81-9/83 Research biologist, University of California, Santa Cruz. Principal investigator on a three year study designed to determine the status of goshawk populations in California for the Department of Fish and Game.

1/80-8/81 Research biologist. Trapped, and placed transmitters on great gray owls for the U.S. Forest Service, prairie falcons for the Department of Fish and Game, and peregrine falcons in Peru, South America for the Bodega Bay Institute of Pollution Ecology.

4/79-10/79 Wildlife Biologist. U.S.D.I., Bureau of Land Management. Principal investigator of a study designed to determine the status of the Swainson's hawk in California. Surveyed all semi-arid and desert regions, reviewed literature and museum records, assessed reproduction, banded adults and young, and prepared final report. Resulted in listing of the Swainson's hawk.

1/79-6/79 Research biologist. Camp Pendleton Marine Corps Base. Awarded a contract to survey, and report on the ecology, and distribution of raptors inhabiting the 200 sq. mile base.

6/75-10/79 Biological technician. U.S.D.I., Bureau of Land Management. California and Nevada. Conducted reptile, amphibian, small mammal, and avian surveys of 3.25 million acres of public land as part of a grazing EIS.

PERMITS

Federal Endangered Species Permit (TE-787376-8 Feb. 20, 2002 - Feb. 19, 2005) for Red-legged Frog (transmitters, transponders), Arroyo Southwestern Toad, California Gnatcatcher (banding), Least Bell's Vireo (banding), Southwestern Willow Flycatcher (banding), California Least Tern, Snowy Plover, Peregrine Falcon, Bald Eagle, and Swainson's Hawk. Federal Bird Marking and Salvage Permit. Predator Management Permit. Migratory Bird (Burrowing Owls etc.) relocation permit. Cowbird trapping authorization. Desert Tortoise surveys.

Employee permits: Jeff Kidd (TE-022230-1, Quino Checkerspot Butterfly, Arroyo Southwestern Toad, California Gnatcatcher. Chris Niemela (Quino Checkerspot Butterfly, Arroyo Southwestern Toad, California Gnatcatcher. Jim Luttrell (California Gnatcatcher).

ORIGINAL RESEARCH

1970-present Coastal southern California. Long term study of the population ecology and biology of the red-tailed hawk, red-shouldered hawk, barn owl, and great horned owl. Supplemental study of the western screech owl, long-eared owl, Cooper's hawk, white-tailed kite, and golden eagle. Twenty-five thousand hawks and owls banded as part of a dispersal, migration, survivorship, and mate/territory fidelity study. Twenty-four year study on Swainson's Hawk in northeast California.

OTHER ACTIVITIES

BOARD MEMBER, Orange County Natural History Association 1991-2003, Sea & Sage Audubon Society 1985-95, Western Bird Banding Association 1982-84.

PROFESSIONAL MEMBERSHIPS: The Wildlife Society (Life), The Raptor Research Foundation (Life), American Ornithologists Union, Cooper Ornithological Society (Life), Association of Field Ornithologists (Life), Western Bird Banding Association (Life), Society for Conservation Biology (Life), Society for the Study of Amphibians and Reptiles, Hawk Migration Association (Life), California Native Plant Society (Life).

PUBLIC SPEAKING: Hundreds of presentations to National Audubon Society chapters, professional meetings, and conferences on the subject of raptors, reptiles, amphibians, and natural history including Eilat, Israel, and on the subject of California Condors, by invitation to Milan, Italy.

BOOK REVIEWS: The Auk (Johnsgard. 1990 - Hawks, Eagles, and Falcons of North America), Journal of Raptor Research (Wheeler and Clark. 1995 - A photographic guide to North American Raptors), Journal of Raptor Research (Glinski 1998 The Raptors of Arizona).

SCIENTIFIC MANUSCRIPT REVIEWS: Journal of Wildlife Management, Journal of Raptor Research, Journal of Field Ornithology, Condor, North American Bird Bander.

NORTH AMERICAN BANDING COUNCIL Raptor Research Foundation representative 1999-2004.

REFERENCES

Dr. Charles T. Collins: (562) 598-4385

Dr. J. Michael Scott: (208) 885-6336

TECHNICAL WRITING

PUBLICATIONS

Clark, W.S. and P.H. Bloom. In Press. Plumages of Adult and Basic 1 Rough-legged Hawks. Submitted to Journal of Field Ornithology.

P.H. Bloom and W.S. Clark. 2001. Molt and Sequence of Plumages of Golden Eagles, and a Technique for In-Hand Ageing. North American Bird Bander. 26:97-116.

Collins, C.T. and P.H. Bloom. 2000. The Status of Harlan's Hawk in Southern California. Western Birds. 31:200-202.

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Tietje W.D., P.H. Bloom, and J.K. Vreeland. 1998. Characteristics of Red-tailed Hawk Nest Sites in Oak Woodlands of Central California. Proceedings of a Symposium on Oak Woodlands: Ecology, Management, and Urban Interface Issues. Pgs. 365-372.

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Bloom, P.H. and M.D. McCrary. 1996. The urban Buteo: Red-shouldered Hawks in southern California. In: Raptors in human landscapes, adaptations to built and cultivated environments. D.M. Bird, D.E. Varland, and J.J. Negro, eds. Academic Press Pgs 31-39.

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Garrison, B.A. and P.H. Bloom. 1993. Natal origins and winter site fidelity of Rough-legged Hawks wintering in California. Journal of Raptor Research 27:116-118.

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Risebrough, R.W., A.M. Springer, S.A. Temple, C.M. White, J.L.B. Albuquerque, P.H. Bloom, R.W. Fyfe, M.N. Kirven, B.A. Luscombe, D.G. Roseneau, M. Sander, N.J. Schmitt, C.G. Thelander, W.G. Vasina, and W.W. Walker II. 1990. Observaciones del Halcon Peregrino, Falco peregrinus subspp, en America Del Sur. Rev. Brasil. Biol., 50:563-574.

Pattee, O.H., P.H. Bloom, J.M. Scott, and M.R. Smith. 1990. Lead Hazards Within the Range of the California Condor. The Condor 92:931-937.

Risebrough, R.W., R.W. Schlorff, P.H. Bloom and E.E. Littrell. 1990. Investigations of the decline of Swainson's Hawk populations in California. Journal of Raptor Research 23:63-71.

Clark, W.S., P.H. Bloom, and L.W. Oliphant. 1989. Aplomado Falcon steals prey from Little Blue Heron. Journal of Field Ornithology 60:380-381.

Harlow, D.L. and P.H. Bloom. 1989. Status of Buteos and the Golden Eagle in the western United States. National Wildlife Federation. Proceedings On the Status of Western Raptors pgs. 102-110.

Bloom, P.H., J.M. Scott, O.H. Pattee, and M.R. Smith. 1989. Lead contamination of Golden Eagles within the range of the California Condor. Raptors in the Modern World - Proceedings of the International Conference on Birds of Prey, Eilat, Israel, 1987.

Wiemeyer, S.N., J.M. Scott, M.P. Anderson, P.H. Bloom, and C.J. Stafford. 1988. Environmental contaminants in California Condors. J. Wildl. Manage. 52(2):238-247.

Bloom, P.H. 1987. Capturing and handling raptors. Pgs. 99-123. In Millsap, B.A., K.W. Cline, B. Giron Pendleton, and D.A. Bird eds. Raptor Management Techniques Manual. N.W.F. National Wildlife Federation Science Technical Series #10. National Wildlife Federation.

Bloom, P.H. 1985. Raptor movements in California. Pgs. 313-323. In Harwood, M. ed. Proceedings of Hawk Migration Conference IV. Rochester, New York.

Schlorff, R.D. and P.H. Bloom. 1984. Importance of riparian systems to nesting Swainson's Hawks in the Central Valley of California. Pgs. 612-618. In Warner, R.E. and K.M. Hendrix eds. California Riparian Systems, Ecology, Conservation, and Productive Management. University of California Press.

McCrary, M.D. and P.H. Bloom. 1984. Lethal effects of introduced grasses on Red-shouldered Hawks. Journal of Wildlife Management 48:1005-1008.

McCrary, M.D. and P.H. Bloom. 1984. Observations on female promiscuity in the Red-shouldered Hawk. Condor 86:486.

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Bloom, P.H. 1983. Notes on the distribution and biology of the Flammulated Owl in California. Western Birds 14:49-52.

Bloom, P.H. and S.J. Hawks. 1982. Food habits of nesting Golden Eagles in northeast California and northwest Nevada. Raptor Research. 16:110-115.

Barrows, C.W., P.H. Bloom and C.T. Collins. 1982. Sexual differences in the tail barring of Spotted Owls. North American Bird Bander. 7:138-139.

Bloom, P.H. 1979. Ecological studies of the Barn Owl in California. Pgs. 36-39. In Shaeffer, P. and S.M. Ehlers eds. Proceedings of the National Audubon Society's Symposium on Owls of the West: Their Ecology and Conservation.

Collins, C.T. and P.H. Bloom. 1975. An aid to eagle banders. Western Bird Bander. 50:70.

Bloom, P.H. and M.D. McCrary. 1974. Disturbed foothill grassland breeding bird survey. American Birds 28:1000.

Bloom, P.H. 1974. Some precautions to be used in banding studies of nestling raptors. Western Bird Bander 49:4-5.

McCrary, M.D. and P.H. Bloom. 1974. Coastal grassland winter bird survey. American Birds 28:1043.

Bloom, P.H. 1973. Seasonal variation in body weight of sparrow hawks in California. Western Bird Bander 48:17-19.

TECHNICAL REPORTS

Bloom, P.H. 2002. Breeding raptor and loggerhead shrike status and management recommendations for Site 300, Lawrence Livermore Laboratory - 2002, Livermore, CA 25p.

Hull, B. and P. Bloom. 2001. The North American Bander's Manual for Raptor Banding Techniques. North American Banding Council. 22p.

Bloom, P.H. 1996. Raptor Status and Management Recommendations for Naval Ordnance Center, Pacific Division, Fallbrook Detachment, and Naval Weapons Station, Seal Beach, 1993/95.

Morrison, M.L., L.S. Hall and P.H. Bloom. 1994. Hawaiian Hawk (Buteo solitaries) population survey. Prepared for U.S. Fish and Wildlife Service. 30p.

Bloom, P.H. 1991. Status of the Golden Eagle on Marine Corps Base, Camp Pendleton. Prepared for Department of Defense. 21p.

Bloom, P.H. 1988. China Lake Naval Weapons Center Raptor Inventory and Assessment. Prepared for Department of Defense.

Bloom, P.H., G.R. Stewart, and B.J. Walton. 1985. The status of the Northern Goshawk in California, 1981-1983. Wildlife Management Branch Administrative Report 85-1. Supported by Federal Aid in Wildlife Management, Non-game Wildlife Investigations, California Department of Fish and Game, W-64-R-2. 26p.

Bloom P.H. 1983. Raptor inventory and habitat assessment for the Santa Margarita River basin area, San Diego, California. Unpub. rep. prepared for U.S.D.I, Fish and Wildlife Service. 43p.

Bloom, P.H. 1980. The status of Swainson's Hawk in California, 1979. Federal Aid in Wildlife Restoration, Project W-54-R-12, Non-game Wildlife Investigations. Job Final Report 11-8.0. 42p.

Bloom, P.H. 1980. The raptorial birds of Camp Pendleton Marine Corps Base, San Diego County, California. Prepared for Department of Defense. 33p.

Curriculum Vita

Terry L. Master

I. PERSONAL INFORMATION

412 Hahn Road, Nazareth, Pennsylvania 18064

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(570) 422-3724 (fax)

II. EDUCATION

B.S., Muhlenberg College, 1976

M.S., East Stroudsburg University, 1980

Ph.D., Lehigh University, 1988

III. ACADEMIC EMPLOYMENT

Prof. of Biology, East Stroudsburg University, Aug.1989 – Present

Adj. Prof. of Biology, Northampton Community College, 1985-1992

IV. PROFESSIONAL ACTIVITIES

A. Successful Grants (total = $1,091,125.00)

1. $6,000.00, Carnegie Museum of Natural History, 2006. "Acadian Flycatcher Nesting Success in Deciduous and Hemlock Forests."

2. $36,500.00, PA Wild Resource Conservation Program, 2006-2008. "The Influence of Resource Requirements and Competitive Interactions on Productivity and Survivorship of Great Egrets, Black-crowned Night-Herons and Double-crested Cormorants at the Wade Island heronry."

3. **$70,000.00,** U.S. National Park Service, 2004-2005. "A Survey of Wetland Birds of the Delaware Water Gap National Recreation Area Using Point Counts."

4. **$50,000.00,** U.S. National Park Service, 2002-2003. "A Survey of Grassland Birds of the Delaware Water Gap National Recreation Area Using Point Counts."

5. $1,725.00, U.S. National Park Service, 2002. Updating of NPSpecies database for birds within the Delaware Water Gap National Recreation Area.

6. $10,000.00, PA Wild Resource Conservation Fund, 2002. "Habitat Use of Hemlock Dependent Songbirds in Relation to Hemlock Woolly Adelgid Infestations."

7. $2,900.00, Pennsylvania Game Commission, 2001. "Management Plan for the Wade Island Heronry."

8. $2,000.00, Wetlands Institute, July 1999. Supervision of interns and bird research projects.

9. $850,000.00, U.S. Environmental Protection Agency, 1998-2001 "Use of bioindicators to develop a calibrated index of regional ecological integrity for forested headwater ecosystems." Cooperative grant with Penn State and the Carnegie Museum of Natural History. Co-principle investigator. (**ESU's share = $212,500.00**).

10. **$<u>62,000.00</u>,** National Science Foundation ILI, 1996-1997 "Integration of the MacLab Physiographic Recording System into the biology curriculum." Co-principle investigator.

B. Unsuccessful Grants (total = $88,457.00)

1. **<u>$18,957.00</u>,** PA Wild Resource Conservation Program, "Acadian Flycatcher Nesting Success and Breeding Ecology I Hemlock and Deciduous Forests."

2. **<u>$35,500.00</u>,** PA State Wildlife Grant, "Acadian Flycatcher Nesting Success and Breeding Ecology in Hemlock and Deciduous Forests."

3. **<u>$10,000.00</u>,** Journal of Field Ornithology – Pamela and Alexander Skutch Research Fund, "Habitat Use and Competitive Interactions among a Guild of Resident and Migrant Riparian Songbirds in Costa Rica."

4. **$<u>24,000.00</u>,** National Geographic Society, Spring 2000, "Migrant Songbirds as Bioindicators of Human Impacts on Tropical Streams."

C. Recent Publications

1. Master, T., Mulvihill, R., Leberman, R., Sanchez, J. and E. Carman. 2006. **A Preliminary Study of Riparian Songbirds in Costa Rica with Emphasis on Wintering Louisiana Waterthrushes**. In C. John Ralph and T. D. Rich (eds.), Bird Conservation, Implementation and Integration in the Americas: Proceedings of the Third International Partners In Flight Conference, volume 1. General Technical Report PSW-GTR-191, Pacific Southwest Research Center, Albany, CA.

2. Master, T., Leiser, J., Bennett, K., Bretsch, J.K. and H.J. Wolfe. **Patch selection by Snowy Egrets.** Waterbird 28: 220-224.

3. Mulvihill, R., Cunkelman, A., Quattrini, L., O'Connell, T. and T. Master. 2002. **Opportunistic Polygyny in the Louisiana Waterthrush**. Wilson Bulletin 114: 106-113.

4. Parsons, K. and T. Master. 2000. **Snowy Egret (*Egretta thula*).** *In* The Birds of North America, No. 489 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., The Academy of Natural Sciences, Philadelphia; The American Ornithologists' Union, Washington, D.C.

5. Sanchez, J. E., Mulvihill, R. S. and T. L. Master. 2000. **First Description of the Nest and Eggs of the Green-crowned Brilliant (*Heliodoxa jacula*), with Some Behavioral Notes.** Ornithologia Neotropical 11(3): 190-195.

6. Master, T. 1999. **Predation by Rufous Motmot on Black and Green Poison Dart Frog**. Wilson Bulletin 111(3): 439-440.

D. Oral Presentations at Professional Meetings

1. **<u>Pennsylvania Society for Ornithology Meeting</u>,** Carnegie Museum of Natural History, Powdermill Avian Research Center, Rector, PA, May 19, 2006. "Birds and Hemlock Woolly Adelgids."

2. **<u>Lehigh Valley Ecology and Evolution Society Meeting</u>,** Lehigh University, Bethlehem, PA, April 8, 2006. "Effects of Hemlock Woolly Adelgid Infestation on Songbird Populations."

3. **<u>Pennsylvania Academy of Science Meeting</u>,** Grantville, PA, March 31-April 2, 2006. "A Point Count Survey of Birds of Successional Habitats in the Delaware Water Gap National Recreation Area."

4. **<u>Pennsylvania Aggregates and Concrete Association</u>**, Holiday Inn, Grantville, PA, February 26, 2002. "Restoration of Wetland Habitat in a Former Limestone Quarry."

5. **Waterbird Society Meeting,** Plymouth, MA., November 5 -8, 2000. "A Survey of Riparian Passerine Birds of the World with Emphasis on Species in the Western Hemisphere."

6. **Waterbird Society Meeting,** Grado, Italy, November 1999. "Snowy Egret Population Dynamics in Southern New Jersey."

7. **Pennsylvania Academy of Science Meeting,** Pocono Manor, April 9-11,1999. "Louisiana Waterthrush Nesting Success on Pristine and Impacted Streams"

E. Poster Presentations

1. **North American Ornithological Conference,** Veracruz, Mexico, Oct. 3-8, 2006. Romano, B., Detwiler, D. and T. Master. "Great Egrets in the City: Habitat Use and Competition on the Susquehanna River in Harrisburg, PA."

2. **Waterbird Society, Cuiaba, Brazil,** Sept. 24-27, 2003. Renninger, H. and T.L. Master. "Foraging Behavior of Snowy Egrets."

3. **Partners In Flight,** Pacific Grove, Asilomar, California. March 2002. Master, T. L, Mulvihill, R. S., Leberman, R., Sanchez, J. and E. Carmen. "Observations of a Guild of Obligate Riparian Songbirds in Costa Rica with Emphasis on the Louisiana Waterthrush (*Seiurus motacilla*)."

4. **American Ornithologists' Union Meeting,** St. John, Newfoundland, Canada, August 2000. Mulvihill, R. S., Quattrini, L., Cunckleman, A., Master, T., Cherepko, J, Brooks, R. and T. O'Connell. "Nestling Provisioning in Louisiana Waterthrushes (*Seiurus motacilla*)."

5. **American Ornithologists' Union Meeting,** St. John, Newfoundland, Canada, August 2000. Master, T., Martino, C., Mulvihill, R., Sheehan, J., Brooks, R. and T. O'Connell. "Is the Foraging Ecology of Louisiana Waterthrushes Affected by Anthropogenic Impacts on Stream Quality?"

6. **IV Neotropical Ornithological Congress,** Monterrey, Mexico, October 1999, R.S. Mulvihill, T.L. Master , R.C. Leberman and J. E. Sanchez. "Ornithological Notes from Costa Rica: Winter Ecology of Louisiana Waterthrush; First Nest Description for the Green-crowned Brilliant."

7. **American Ornithologists' Union Meeting,** Ithaca, NY, August, 1999. Master, T., George, G. and K. Geyer. "Louisiana Waterthrush Productivity on Pristine and Impacted Streams."

F. Invited Professional Presentations

1. **Richard Stockton College,** Pomona, New Jersey, Biology Seminar Series, November 8, 2006, "Aliens Attack: Hemlock Woolly Adelgids – a Story about the Birds and the Trees."

2. **Pennsylvania Wild Resource Conservation Program**, Annual Board Meeting, Fish and Boat Commission, Harrisburg, Pennsylvania, October 26, 2006. "Wading Birds in the City: Habitat Use and Competition in the Susquehanna River in Harrisburg, PA."

3. **Ornithological Association of Costa Rica**, University of Costa Rica, San Jose, August 13, 2001. "Riparian Songbirds of the World."

4. **Texas A&M, Dept. of Wildlife Fisheries Sciences Seminar Series,** College Station, Tx., April 19, 2001. "The Snowy Egret: a study in foraging flexibility."

V. TEACHING ACTIVITIES

A. Courses taught

1. Introductory Biology, Animal Behavior, Behavioral Ecology, General Ecology, Predator-prey Relationships, Ornithology, Seminar at East Stroudsburg University

2. Tropical Ornithology at Estacion Biologica LaSuerte from 1996-2001 and at many sites in 2003 and 2006.

3. Behavioral Ecology at Marine Science Consortium, Wallops Island, VA. 1993.

B. Internships/Field Experiences Supervised

1. **Kenya/Tanzania,** January 2005. Vigilance behavior in East African Antelopes in Relation to Habitat and Group Size. *Beth Swineford.*

2. **Manu Biosphere Reserve, Peru,** Spring 2005. *Amanda Talpas (ESU).* Macaw fostering project.

3. **East Stroudsburg University,** Spring 2004. *Karena Lloyd-Kinght (ESU)*. Microhabitat features, their use and implications for territorial economics in the Sheepshead Minnow (Cyprinodon variegatus).

4. **Delaware State Forest,** Spring 2003. *Dolly Lesniak and Errin Shoop (ESU)*. Allocation of Parental Care in the Acadian Flycatcher (Empidonax virescens).

5. **U.S. Fish and Wildlife Service,** Spring 2003. *Kevin Kelly (ESU).* Public Education on wetlands issues.

6. **Galapagos Islands, Ecuador**, January 3-11, 2002. *Emily Townsend (Denison University, Ohio).* A Comparison of the Ecology and Behavior of the Lava Lizard (*Tropidurus* spp.) among 6 islands in the Galapagos Archipelago.

7. **Wetlands Insitute, Stone Harbor, NJ,** Summer 2001. *Douglas Becker* (*Muhlenberg College*). Habitat Use of Shorebirds in Relation to Human Use of Beaches.

8. **Wetlands Institute, Stone Harbor, NJ,** Summer 1999-2000. *Heather Wallace (ESU)*. Supervised non-ESU interns (Rachel Smolinski, Michael Shanahan and Jamie Zambo) conducting the Armacost Park heronry census, a mixed-species foraging aggregation size determination and a shorebird presence vs. human activity on beaches project in southern New Jersey.

9. **Estacion Biologica LaSuerte, Cariari, Costa Rica,** Summer, 1999. *Christopher Patton (ESU).* Teaching Assistant for the Ecology, Diversity and Behavior of Tropical Birds course.

10. **Delaware Water Gap Nat'l. Recreation Area,** 1998-2000. *Greg George, Cynthia Martino and Heather Wallace (ESU).* Use of the Louisiana Waterthrush as a Multiple-scale Bioindicator of Headwater Stream Integrity Study.

C. Graduate Students Supervised

1. Mary Murphy, Lara Gooding, Jolie Chylak, William Hobbs, Heather Wallace, James Sheehan, Beth Swartzentruber, Steve Hawk and Gregory George, Lisa Schreffler, Don Detwiler, Brad Romano, Michael Allen

2. 7 M.S. Theses produced, 3 in progress

D. Student Presentations Supervised – MS Students

1. **North American Ornithological Conference, Veracruz, Mexico,** Oct. 3-8, 2006. "Great Egrets in the City: Habitat Use and Competition on the Susquehanna River in Harrisburg, PA." *Brad Romano and Don Detwiler.*

2. Pennsylvania Academy of Science Meeting, Grantville, PA, March 31-April 2, 2006, "Foraging Success and Habitat Use by a Population of Great Egrets (*Ardea alba*) on the Susquehanna River." *Don Detwiler*.

3. Pennsylvania Academy of Science Meeting, Grantville, PA, March 31-April 2, 2006, "The Role of Forster''s Terns (*Sterna forsteri*) in Feeding Aggregations." *Lisa Schreffler*.

4. 122nd American Ornithologists' Meeting, August 16-21, 2004, Quebec City, Quebec. "Resource Partitioning and Habitat Use among a Guild of Resident and Migratory Riparian Passerines in Costa Rica." *Gregory George*.

5. 122nd American Ornithologists' Meeting, August 16-21, 2004, Quebec City, Quebec. "The Effects of Hemlock Woolly Adelgid Infestation on Breeding Populations of Three Species of Hemlock Dependent Songbirds." *Beth Swartzentruber*.

6. 122nd American Ornithologists' Meeting, August 16-21, 2004, Quebec City, Quebec. "Acadian Flycatcher Nesting Ecology in a Threatened Eastern Hemlock Ecosystem." *James Sheehan*.

7. VII Neotropical Ornithological Congress, October 5-11, 2003, Termas de Puyehue, Chile. "Habitat Use and Competitive Interactions among a Guild of Obligate Resident and Migrant Riparian Songbirds in Costa Rica." *Gregory George*.

8. Pennsylvania Academy of Science, April 2003, Harrisburg, PA. "Habitat Use of Solitary Vireos." *Beth Swartzentruber.*

9. **Pennsylvania Academy of Science,** April 2003, Harrisburg, PA. "Habitat Use of Black-throated Green Warblers." *Steven Hawk.*

10. Eastern Bird Banding Association, April 2003, Powdermill Nature Reserve, Rector, PA. "Studying the Nesting Ecology of Acadian Flycatchers (*Empidonax virescens*) in Eastern Hemlock: the Importance of a Banding Approach."*Jim Sheehan*.

11. Partners-In-Flight, March 2002, Pacific Grove, California. "Acadian Flycatcher Productivity and Habitat Selection in Relation to Hemlock Woolly Adelgid Infestations in the Delaware Water Gap National Recreation Area." *Jim Sheehan.*

12. Pennsylvania Academy of Science, Pocono Manor, Swiftwater, PA, April 5-7, 2002. "The Breeding Biology of Acadian Flycatchers in Eastern Hemlock/Hardwood Mesohabitat. *Jim Sheehan.*

13. Pennsylvania Academy of Science, Reading, PA, April 16-17, 2000. "Productivity of the Louisiana Waterthrush (*Seiurus motacilla*) on Pristine and Impacted Streams." *Krystal Geyer.*

14. Pennsylvania Academy of Science, Reading, PA, April 16-17, 2000. "Foraging Behavior and Efficiency of the Louisiana Waterthrush (*Seiurus motacilla*) on Pristine and Impacted Streams." *Gregory George.*

15. Nat'l. Conf. on Undergrad. Res. Conf., Missoula, MT., April 27-29, 2000. "Foraging Behavior of the Louisiana Waterthrush on Pristine and Impacted Streams." *Gregory George.*

16. Pennsylvania Academy of Science, Pocono Manor, PA, April 9-11, 1999. "Louisiana Waterthrush Nesting Success on Pristine and Impacted Streams." *Lara Gooding.*

17. Pennsylvania Academy of Science, Pocono Manor, PA, April 9-11, 1999. "Foraging Success of the Great Blue Heron." Bill Hobbs.

18. Waterbird Society, Grado, Italy, November 8 - 14, 1999. "Estimating the Size of a Heronry Based on Direct and Indirect Information." *Heather Wallace.*

E. Student Presentations Supervised–Undergraduate

1. <u>Nat'l. Conf. on Undergrad Research,</u> Lexington, VA, Recognition of Microhabitat Features and Imlications for Territorial Economics in the Sheepshead Minnow (*Cyprinodon variegates*), *Karena Lloyd-Knight*.

2. <u>Nat'l. Conf. on Undergrad. Research,</u> Indianapolis, IN, April 15-17, 2004. "Allocation of Parental Care in Acadian Flycatchers." *Dolly Lesniak and Errin Shoop.*

3. <u>Nat'l. Conf. on Undergrad. Research,</u> Indianapolis, IN, April 15-17, 2004. "Caching Behavior in Red-headed Woodpeckers." *Lloyd Lisk*.

4. <u>Nat'l. Conf. on Undergrad. Research,</u> Lexington, KY, March 15-17, 2001. "The Effects of "Dear Enemy" Recognition on Defense Priorities in the Sheepshead Minnow (*Cyprinodon variegatus*): Neighbors vs. Intruders." *Becki Rigo.*

5. <u>Nat'l. Conf. on Undergrad. Res. Conf.,</u> Rochester, NY., April 27-29, 2000. "Foraging Behavior of Groove-billed Anis." *Katie Anderson, Behrend College*, participant in LaSuerte class in Costa Rica.

6. <u>Nat'l. Conf. on Undergrad. Res. Conf.,</u> Missoula, MT, 1999. "Social Facilitation and Foraging Success in the Groove-billed Ani. *Lori Hurley (NC State-Asheville), Katie Anderson and Lori Holtz.* Participants in LaSuerte class in Costa Rica.

F. Conferences & Symposiums Hosted

1. Host and co-organizer, Pennsylvania Society for Ornithology meeting held in the Moore Biology Hall on May 19-21, 2002.

2. Co-organized Riparian Passerine Symposium at the November 2000 Waterbird meeting in Plymouth, MA.

G. Other Professional Activities

1. Councilor, Waterbird Society, 1997-2000.

2. Pennsylvania Ornithological Technical Committee, 1984-present

3. Co-reviewer of the Biology Program at Richard Stockton College, Pomona, NJ, April 8 & 9, 2002.

4. Reviewer for Condor, Wilson Bulletin and Waterbirds.

VI. <u>COMMUNITY SERVICE</u>

A. University Wide Committees

1. Dean of the Graduate School Search Committee

2. Undergraduate Research and Creative Activities Committee, chair, 1998-2005.

B. Departmental Committees

1. Chair, mammalogist search committee, 2001-2002.

2. Co-chair, Marine Science Coord. search committee, 2002-2003.

3. Chair, departmental 5 year evaluation committee, 2002.

4. Chair, dept. natural history museum committee, 2000-present

5. Chair, departmental tenure committee, 1998-1999.

C. Popular Articles

1. PA Academy of Science Lehigh Valley Audubon Society Newsletters.

D. Presentations

1. Friends of the Delaware Water Gap National Recreation Area, "Birds of Successional Habitats in the Delaware Water Gap National Recreation Area," June, 2006.

2. Friends of Friday, Dept. of Biological Sciences, "Costa Rica from Sea to Summit." Fall 2002.

3. Powdermill Nature Reserve, Carnegie Museum of Natural History. "The Savage and Serene Savannas of East Africa." October 27, 2002.

4. Powdermill Nature Reserve, Carnegie Museum of Natural History. "Costa Rica from Sea to Summit." March 3, 2002.

5. Nightshift Staff Development Meeting, ESU. "East African Mammals and Birds." Sept. 17, 1999.

6. Monroe County Public Library, presentation on bird identification, January 30,1999.

7. Golden Kiwanis Club of Stroudsburg, "East African Mammals and Birds." February 26, 1999.

E. Natural History Tour Organizer/Guide

1. Kenya-Tanzania, August 1998 / Tanzania, August 2000 / Ecuador & the Galapagos Islands, January 2002/Kenya-Tanzania 2004/05.

F. Local Government

1. Member, Monroe County Open Space Advisory Board

Robert A. Hamilton

August 22, 2007

Memorandum

To: Andi Culbertson

Subject: Great Blue Heron Nesting Trees as Environmentally Sensitive Habitat Areas

At your request, this memorandum provides my review of issues related to whether landscape trees at Marina del Rey used for nesting by Great Blue Herons warrant designation as Environmentally Sensitive Habitat Areas (ESHA) under the California Coastal Act.

Regulatory Status of the Great Blue Heron

The Great Blue Heron is not listed as threatened or endangered, or as California Species of Special Concern, but the State of California's Natural Diversity Data Base (CNDDB) designates it a "California Special Animal," a general term that refers to all of the taxa the CNDDB is interested in tracking regardless of their legal or protection status. California Special Animals generally fall into one or more of the following categories:

- Officially listed or proposed for listing under the State and/or Federal Endangered Species Acts.
- State or Federal candidate for possible listing.
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines.
- Taxa considered by the Department to be a Species of Special Concern.
- Taxa that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.
- Populations in California that may be on the periphery of a taxon's range, but are threatened with extirpation in California.
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, vernal pools, etc.)
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or non-governmental organization.

Great Blue Herons generally nest in colonies, a life-history trait that can make a species more vulnerable to catastrophic disturbances, and so the species may be considered to have a "critical, vulnerable stage in [its] life cycle that warrants monitoring."

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Nesting Trees as Potential ESHA

Section 30107.5 of the California Coastal Act defines an "environmentally sensitive area" as follows:

> . . . any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

The Marina del Rey Land Use Plan (a component of the Los Angeles County Local Coastal Program) does not designate any environmentally sensitive habitats at Marina del Rey, and the Great Blue Heron is not designated by any governmental agency as rare, threatened, endangered, Fully Protected, or Species of Special Concern. Nevertheless, the criteria given in Section 30107.5 are sufficiently broad that the CCC must determine whether trees that have been used for nesting by Great Blue Herons should be designated as environmentally sensitive areas or ESHA[1].

In a memorandum dated 19 December 2006, Dr. Jonna Engel of the CCC argued that several stands of non-native trees that support multi-species heronries in Marina del Rey should be regarded as ESHA. In support of this position, her memorandum at Page 2 states that "herons and egrets experienced severe population declines at the turn of the 20th century when they were hunted for their beautiful plumage," and that "only recently have herons and egrets been consistently roosting and nesting again in Southern California and they are still considered uncommon breeders in this region." Whereas the historical status of herons and egrets in southern California is poorly documented, there is little doubt that plume hunting substantially reduced regional numbers of the Great Egret (*Ardea alba*) and Snowy Egret (*Egretta thula*) during the late 1800s (e.g., J. Grinnell. 1898. *Birds of the Pacific Slope of Los Angeles County*. Pasadena Academy of Sciences No. 2). A review of the published literature, however, yields no evidence that plume hunting played an important role in historical declines of herons in coastal southern California.

Published accounts suggest that some herons and egrets, including the Great Blue Heron, may have experienced regional population declines during the past century resulting from factors such as pesticide poisoning and habitat loss/modification, but this does not mean that these species formerly bred much more commonly in the region or in Los Angeles County. In fact, referring to Great Blue Herons on the coastal slope of Los Angeles County, Grinnell (1898) wrote, "Breeds sparingly in the county." The only colony then known to exist in the county (excluding a few areas that later were incorporated into Orange County) was "in a grove of sycamores north of Santa Monica," where 35 nesting pairs in 1895 had dwindled to six pairs in 1897. Dr. Froke's *Marina del Rey Heronry Report for 2005-2006* summarized what is known of the species' historical breeding status in the Ballona Valley:

> This heron's historical breeding status is unknown, but it was only a transient and winter visitor by the 1920s (e.g., Bird-Lore 26:347), and breeding was not mentioned by von Bloeker (1943), who considered it "frequently observed in the meadow area

[1] The Coastal Act seems to use the terms "environmentally sensitive area" and ESHA interchangeably.

> and in the salt marsh," nor was it mentioned as a breeder on subsequent surveys (e.g., Dock and Schreiber 1981[1]; Corey 1992[2]).

Oology, the collection and study of eggs, played a primary role in the science of ornithology during the nineteenth and early twentieth centuries, and it is very likely that ornithologists of the day would have been well aware of any substantial nesting colonies of a bird as large and conspicuous as the Great Blue Heron. Page 3 of Dr. Engel's memorandum states, "while heron and egret populations as a whole are no longer threatened, in Southern California their populations are only recently recovering and breeding colonies are uncommon." Great Blue Herons may be fairly characterized as "uncommon" breeders in the region, but there is no documented foundation for the notion that Great Blue Herons are "recovering" to a more common breeding status that was formerly maintained along the coast of Los Angeles County. With regard to coastal southern California as a whole, my review of the literature leads me to conclude that Great Blue Herons are at least as widespread and abundant now as they were at any time during the twentieth century.

Dr. Engel's memorandum at Page 4 reviews how herons and egrets have adapted to roosting and nesting around harbors and other highly developed areas in the region, where tall, dense non-native trees provide proximity to hunting areas and protection from predators. That the birds have adapted to human presence is beyond dispute, but at mid-paragraph the following statement is made: "While these non-native trees are not rare, stands of trees exhibiting the attributes listed above, are rare in Los Angeles County. Thus, the habitat afforded by the trees is rare." A similar claim appears on Page 5: "While other non-native tree stands exist in Marina del Rey, they do not provide the necessary roosting and nesting tree stand attributes." These statements imply that herons and egrets in Marina del Rey can potentially nest in only a select number of trees with special attributes, a position contradicted by Director Broddrick of the California Department of Fish & Game (CDFG)[3]:

> Cypress are non-native trees which have come to serve only recently as habitat for these birds [nesting along Fiji Way]. The birds actually originated in Ballona, and the trees that were their primary roosting and nesting habitat still exist. If the current Cypress trees are removed, our habitat specialists are confident that the birds will recruit to the original area or use nesting habitat at your offices, which is not proposed for removal. Therefore, we believe that there is no impact to these colonial nesters.

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[1]Dock, C. F., and Schreiber, R. W. 1981. *The Birds of Ballona*. *in* R.W. Schreiber, ed. 1981. *The Biota of the Ballona Region, Los Angeles County* (Supplement I of Marina del Rey/Ballona Local Coastal Plan). Los Angeles County Natural History Museum Foundation.

[2]Corey, K. A. 1992. Bird survey of Ballona wetland, Playa del Rey, CA 1990-1991. Unpubl. report (30 April).

[3]Letter dated 25 October 2006 from CDFG Director L. Ryan Broddrick to Stan Wisniewski of the County of Los Angeles.

Given that many trees in Marina del Rey appear to be large enough and close enough to foraging areas to potentially support nesting Great Blue Herons, I doubt that the number of nesting pairs is limited by the availability of appropriate nesting substrates. More likely factors include prey availability and the general preference of Great Blue Herons to nest in less intensively developed settings.

Dr. Froke's recent studies of heron and egret nesting at Marina del Rey and other areas in coastal southern California have demonstrated that some suitable nesting substrates may be used year after year by large numbers of herons and/or egrets while others may be used only once or periodically, often by only one to a few pairs of birds. In Marina del Rey in recent years, a handful of Great Blue Herons have nested in Monterey Cypresses (*Cupressus macrocarpus*), Monterey Pines (*Pinus radiata*), and Mexican Fan Palms (*Washingtonia robusta*) on the south side of the marina. Since 2004 the birds have used a stand of three cypresses near the Coast Guard station every year of Dr. Froke's study, but the build-up of heron guano has killed one of these trees and seriously weakened another. When such trees die and topple over, it is likely that the birds simply move to other tall trees or other suitable nesting substrates in the local area. This topic is discussed on Page 13.3 of the *Marina del Rey Heronry Report for 2005-2006*, and Pages 8.9 through 8.16 list six case studies from across the United States in which Great Blue Herons readily adopted artificial nest structures. The propensity for Great Blue Herons to kill their own nesting trees, and to move around and occupy different nesting substrates in a given area, both argue against identifying as an ESHA every tree ever occupied by the species.

Section 30107.5 of the California Coastal Act asks that we consider whether these species or their habitats (a) should be regarded as "especially valuable because of their special nature or role in an ecosystem" and (b) "could be easily disturbed or degraded by human activities and developments." Note that both of these criteria must be satisfied before an area meets the Coastal Act's definition of an "environmentally sensitive area."

As a species native to the region, the Great Blue Heron fulfills an integral ecological role in southern California's coastal wetland ecosystems, but should this role be regarded as "especially valuable" in all places and at all times? Both CDFG and the U.S. Fish and Wildlife Service have urged restraint in providing heron nesting platforms at Marina del Rey since Great Blues are predators that represent a legitimate threat to eggs and young of two endangered species that nest in the local area, the Snowy Plover (*Charadrius alexandrinus*) and the California Least Tern (*Sterna antillarum browni*). In his letter of 25 October 2006, CDFG Director Broddrick stated:

> I note that the California Coastal Commission staff have recently taken a position that the Great Blue Herons are "top predators" and therefore necessary to the health of the wetlands. We are committed to a restoration plan that will provide the most sustainable biodiversity we can reclaim from this degraded landscape. However, until a healthier ecosystem can be established the blue heron has to be recognized as a potentially significant stressor to the species viability of the Area A wetland.

I believe that Dr. Engel's memorandum overstates the case that Great Blue Herons satisfy the Coastal Act's criterion that a species or its habitat be "especially valuable because of their special nature or role." The quotation above from Director Broddrick indicates that the CDFG—the state agency directly responsible for restoring the Ballona Ecological Reserve—regards these herons as a potential threat to the recovering ecosystem's health. In my opinion, the herons play an integral role in the local ecosystem but not one that ecologists should regard as "especially valuable" (i.e., more valuable than the role of any other species native to the region).

The second main criterion of Section 30107.5 concerns the relative likelihood that human activities and developments will disturb or degrade herons or their nesting sites. On this question the evidence is overwhelming that Snowy Egrets, Great Blue Herons, and Black-crowned Night-Herons that nest in coastal southern California are highly tolerant of all kinds of human activities. In San Diego County, Unitt (2004) noted that "All the major [Black-crowned Night-Heron] colonies are in planted trees in areas heavily used by people," and he described this species as "surprisingly indifferent to people, especially when foraging at night." The same general pattern of herons and egrets tending to nest close to human population centers holds true across coastal southern California, including Marina del Rey (see, for example, Daniel S. Cooper's extensive list of known heron/egret rookeries in southwestern California, 1996–2006; http://www.cooperecological.com/cem_i_042.htm). Humans can and occasionally do disturb nesting egrets and herons through such overt and invasive actions as tree-trimming during the nesting season, but I am not aware of any case in which egrets or herons in coastal southern California have abandoned a colony during the nesting season as the result of normal, routine human activity that was ongoing at the time nesting commenced. Keane Biological Consulting[1] recently reported the following with regard to Great Blue Herons nesting at Marina del Rey:

> Dredging activities observed in February 2003 within 200 feet of heron nests located in pine trees west of the U.S. Coast Guard Station did not result in visible disturbances or nest abandonment.

Dr. Engel discusses disturbance of herons and egrets on Page 6 of her memorandum:

> Herons and egrets are normally shy and retiring birds that are sensitive to human disturbance. The fact that they have established roosting and nesting sites in areas of high human density and disturbance suggests that suitable roosting and nesting areas are scarce and they have miraculously adapted in spite of human disturbance. Herons do habituate to non-threatening repeated activities, which explains the location of Southern California heronries in highly disturbed areas. Even so, most studies recommend a minimum 984 feet buffer zone from the periphery of a colony in which no human activity should take place during courtship and nesting season[2].

Where attractive foraging opportunities exist it is predictable that a variety of bird species will eventually adapt to benign human presence in order to exploit those opportunities.

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[1] Keane Biological Consulting. 2007. Terrestrial Biological Survey Report and Impact Analysis, Fisherman's Village Dock and Marina Project, Marina Del Rey, Los Angeles, California. February 27th, 2007 Field Survey. Revised report dated 19 July 2007 prepared for Coastal Resources Management, Inc.

[2] Butler, R. W. 1992. Great Blue Heron. *In* The Birds of North America, No. 25 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.

There is nothing "miraculous" about this process of habituation. The birds' selection of certain nesting and roosting trees in urban Marina del Rey appears to be related mainly to the proximity of those trees to productive foraging areas and perhaps protection from strong winds. A preference for relatively undisturbed areas probably prevents some herons and egrets from choosing to nest in a busy area such as Marina del Rey, but one must expect that birds choosing to nest in an urban landscape will be less sensitive to human activity compared with members of the same species that choose to nest in remote areas.

Following is Dr. Engel's statement regarding buffer zones, from the original source (Butler 1992):

> Most studies [of Great Blue Herons] recommend a minimum 300 m buffer zone from the periphery of colonies in which no human activity should take place during courtship and nesting seasons, with the exception of scientific study . . . however, the most easily disturbed herons left nests in a colony in British Columbia when [the author] approached on foot within 200 m early in the season.

The three authors cited by Butler (1992) in this regard each studied colonies set in wild landscapes with infrequent human presence and intrusion. Therefore, human activity near the nesting herons was more of a contrasting activity to what the birds were used to, versus the ordinary situation in the vicinity of urban colonies. The establishment of a 300-meter buffer zone would make no sense in an area such as Marina del Rey, where the birds have chosen to nest in developed areas subject to constant and conspicuous human presence. Note also that Butler (1992) also cited three studies demonstrating that Great Blue Herons "habituate to non-threatening repeated activities." During the 15 years since Butler's species account was published, it has been established conclusively that many Great Blue Herons (and Snowy Egrets and Black-crowned Night-Herons) in coastal southern California have become habituated to various types of routine human activities (e.g., walking, biking, driving) beneath and around their nesting trees.

As a final exercise, consider that a hypothetical tree in an urban area presumably would not be a candidate for ESHA designation unless it had been selected for use by nesting or roosting herons or egrets. Once such selection had taken place, it would be incumbent upon the California Coastal Commission to determine whether the criteria in Section 30107.5 of the Coastal Act were satisfied. Even allowing that some ecologists may regard these birds as being "especially valuable because of their special nature or role in an ecosystem," the evidence collected by Dr. Froke, Keane Biological Consulting, and others studying urban heronries in coastal southern California clearly does not support a finding that such trees "could be easily disturbed or degraded by human activities and developments." Naturally, it is *possible* for humans to disturb the birds or to degrade their habitats in any number of ways (e.g., through inappropriate or ill-timed pruning of trees), but mounting evidence shows that herons and egrets that choose to nest in southern California's urban environments are thoroughly habituated to the normal, routine human activities that take place daily beneath their nesting and roosting trees. If the birds were "easily disturbed" they would not return to Marina del Rey year after year to successfully raise young in the urban landscape with no "buffer zones" whatsoever.

For the reasons detailed herein, I believe it would be a mistake to interpret Section 30107.5 of the Coastal Act in such a way that every landscape tree ever used by a nesting heron or egret in California would be designated as an "environmentally sensitive area" or ESHA. Such a designation could be appropriate for certain large, permanent nesting colonies of herons and egrets that have become established in a limited number of groves of non-native trees in the region, but in most cases that involve small numbers of nesting birds I believe that designation of an "environmentally sensitive area" or ESHA would be unjustified.

If you have any questions or comments regarding this memorandum, please call me at 562-477-2181 or send e-mail to robb@rahamilton.com.

Appendix E6
Eelgrass and Invasive Algae Survey and Impact Assessment for the Proposed Boat Central Water-Side Facilities dated May 8, 2007, prepared by Rick Ware of Coastal Resources Management, Inc.

EELGRASS AND INVASIVE ALGAE SURVEY
AND IMPACT ASSESSMENT
FOR THE PROPOSED
BOAT CENTRAL WATER-SIDE FACILITIES
MARINA DEL REY, LOS ANGELES, CALIFORNIA

October 17, 2006 SURVEY

Prepared for:
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May 8th, 2007

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1.0 INTRODUCTION

1.1 PROJECT PURPOSE

Coastal Resources Management, Inc. (CRM) conducted a pre-construction marine biological resources survey in Marina del Rey, Los Angeles, California on October 17th, 2006. The purposes of the investigation were to determine if (1) eelgrass (*Zostera marina*) and invasive algae (*Caulerpa taxifolia*) were present in the vicinity of a proposed dry-boat storage facility and dock system and (2) assess the potential environmental effects of construction and long-term operation of the facilities on these two species or other sensitive marine species occurring within the project area.

.

Project Background and Location

Marina del Rey is located in Santa Monica Bay, California, south of Venice and north of Playa del Rey (Figure 1). It is approximately 24 kilometers (14.9 mi) southwest of downtown Los Angeles. Constructed in 1960 from part of the Ballona Wetlands and the former Lake Los Angeles, Marina del Rey encompasses approximately 354 acres and has a capacity to accommodate more than 6,000 private watercraft. The marina is protected at its entrance by two jetties and a detached breakwall, and is adjacent to the downcoast Ballona Creek Flood Control Channel. Marina del Rey is divided into eight basins, A through H.

The Boat Central Project (The Project) will be located on the 4.25 acre leasehold (encompassing land & water areas) composed of Parcels 52 & GG along Fiji Way at the eastern end of Basin H, near the Harbor Patrol Facilities and the public launch ramp (Figures 2 and 3). The Project could accommodate up to a maximum of 388 boats and 24 boat trailers within the dry-stack building and outside parking for 30 mast-up sail boats and a public waterside hoist. Boat Central was designed to be sensitive to and enhance the marina environment in which it is set, as such The Project will use translucent polycarbonate as the primary architectural cladding. This material has several benefits, foremost is its ability to allow daylight to penetrate through the structure to the water's surface while providing a safe workplace with minimal electrical load. The boats will be delivered dockside upon reservation/request, fully fueled with the boaters option to order necessary supplies including food and drinks. A public boat washdown facility will also be incorporated on-site. The Project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two story visitor building has a gross floor area of 3080 square feet and will house the Project office. The Project will incorporate the existing Sheriff's boatwright shop in a new two story building (2850 square foot building footprint with a 500 square foot second floor mezzanine) with an adjacent 2,200 square foot fence yard. The Sheriff's boat dock will remain. The other existing public uses including the temporary office space and temporary parking for charter fishing tours, will

Figure 1. Base Plan & Location Map

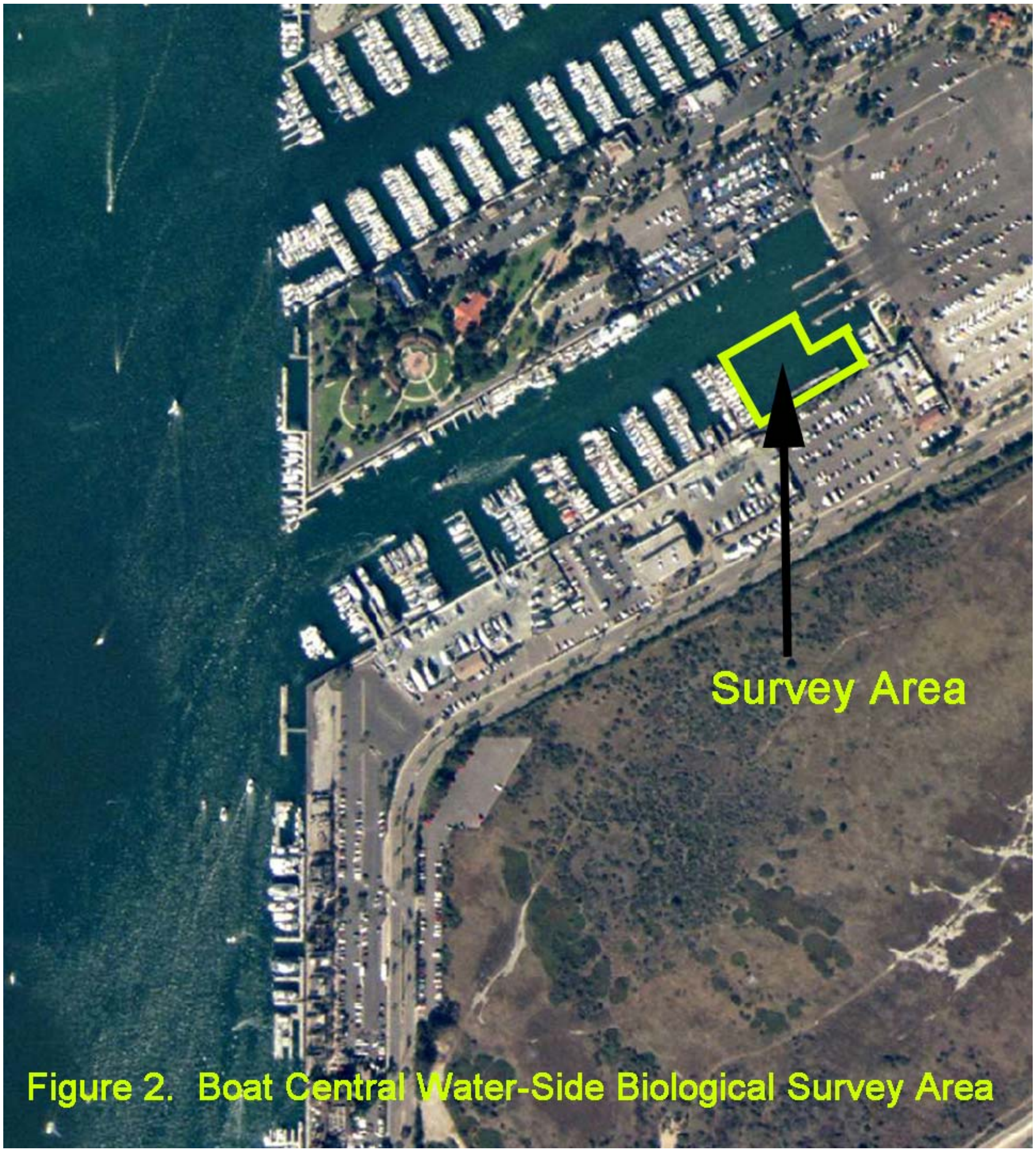

Figure 2. Boat Central Water-Side Biological Survey Area

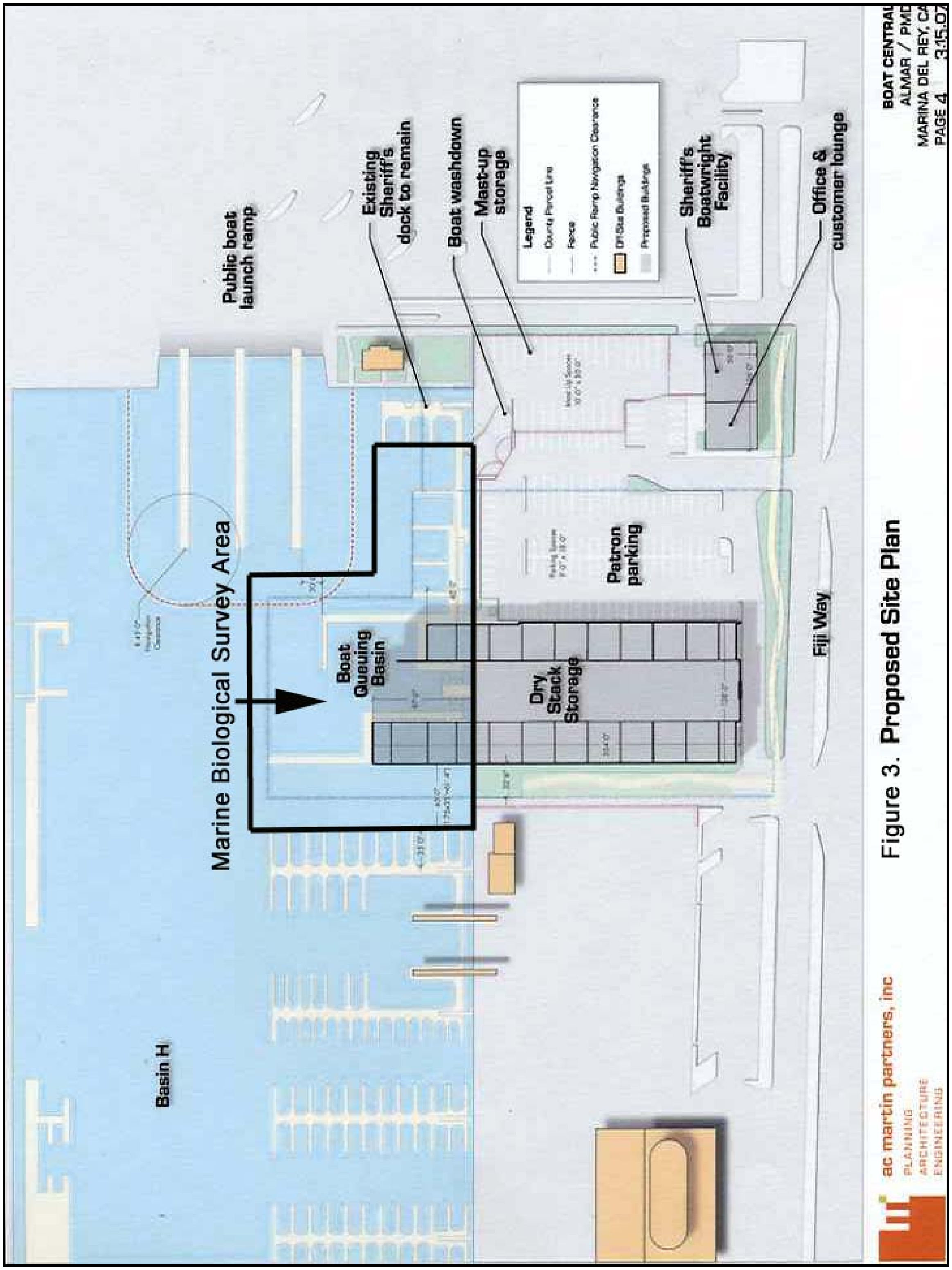

Figure 3. Proposed Site Plan

be relocated by the Department of Beaches & Harbors. No wet slip spaces are proposed for permanent, individual dock slips, as the dock facilities will be reserved for the queuing (preparation of boats) of boats scheduled for use.

1.2 IMPORTANCE OF EELGRASS

Eelgrass (Figure 4) is a marine flowering plant that grows in soft sediments in coastal bays and estuaries, and occasionally offshore to depths of 50 feet (ft). Eelgrass canopy (consisting of shoots and leaves added vegetation and the vertical relief it provides enhances the abundance and the diversity approximately two to three ft long attracts many marine invertebrates and fishes and the of the marine life compared to areas where the sediments are barren. A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) live on eelgrass or within the soft sediments that cover the root and rhizome mass system. MBC Applied Environmental Sciences (1986) identified a total of 97 species of invertebrates associated with Sunset Bay, Huntington Harbour, and Mission Bay eelgrass blades and shoots. Another 216 taxa were found living among the roots and sediment. The vegetation also serves a nursery function for many juvenile fishes, including species of commercial and/or sports fish value (California halibut and barred sand bass). Eelgrass meadows are critical foraging centers for seabirds (such as the endangered California least tern) that seek out baitfish (i.e., juvenile topsmelt) attracted to the eelgrass cover. Lastly, eelgrass is an important contributor to the detrital (decaying organic) food web of bays as the decaying plant material is consumed by many benthic invertebrates (such as polychaete worms) and reduced to primary nutrients by bacteria.

Figure 4. Eelgrass, *Zostera marina*. One “shoot” and the cluster of “blades” arising from the shoot is considered a “turion unit”.

Because of the high ecological value of eelgrass meadows, it is important to document the location and amount of eelgrass in areas of proposed waterside developments and to mitigate any losses by avoiding or reducing, or compensating for any adverse effects on eelgrass habitats and communities.

1.4 IMPORTANCE OF INVASIVE ALGAE, *CAULERPA TAXIFOLIA*

The invasive algae *Caulerpa taxifolia* (Figure 5) has a potential to cause ecosystem-level impacts on California's bays and nearshore systems due to its extreme ability to out-compete other algae and seagrasses. *Caulerpa taxifolia* grows as a dense smothering blanket, covering and killing all native aquatic vegetation in its path when introduced in a non-native marine habitat. Fish, invertebrates, marine mammals, and sea birds that are dependent on native marine vegetation are displaced or die off from the areas where they once thrived. It is a tropical-subtropical species that is used in aquariums. It was introduced into southern California in 2000 (Agua Hedionda Lagoon) and (Huntington Harbour) by way of individuals likely dumping their aquaria waters into storm drains, or directly into the lagoons. While outbreaks have been contained, the Water Resources Board, through the National Marine Fisheries Service and the California Department of Fish and Game require that projects that have potential to spread this species through dredging, and bottom-disturbing activities conduct pre-construction surveys to determine if this species is presence using standard agency-approved protocols and by National Marine Fisheries Service/California Department of Fish and Game Certified Field Surveyors.

Figure 5. The invasive algae, *Caulerpa taxifolia*. Source: NOAA/NMFS

2.0 FIELD SURVEY METHODS

Eelgrass and *Caulerpa* surveys were conducted by CRM Senior Marine Biologist Rick Ware and Technician Lein Jenkins on October 17th, 2006 between 1030 and 1300 hrs. Surveys were conducted from a 14 foot inflatable vessel.

Underwater surveys were conducted within the Basin H project location using SCUBA. Surface support personnel were in communication with the diving-biologist using an Offshore Technology Systems, Inc. underwater communication system. Surveys were conducted in accordance with both the *Southern California Eelgrass Mitigation Policy* (National Marine Fisheries Service 1991 as amended) and the *Caulerpa Control Protocol* (National Marine Fisheries Service, Version 2.1, March 2006).

A total of twenty-eight 230-foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals. Bottom type, common marine life, and the presence or absence of eelgrass and invasive algae were recorded. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Santa Monica Pier tidal survey station.

<u>Caulerpa Survey Protocols.</u> Marina del Rey is considered a "non-infected" system and requires a "surveillance level" monitoring effort for the presence of *Caulerpa.* The following information is extracted from the National Marine Service *Caulerpa Control Protocol* in regards to the level of survey effort required.

1) *Surveillance Level* – General survey coverage providing a systematic sub-sampling of the entire APE during which at least 20% of the bottom is inspected and widespread occurrences of *Caulerpa* would be expected to be identified if present. Surveys may be accomplished using diver transects, remote cameras, and acoustic surveys with visual ground truthing. Other proposed methodologies may be approved on a case-by-case basis by NOAA Fisheries and CDFG.

A separate project report was prepared for this species and is included in Appendix A of this report.

3.0 SURVEY RESULTS

The area within the marine biological project limits encompassed a total of 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 4 ft (2 ft on each side of the center line the diver followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 43.6 % of the total bayfloor habitat within the project limits.

3.1 PHYSICAL ENVIRONMENT

The survey was conducted at depths between the top of the rip rap during a +3 ft high tide along the seawall and a maximum depth of -9 ft MLLW, 70 meters seaward from the bulkhead. Substrate types within the survey area included cement seawall, rock rip rap, and unconsolidated sand-to-silty sediments beyond the rip rap. Sediments contained a greater proportion of silts with increasing distance into the channel, near the launch ramp docks. Underwater visibility was low-to-moderate and averaged 0.6 meter (2 ft) on each side of the transect center line. Water temperature was 66 degrees Fahrenheit. Tidal currents were minimal during the survey.

3.2 EELGRASS

Eelgrass was not present in the project area. The only location where seagrass has been reported in past Marina del Rey surveys is in Basin D at "Baby Beach", where ditchgrass (*Ruppia maritima*) is reported to occur.

To date, no records of eelgrass (*Zostera marina*), the common seagrass of southern California are known from Marina del Rey. However, ditchgrass (*Ruppia maritima*) occurs within Basin D (Mother's Beach), and has occurred irregularly since 1979 (Soule and Oguri 1993; Soule et al. 1997). This is an uncommon seagrass species found in quiet water habitats that is an important habitat for larval and adult fish. Coastal Resources Management, Inc conducted site-specific eelgrass surveys in Marine del Rey in May 2006 and December 2006 at 22 sites throughout the harbor for the County of Los Angeles Phase 1 Seawall Repair Project (CRM 2006a, 2007a), in Basin B (CRM 2006b), along the south jetty in front of the Villa Venetia Apartment Complex (CRM 2006c) and in front of Fisherman's Village (CRM 2007b). No eelgrass was found at any of these locations.

3.3 *CAULERPA TAXIFOLIA*

No invasive algae was located in the project area, nor has it been observed within the Marina del Rey Harbor ecosystem to date. The total survey area (Area of Potential Effect, or the APE) was 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 4 ft (2 ft on each side of the center line that the biologists followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 43.5 % of the total APE bayfloor habitat within the project limits. A minimum of 20% coverage is required for non-infected systems such as Marina del Rey Harbor. The invasive algae reporting form, submitted to the National Marine Fisheries Service and the California Department of Fish and Game is provided in Appendix A.

3.4 OTHER MARINE FLORA AND FAUNA OBSERVED DURING THE SURVEY

The diversity of marine life observed during the field survey was low. The brown algae *Sargassum muticum* was the most common algae observed growing on the rip rap against the bulkhead. Invertebrates and fishes observed within the project area included burrowing anemones (*Pachycerianthus fimbriatus*), predatory sea slugs (*Navanax inermis*), mussels (*Mytilus galloprovincialis*), unid perch (Embiocidae, unid.), and round sting ray (*Urolophus halleri*).

3.5 OTHER SENSITIVE MARINE SPECIES POTENTIALLY PRESENT IN THE PROECT AREA

Tidewater Goby

The Tidewater Goby (*Eucyclogobius newberryi*) is a Federally-listed endangered species that has been expatriated from many southern California creek mouths. It is currently found in shallow marine areas and lower reaches of streams between San Diego northward to Humboldt County waters where salinity is less than 10 ppt. The population of Tidewater Goby is depleted due to reduced or eliminated flows in the lower reaches of coastal streams, pollution, and the filling in, channelization, and other physical alterations of their habitats. The population disappeared from about 74 percent of the coastal lagoons from Morro Bay southward to San Diego (U.S. Fish and Wildlife 1994).

This species currently does not occur within Marina del Rey Harbor or the Ballona Channel.

California Halibut

Although it does not have a formal special status, the California halibut (*Paralichthys californicus*) is considered a sensitive species by resource agencies because of its commercial value and a continued region-wide reduction of its nursery habitat in bays and wetlands. California halibut spawn at sea and its larval stages are planktonic. After several months, larval fish settle to the bottom and migrate into shallow coastal waters including embayments such as Marina del Rey Harbor. Young-of-the-Year (YOTY) prefer shallow waters between about -1.5 feet and -3.5 feet MLLW, whereas juveniles prefer deeper channel bottoms to a maximum depth of approximately -15 feet MLLW. After spending nearly nine months in coastal embayments, juveniles move out into the open coastal environment. The species uses inshore waters of bays, harbors, and estuaries as a nursery habitat. California halibut frequent the entrance channel habitat more commonly than farther back in the channels or boat basins. Its potential to be present in the Basin H project area is low.

4.0 IMPACT ASSESSMENT

4.1 PROPOSED PROJECT ELEMENTS

The water-side portion of the Boat Central project includes the construction and operation of a variable-configured boat dock (Figure 3). The dock will be accessed via a pile-supported platform and an ADA accessible ramp to be jointly used by Boat Central customers as well as the Sheriff's Department employees. The system will include (1) a boat queuing basin and a dock system consisting of seven finger piers for tenants to use as temporary tie up when departing and returning to the facility. No wet slip spaces are proposed as the dock facilities will be reserved for the queuing of boats scheduled for use.

The approximate surface area of the existing dock and ramp at the project site is 1,690 sq ft. Fourteen, 16-inch diameter piles (19.5 sq ft of surface area) support the dock and ramp.

Based on preliminary dock surface area calculations made by CRM, the total surface area of the proposed dock queuing system is 7,259 sq ft sq ft. The surface area of the proposed thirty, 16-inch diameter piles is 50.7 sq ft.

4.2 PROPOSED CONSTRUCTION METHODS (Source: Bellingham Marine, Inc.)

Building Materials

The building materials associated in this project are associated with the new floating dock system and the limited new piles to be driven in place. The new floating docks system will consist of prefabricated, lightweight aggregate concrete modules. Expanded polystyrene flotation is completely encased in a reinforced concrete shell, which is impervious to marine borers. Flotation absorption is minimal (up to 3% by volume which meets ASTM C-272). Concrete encasement on all six sides provides maximum strength and protection. Galvanized steel rods pass through conduits cast into the Unifloat(R) units and are fitted with nuts and special washers on each end. Galvanized steel frames are included to provide high-strength connections at the critical joints between finger piers and mainwalks. Galvanized iron cleats, fiberglass locker boxes, marine-grade Medium Density Polymer (MDPE) used on triangle frames, stainless steel substations, Ultra High Molecular Weight (UHMW) pads, and marine-grade vinyl fendering are included in the project. No creosote treated wood products are included in this new concrete dock.

Construction Details

The proposed marina project includes installation of the new concrete floating dock system, pile-driving and installation of new utilities. If applicable, demolition will occur be removing sections of existing docks and removing them by crane onto trucks. These existing floating docks will be disposed off-site at a legal disposal site such as Puente

Hills Landfill in Whittier, CA. New floating dock sections will be delivered by truck and offloaded by crane into the water. These new floating docks will be towed with a small skiff to their final location. Approximately 30 pre-stressed concrete 16 inch square concrete pilings (will emplaced to support the dock system. New piles will be driven through openings in the floating docks to anchor them sufficiently. Pile driving will be accomplished with a crane located on a floating barge. The methodology of pile installation is a combination of jetting and driving. Piles will be jetted in place, through the floating dock system, and the last 5 of each guide pile will be driven to their final tip elevation. The methodology of pile removal will be accomplished with the crane and floating barge as well. In all pile-driving locations, turbidity screens/siltation curtains will be utilized around each piling to be driven or removed to assist in isolating the work area from potential water quality impacts related to construction.

Project Timing

Dock installation and pile-driving should take no more than 3 months, and would likely be conducted in the fall/winter season.

4.3 IMPACTS ON WATER QUALITY

Pile installation using pile driving and hydraulic jetting methods will result in a temporary increase of suspended sediments, a temporary reduction in submarine light levels, and a potential to decrease dissolved oxygen levels in areas where the sediments are anoxic. Turbidity may also increase if prop wash stirs up bottom sediments or if vessels deploy and retrieve anchors. These impacts will result in a short-term impact on water quality that can be mitigated by employing Best Management Practices (BMPs) to reduce the potential for the spread of turbid waters outside the construction zone. See Section 5 for Best Management Practices.

4.4 SHADING ISSUES

The existing 1,690 sq ft dock and ramp system will be replaced by a 7,259 sq ft ramp and dock system. This will result in the shading of an additional 5,569 sq ft of open water habitat in Basin H.

4.5 IMPACTS ON SOFT BOTTOM BENTHIC HABITAT

Thirty, 16-inch guide piles will replace 14 existing piles. The increase in the number of guide piles will result in a net decrease of 31.2 sq ft of soft bottom benthic habitat. The soft bottom habitat will be replaced by hard substrate in the form of cement structure that will support hard-substrate associated organisms such as those currently found on the rock rip rap and piles in the project area.

4.6 IMPACTS ON SENSITIVE MARINE RESOURCES

Eelgrass

There is no eelgrass at the project site, therefore there will be no short-or-long term impacts on eelgrass related to water quality, loss of habitat through pile installation/removal, or shading.

Caulerpa taxifolia

No *Caulerpa* is present within the project area which precludes the potential spread of this species during construction and/or the operation of the facilities.

Tide Water Goby

Tide water gobies are not known from Marina del Rey; no impacts will occur on this species.

California Halibut

Juvenile halibut are known to occur within Marina del Rey, although their occurrence within Basin H are unlikely. However, if they should be present in the project area during pile installation, any juveniles in the immediate area of pile driving activity will swim to areas outside the immediate impacted zone. No mortality or long-term impacts as a result of construction and/or operation of the dock facility are anticipated on this species.

5.0 MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

5.1 WATER QUALITY

During construction, the following mitigation measures and Best Management Practices (BMPs) are recommended to prevent water quality degradation and to reduce potential adverse impacts on marine resources.

- For landside construction activities, straw waddles should be placed around the work area to prevent construction debris and runoff from entering storm drains or into the marina.

- All debris and trash shall be disposed in suitable trash containers on land or on the work barge at the end of each construction day;

- Discharge of any hazardous materials into Marina del Rey will be prohibited; and

- Where feasible, silt curtains should be deployed around the work barge and around the pile removal and emplacement operations to minimize the spread of turbid waters outside the project area.

5.2 EELGRASS

Eelgrass does not occur within the project area. No BMPs or mitigation measures required.

5.3 *CAULERPA TAXIFOLIA*

Caulerpa does not occur within the project area. No BMPs or mitigation measures required.

5.4 TIDEWATER GOBY

No mitigation required.

5.5 CALIFORNIA HALIBUT

To minimize impacts on California halibut, refer to Section 5.1 (Water Quality). These Best Management Practices will minimize any potential impacts on California halibut should halibut be present in the general vicinity of construction.

6.0 LITERATURE CITED

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Coastal Resources Management, Inc. 2006b. Pre-construction eelgrass (*Zostera marina*) and invasive algae survey and impact analysis. Neptune Marina public dock and pump-out facilities, Marina del Rey Harbor, California. October 16th, 2006 survey. Prepared for Legacy Partners Residential, Inc., Irvine CA. 22 pp.

Coastal Resources Management. 2006c. Villa Venetia dock construction project. *Zostera marina* survey, August 14th, 2006. Prepared for Lyon Capital Management.

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National Marine Fisheries Service. 1991 (as amended). *Southern California eelgrass mitigation policy*. 4 pp. Revision 11 (draft), 30 August, 2005.

National Marine Fisheries Service. 2006. *Caulerpa Control Protocol.* http://swr.nmfs.noaa.gov/hcd/caulerpa/ccp.pdf. 7 pp.

APPENDIX A
CAULERPA TAXIFOLIA REPORTING FORM

<u>*Caulerpa taxifolia* Survey Reporting Form</u>

Boat Central Waterside Facilities, Parcel 52B/GG
Basin H, Marina del Rey Boat Harbor
Los Angeles County, California
Survey Date: October 17th, 2006

Prepared by:
Coastal Resources Management, Inc.
PMB 327, 3334 East Coast Highway
Corona del Mar, CA 92625
Contact: Rick Ware, Senior Marine Biologist
(949) 412-9446

Prepared for:

Contact: Roger Van Wert
Allen Matkins Attorneys at Law
515 S. Figueroa St 7th Floor
Los Angeles, CA 90071

This form is required to be submitted for any surveys conducted for the invasive exotic alga *Caulerpa taxifolia* that are required to be conducted under federal or state permits and authorizations issued by the U.S. Army Corps of Engineers or Regional Water Quality Control Boards (Regions 8 & 9). The form has been designed to assist in controlling the costs of reporting while ensuring that the required information necessary to identify and control any potential impacts of the authorized actions on the spread of *Caulerpa*. Surveys required to be conducted for this species are subject to modification through publication of revisions to the *Caulerpa* survey policy. It is incumbent upon the authorized permittee to ensure that survey work is following the latest protocols. For further information on these protocols, please contact: Robert Hoffman, National Marine Fisheries Service (NOAA Fisheries), (562) 980-4043, or William Paznokas, California Department of Fish & Game, (858) 467-4218).

Report Date:	October 27, 2006
Name of bay, estuary, lagoon, or harbor:	Marina Del Rey, Los Angeles, California. See Figure 1.
Specific Location Name:	South Bulkhead, Parcels 52B and GG, Basin H
Site Coordinates: (UTM, Lat./Long., datum, accuracy level, and an electronic survey area map or hard copy of the map **must** be included).	Center of Proposed Waterside Development: 33.97684^0 N; 118.44204^0 W Accuracy: 1 m, WGS 84 See Figure 2 and 3 for the project location
Survey Contact: (name, phone, e-mail)	Rick Ware, Senior Marine Biologist, Coastal Resources Management, Inc. (949) 412-9446, rware.crm@earthlink.net Robert Van Wert Project Manager rvanwert@allenmatkins.com
Personnel Conducting Survey (if other than above): name, phone, email	Mr. Rick Ware and Mr. Lein Jenkins, of Coastal Resources Management, Inc.
Permit Reference: (ACOE Permit No., RWQCB Order or Cert. No.)	RWQCB File No. Pending CCC File No. Pending Army Corps File No. Pending
Is this the first or second survey for this project?	First survey

Was *Caulerpa* Detected?: (if *Caulerpa* is found, please immediately contact NOAA Fisheries or CDFG personnel identified above)	___________________Yes, Caulerpa was found at this site and ____________________has been contacted on __________ date. _________**X X**__________**No, Caulerpa was not found at this site**.

Description of Permitted Work: (describe briefly the work to be conducted at the site under the permits identified above)	The Boat Central Project is located on Parcels 52R and GG at the eastern end of Basin H, near the Harbor Patrol Facilities and the public launch ramp (Figure 2 and 3). Landside, the facility will accommodate 345 boats in dry-stack, with 30 mast-up storage spaces. The existing Sheriff's dock capacity will remain the same, with an eight- boat capacity. Waterside queuing will consist of a mix of sixty-five, 24-40 ft vessels at maximum capacity. Thirty, 16-inch diameter guide piles will be installed to support a 7,259 sq ft dock system for the temporary tie-up of vessels launched from the dry storage facility.	
Description of Site:	*Depth range:*	+3 ft to -9 ft MLLW.
(describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).	*Substrate type:*	Rip rap extended between the intertidal zone to a depth of approximately -6 ft MLLW: sand and silty sediments were present between depth of -6 and -9 ft MLLW.
	Temperature:	66 degrees F
	Salinity:	25-35 ppt
	Dominant flora:	The brown algae *Sargassum muticum*

Site Description (continued)	*Dominant fauna:*	Invertebrates and fishes observed by biologists included burrowing anemones (*Pachycerianthus fimbriatus*), predatory sea slugs (*Navanax inermis*), mussels (*Mytilus galloprovincialis*), unid perch (Embiocidae, unid.), and round sting ray (*Urolophus halleri*).
	Exotic species encountered (including any other Caulerpa species):	None
	Other site description notes:	None
Description of Survey Effort:	*Survey date and time period:*	October 17th, 2006, 1030-1300 hrs
Description of Survey Effort: (continued) please describe the surveys	*Horizontal visibility in water:*	0.6 m meter (2 ft) on each side of centerline of each transect; total viewing area along each transect: 1.3 meters (4 ft) on all transects

conducted including type of survey (SCUBA, remote video, etc.) and survey methods employed, date of work, and survey density (estimated percentage of the bottom actually viewed.	*Survey type and methods:*	The survey was conducted on 17 October 2006 between 1030 and 1300 hrs. A total of twenty-eight 230 foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals. Bottom type, common marine life, and the presence or absence of eelgrass and invasive algae were recorded. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Santa Monica Pier tidal survey station. The total survey area (Area of Potential Effect, or the APE) was 70,008 sq ft (6,751 sq meters). Based upon underwater visibility conditions that averaged 4 ft (2 ft on each side of the center line that the biologists followed), the actual amount of bayfloor observed by the biologists was 31,366 sq ft (2,915 sq m). This accounted for 43.5 % of the total APE bayfloor habitat within the project limits. This survey was a surveillance level survey (minimum of 20% bottom cover)
Describe any limitations encountered during the survey efforts.	*Survey personnel:*	Rick Ware and Lein Jenkins of Coastal Resources Management, Inc.
	Survey density:	A total of twenty-eight 230 foot (70 meter)-long transects and thirteen 108 foot (33 meter)-long transects were swam perpendicular to the seawall at 10 ft (3 m) intervals.
	Survey limitations:	No survey limitations
Other Information: (use this space to provide additional information or references to attached maps, reports, etc.)	See attached project maps **Figure 1**. Project location, Marina del Rey Harbor **Figure 2**. Marine Biological Survey Area **Figure 3**. Proposed Project Plans	

Caulerpa Survey Reporting Form (version 1.2, 10/31/04)

Figure 1. Base Plan & Location Map

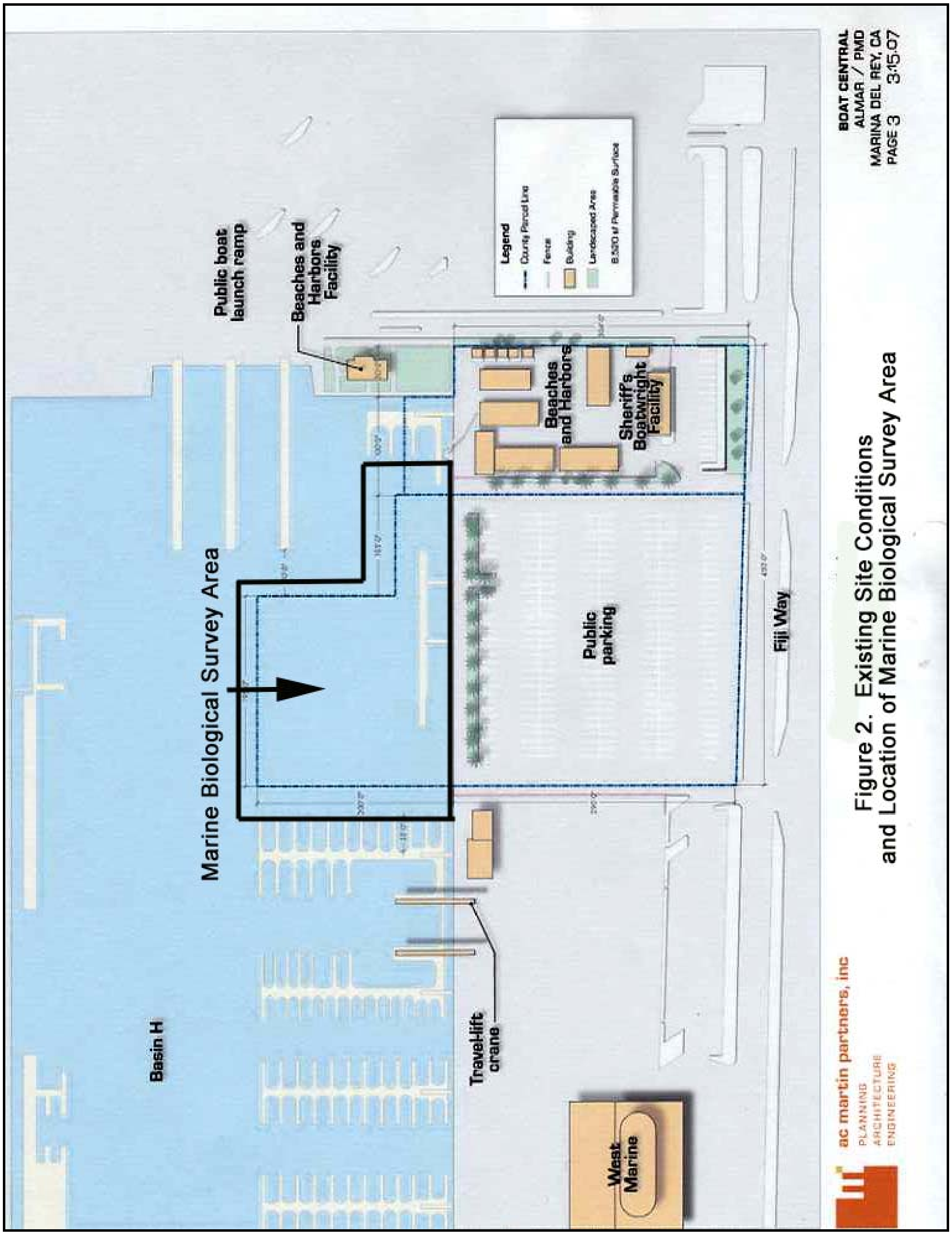

Figure 2. Existing Site Conditions and Location of Marine Biological Survey Area

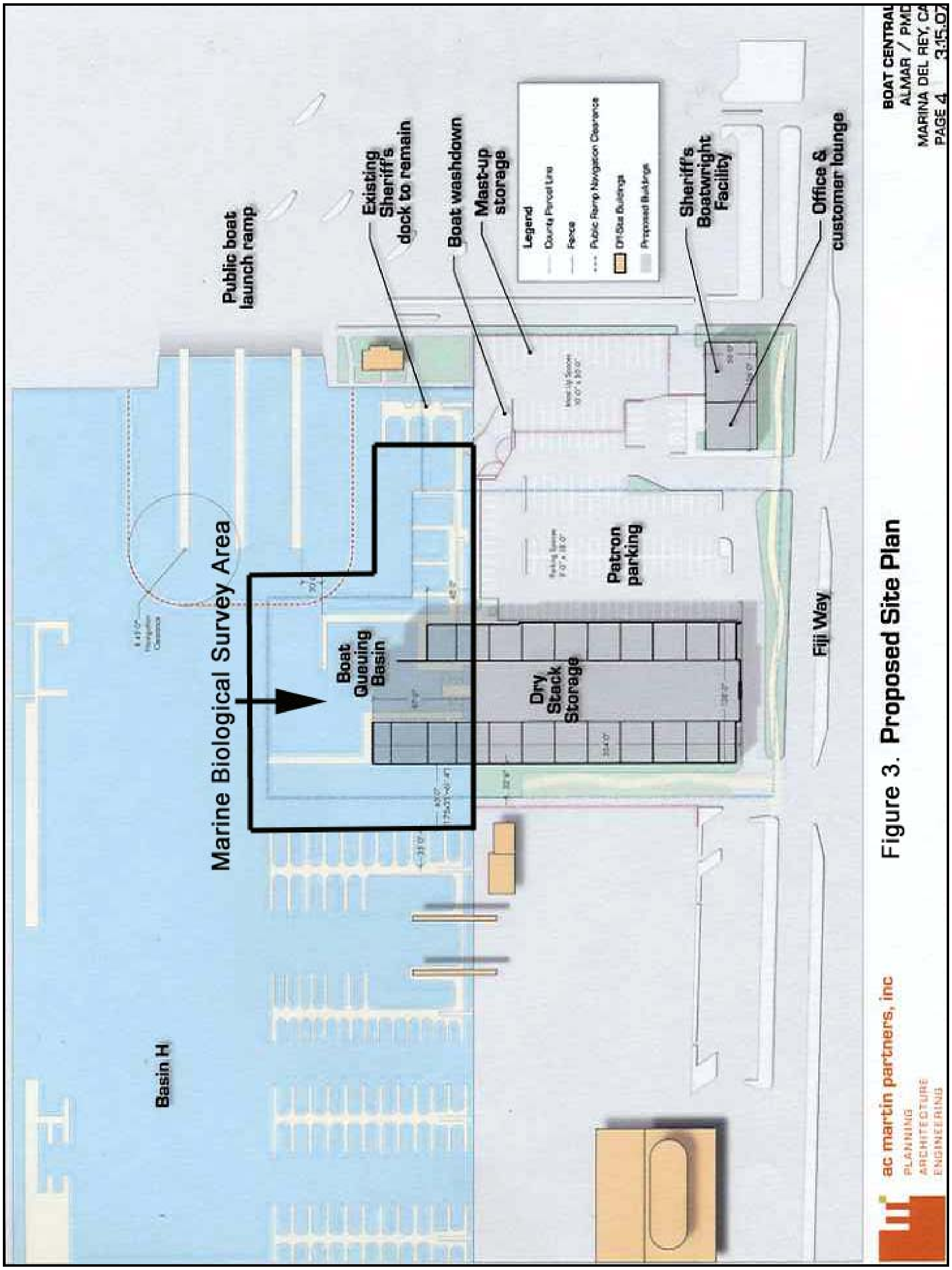

Figure 3. Proposed Site Plan

Appendix E7
Wind Impact Assessment dated September 19, 2006, prepared by Rowan Williams Davies and Irwin Inc. (RWDI), in conjunction with Wayne Bezner Kerr of the Migratory Bird Research Group

September 19, 2006

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Mr. Roger Van Wert
Consultant to the Firm – Allen Matkins Leck Gamble Mallory & Natsis, LLP
515 South Figueroa Street, Seventh Floor
Los Angeles, California
USA 90071

Re: Wind Impact Assessment
Marina del Rey – Boat Central
Marina del Rey, California
RWDI Reference No. 07-1036

Email: rvanwert@allenmatkins.com

Dear Mr. Van Wert:

As per your request, this letter summarizes our professional opinion on the effect of the proposed Boat Central Development on wind conditions within the adjacent basins, the potential loss of surface winds used by birds and the general air circulation in Marina del Rey.

This wind impact assessment includes a review of the project drawings, aerial photographs, regional wind data, the results of previous wind studies conducted by RWDI on projects in Marina del Rey, and our knowledge and experience. A qualitative study in lieu of a full wind tunnel model study is appropriate for the current development, considering the location and size of the development, the local wind directionality and the availability of test data from other projects in the area.

Description of Proposed Development

Draft drawings and renderings for the proposed project were provided by AC Martin Partners, Inc. on August 15, 2006. The proposed development is a dry stack boat storage facility at the east end of Basin H. As shown in Figure 1, the development site is located on the north side of Fiji Way. Figure 2 is a site plan, showing the proposed rectangular boat storage building of 135 ft by 330 ft and a small Sheriff's Boatwright Shop on an open parking lot. Figure 3 shows sections of the proposed boat storage building (70 ft high).

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Local Wind Directionality

Figure 4 shows the directional distribution of seasonal winds, based on long-term wind records from the nearby Los Angeles International Airport. These wind roses show the percentage of the time that wind blows from each of the 16 compass directions during the spring, summer, fall and winter seasons between 7:00 am and 9:00 pm, when most sailing would occur. It is evident that winds from the west, west-southwest, southwest and east directions are most dominant throughout the year.

Wind-tunnel Studies for Adjacent Developments

Of the many wind studies conducted by RWDI on projects in Marina del Rey since the 1990's, both the Fisherman's Village and the13900 Fiji Way project are on the east side of the Main Channel, similar to the current development.

In our September 17, 2004 report[1] for the Fisherman's Village, it was concluded that "the proposed Fisherman's Village will not affect the existing wind conditions over a majority of the areas of Marina del Rey. There will be areas of altered wind speeds and directions in the Main Channel adjacent to the proposed development when winds are from the east. This is not an issue considering the boating activities in these areas. Due to the localized nature of these changes and the low frequency associated with the easterly winds, there will be no significant effect on the general air circulation patterns within the Main Channel and Basins in Marina del Rey.

Effect on Sailing Conditions

When winds flow around a building, accelerations occur around the windward building corners and decelerations in the wake area on the leeward side of the building. High turbulence in the wake area is usually associated with variations in both wind direction and speed.

The proposed Boat Central Development is located at the southeast corner of Basin H, which is on the east side of the Main Channel, and runs in a southwest and northeast direction, as shown in Figure 1. When winds are from the most frequent west-southwest and west directions, the acceleration and deceleration zones around the proposed facility will mainly be on land, not on the water surface.

1. RWDI Project Number 04-1692, Wind Study, Fisherman's Village, Marina del Rey, California

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The southwesterly winds will accelerate around the northwest corner of the proposed development and alter the wind speed and direction in the area immediate north of the development. When winds are from the east direction, the wind effect will extend onto an area on Basin H, west of the proposed facility. The ships immediately west of the proposed Development will be wind sheltered, while a slight increase in wind activity will occur in a limited open area of the basin. The southwesterly and easterly winds are not frequent, as shown in Figure 4. Therefore, minimal effects on the sailing conditions are predicted.

With the proposed development in place, wind conditions would not change in other Basins or in the Main Channel of Marina del Ray for any wind directions.

Loss of Surface Winds Utilized by Birds

In order to assess the effect of changes to surface winds on birds, a report (see Appendix A) was prepared by an expert in aerodynamics, kinematics and the behavior of birds, in which the author of the report considered the following issues:

- the types of birds likely to inhabit Marina del Rey,
- the ability of birds to take off and land,
- soaring conditions upwind and downwind of the proposed building,
- effects on local thermal soaring conditions, and
- changes in flight efficiency due to turbulence.

It is our opinion that the minimal changes in the existing wind fields due to the proposed development will result in no significant change to the birds' use of the area.

Change of Air Flow Patterns

Changes in wind speed and direction patterns are expected in the immediate vicinity of the proposed development. Due to this localized nature, there will be no perceived effect on the general air circulation patterns within Marina del Rey.

CONSULTING ENGINEERS
& SCIENTISTS

Rowan Williams
Davies & Irwin Inc.
650 Woodlawn Road West
Guelph, Ontario
Canada N1K 1B8

A member of the
RWDI Group of Companies

Closing

In conclusion, while localized variations in wind speed and direction are likely to occur at the east end of Basin H, the proposed Boat Central Development is expected to have minimal effect on wind conditions in the adjacent Basins and the Main Channel, the potential loss of surface winds used by birds and the general air circulation in Marina del Rey. The above opinion is based on the design information of the Boat Central Development, local wind directionality, previous wind studies in the Marina del Rey area, and our experience and engineering judgment. If you have any questions in this regard, please do not hesitate to contact us.

Yours very truly,

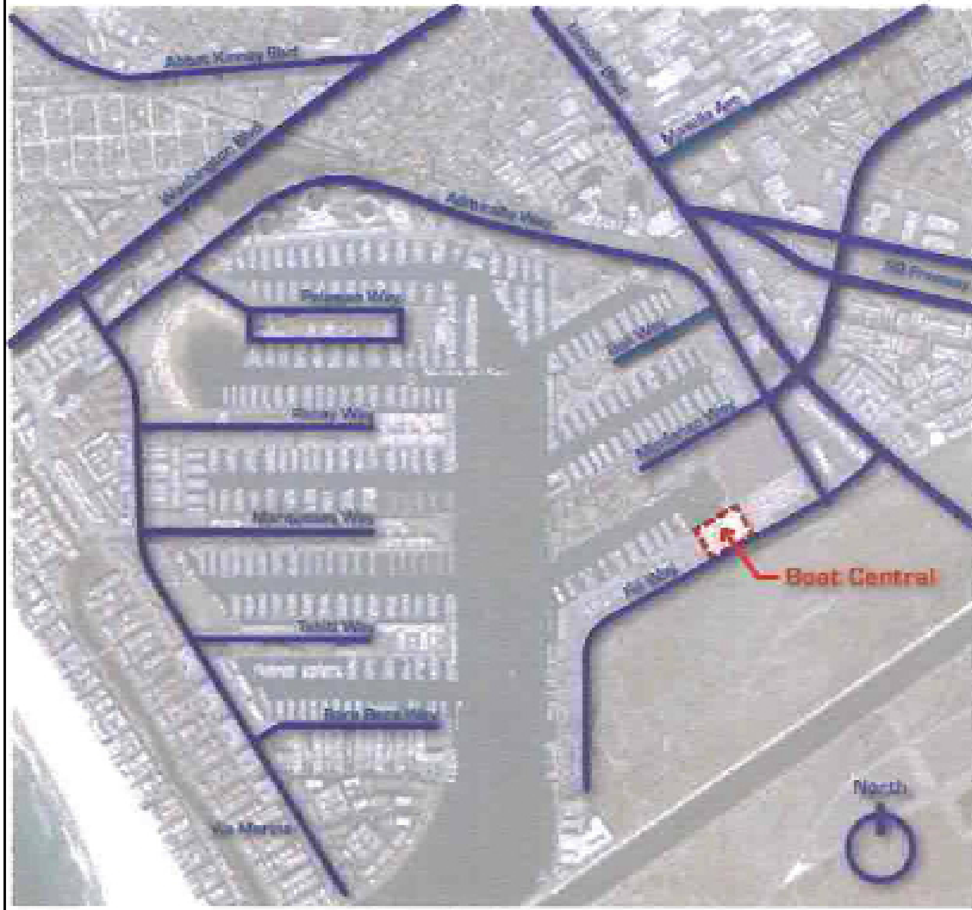
ROWAN WILLIAMS DAVIES & IRWIN Inc.

Hanqing Wu, Ph.D., P.Eng.
Senior Specialist / Associate

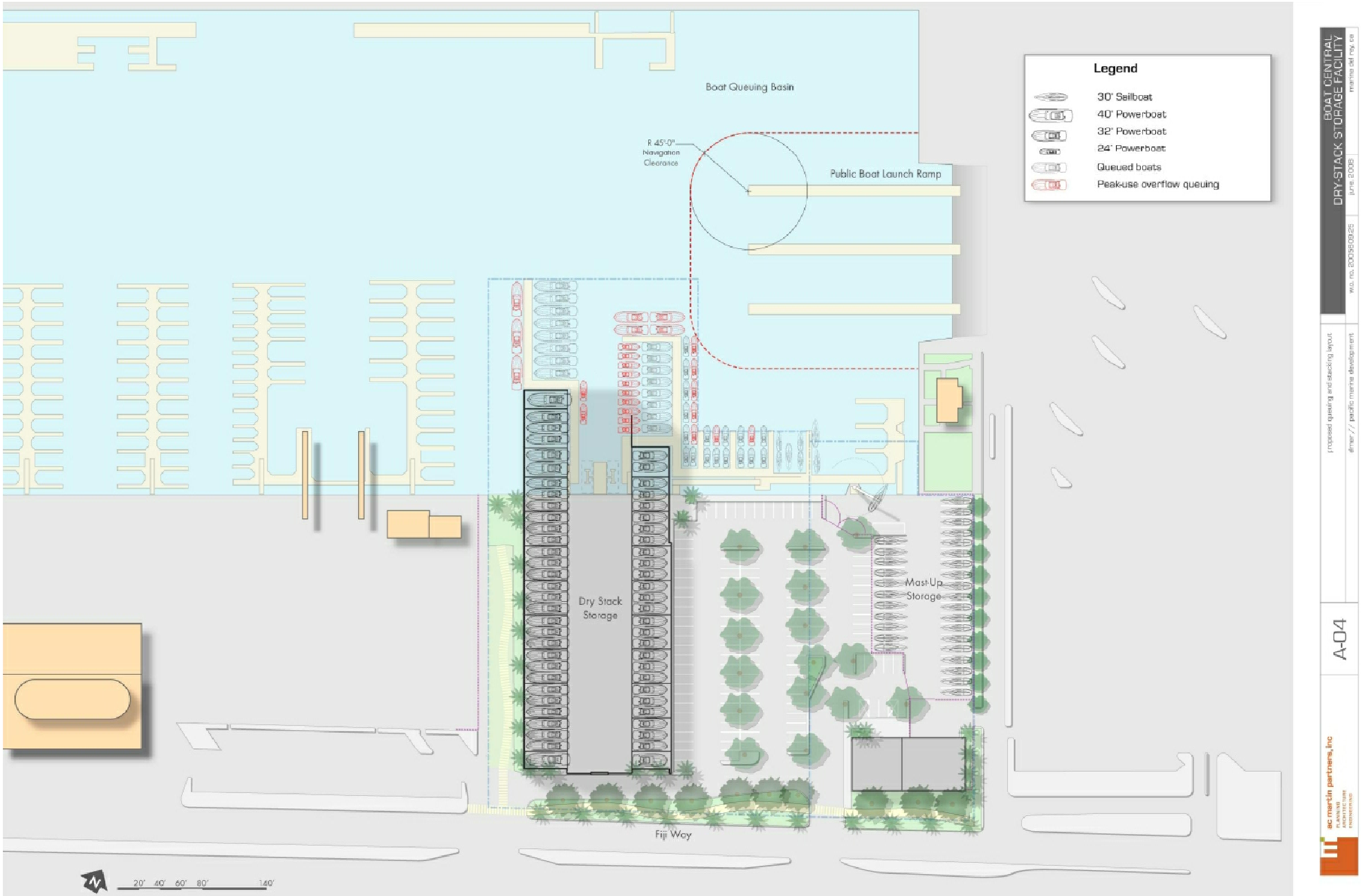
Dan Bacon
Senior Project Manager / Associate

HW/DEB/yio
Attach.

FIGURES



Project Location Source: AC Martin Partners, inc	True North	Drawn by: EG	Figure: 1	RWDI
		Approx. Scale: N.T.S		
Boat Central – Marina del Rey, California	Project #07-1036	Date Revised: Sept. 14, 2006		



Accomodation Plan
Source: AC Martin Partners, inc

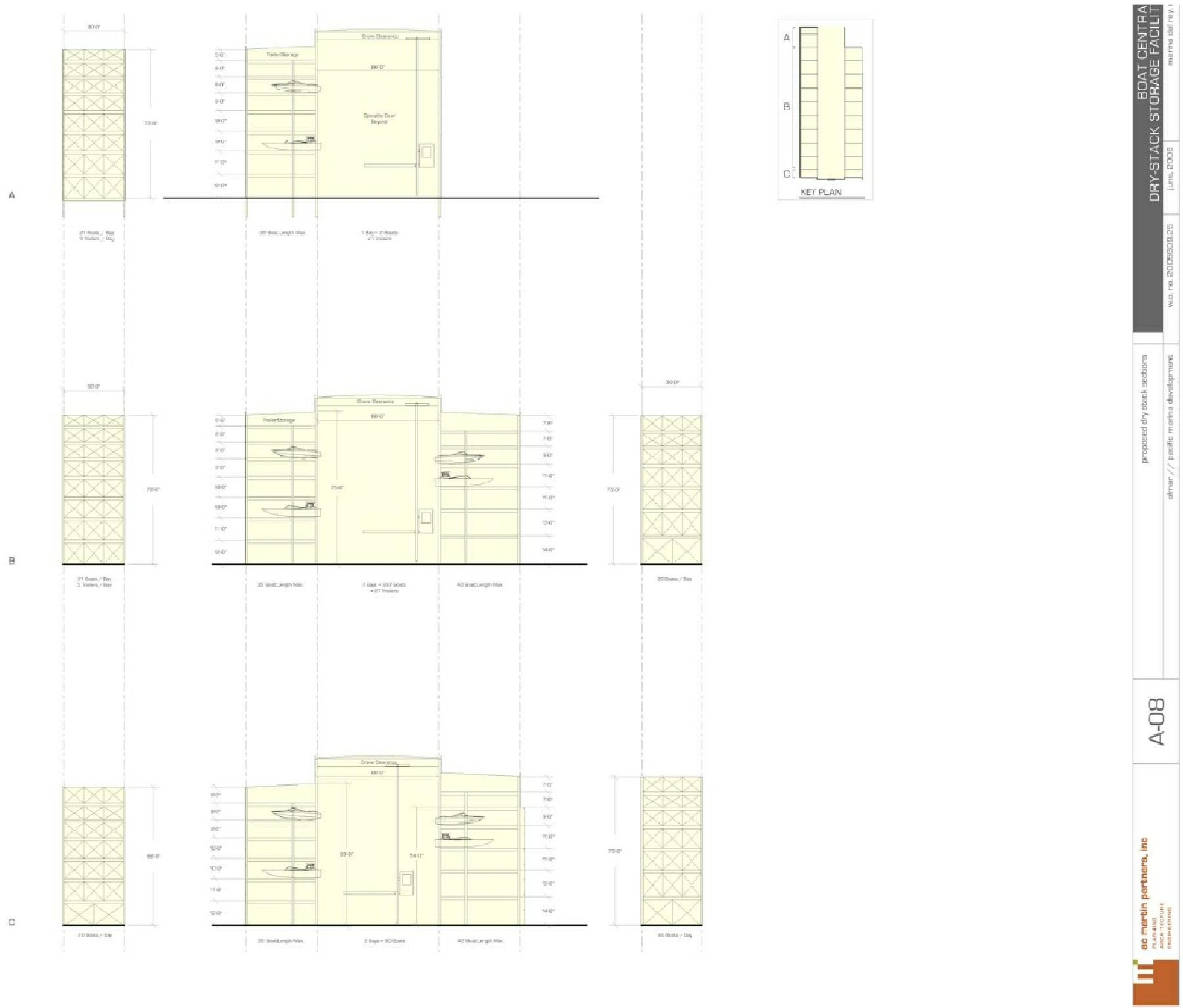
Boat Central - Marina del Rey, California

True North

Project #07-1036

Drawn by:	EG	Figure:	2
Approx. Scale:	N.T.S		
Date Revised:	Sept. 14, 2006		

RWDI



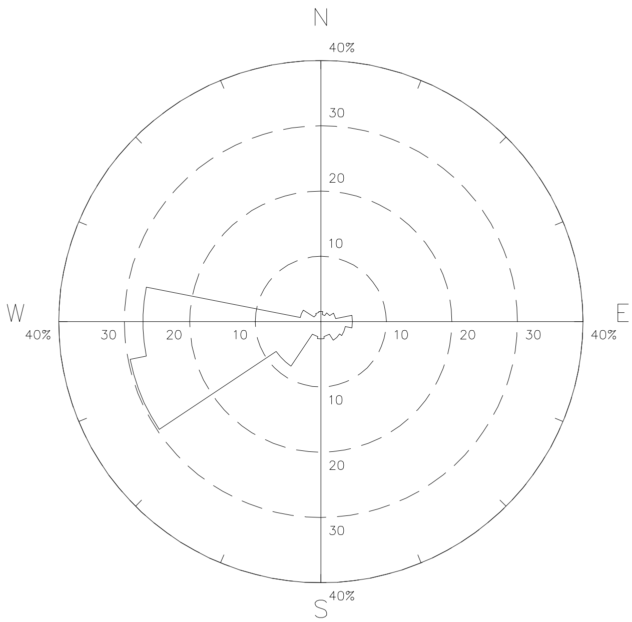
Building Sections
Source: AC Martin Partners, inc

Boat Central - Marina del Rey, California

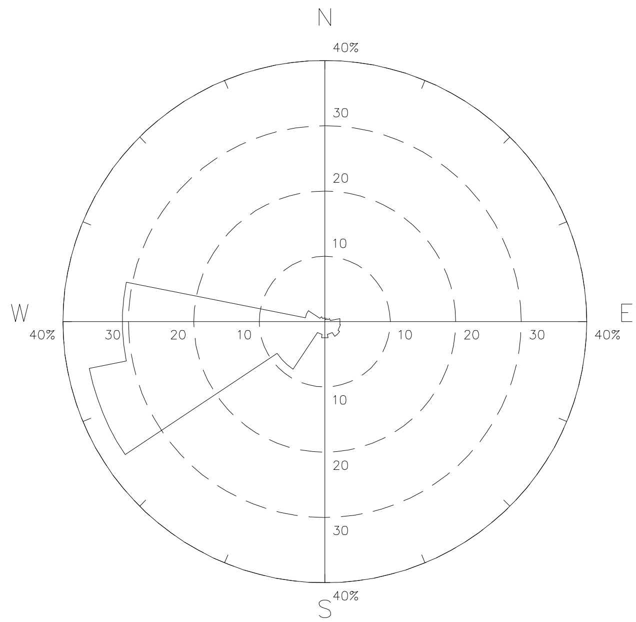
Project #07-1036

Drawn by: EG	Figure: 3
Approx. Scale:	N.T.S
Date Revised:	Sept. 14, 2006

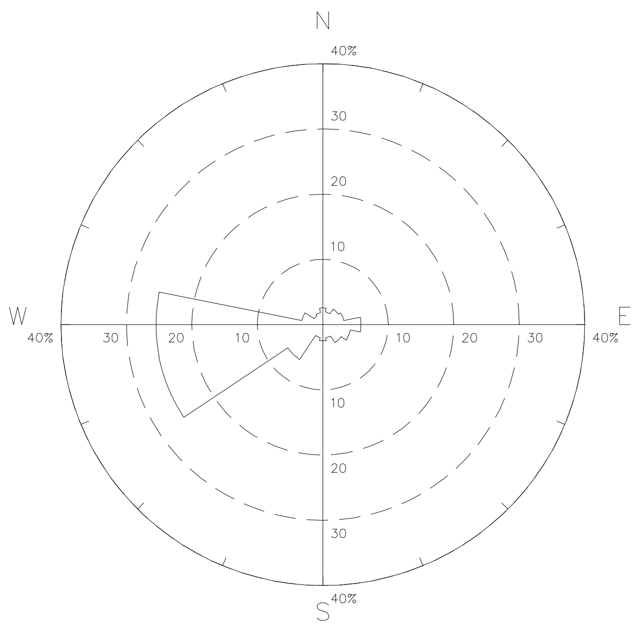
RWDI



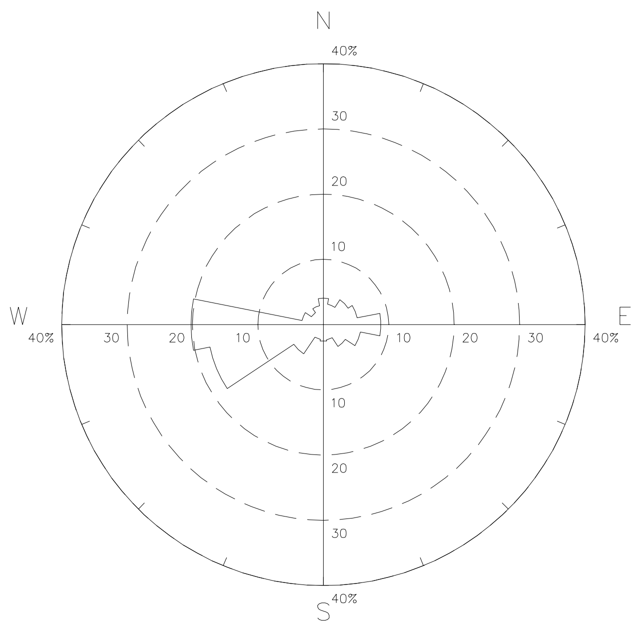
SPRING
(March, April, May)



SUMMER
(June, July, August)



FALL
(September, October, November)



WINTER
(December, January, February)

Directional Distribution of Seasonal Winds **(7:00 am - 9:00 pm)** **Los Angeles International Airport (1947 - 1990)B**	Figure No. 4	RWDI
Boat Central - Marina del Rey, California Project #07-1036	Date: September 19, 2006	

APPENDIX A

Effect of a proposed structure at Marina Del Rey, California on surface winds used by local birds.

A report prepared For Rowan Williams Davies & Irwin Inc.

Wayne Bezner Kerr
Migratory Bird Research Group

Attn: Colin Williams
Principal,
Rowan, Williams, Davies and Irwin Inc.

From: Wayne Bezner Kerr
Migratory Bird Research Group

Re: **Effect of a proposed structure at Marina del Rey, California on surface winds used by local birds.**

The proposed structure at Marina del Rey appears to be fairly straight forward, insofar as use of surface winds by local and/or transient populations of birds are concerned. In response to your request I have undertaken a literature search on the aerodynamics, kinematics and behaviors of flying birds. Combined with my own observations from four seasons of experimental work with flying birds of different weights, wing loadings and Reynolds numbers (Re), I have formed some basic conclusions regarding the project under discussion. My conclusions are presented under five general subheadings.

1. Changes to surface winds on open water:

The concept of "surface winds" does not necessarily apply to birds in powered flight, at least as far as wind strength and direction are concerned. Unlike humans who experience wind relative to a fixed frame of reference on the ground, birds in flight always experience a direct headwind exactly equal to their airspeed and heading. Thus, a gull in steady state flight at 21 knots on a heading of 090 degrees will always experience a 21 knot east wind, regardless of actual wind strength and direction at the time of observation. The actual track described by a bird in flight will be the vector of the birds heading less the vector of the wind at that moment. Birds in translational, foraging and migratory flight may fly with wind speeds equal to or greater than their actual flying speed at angles greater than 90 degrees to their intended course (Kerlinger 1989). By altering airspeeds and headings, birds are able to complete flights along a desired ground track in a range of winds much greater than the expected changes to winds measured at the surface at Marina Del Rey.

In our experiments with migratory waterfowl and wading birds, we have seen that changes to wind direction and strength can create problems for birds when taking off or landing in confined areas. For the few moments while a bird is accelerating during takeoff or decelerating during landing it is generally limited to headings that take it directly against the wind. On open water such as the channel found at Marina Del Rey, birds are able to takeoff and land in almost any direction, allowing unrestricted flight in winds from any direction. In my opinion, predicted changes to surface winds at Marina Del Rey are unlikely to have a measurable negative effect on local birds.

2. Changes to ridge soaring conditions downwind of the structure:

Some species commonly observed at Marina Del Rey exploit winds deflected upwards against vertical structures in a behavior known as "ridge soaring". Ridge soaring birds minimize the energy expended to remain aloft while in translational, foraging and migratory flight. The energy savings gained through the use of ridge lift are proportional to wind speed and the proportion of wind directed perpendicular to the obstruction (Kerlinger 1989). Ridge soaring birds may use lift provided by wind deflecting over and around towers, buildings, boats, hills and other structures. In my opinion, the predicted changes in wind speed and direction as a result of the proposed structure at Marina Del Rey are unlikely to significantly affect ridge soaring birds exploiting flows directed upwards along the downwind shore of the channel.

3. Changes to ridge soaring conditions upwind of the structure.

It is reasonable to expect that some ridge soaring behavior will occur on the upwind facing side of the structure under discussion. A new structure with a face oriented within 45 degrees to the prevailing wind direction will generate lift on days when winds are sufficiently strong. Soaring birds moving across the area can derive energetic benefits by diverting slightly to pass through the area of rising air. In my opinion, several species of birds observed at Marina Del Rey will likely utilize ridge lift created by the proposed structure at least occasionally.

4. Changes to local thermal soaring conditions:

Some species present at Marina Del Rey utilize small columns of rising warm air known as thermals to reduce the energy expended while climbing. Thermal conditions are relatively rare in coastal areas, especially at sites surrounded by water where stable marine air suppresses thermal activity (Lindsay 1988). Thermal lift at Marina Del Rey is most likely found over larger built up or constructed areas such as docks, parking lots and buildings. In my opinion, a microscale change to the total built horizontal area at Marina Del Rey such as the addition or removal of a single building is unlikely to result in a measurable change to thermal frequency, size or distribution.

5. Changes to flight efficiency due to turbulence.

Birds, like miniature aircraft are subject to basic laws of aerodynamics. Generally speaking, birds of the weights and speeds observed at Marina Del Rey operate at Reynolds numbers (Re) between approximately 70,000 and 250,000 (Pennycuick 1989). Like artificially constructed airfoils, bird wings can be adversely affected by turbulence (Lissaman 1983), at least hypothetically reducing lift by a large degree. It is important to note that atmospheric turbulence occurs over a broad range of scales. Low speed airfoils operating at Re similar to birds observed at Marina Del Rey are most likely to suffer reduced aerodynamic performance where turbulence occurs at scales approximately 1/4 the average wingspan. Microscale turbulence in this range is short lived in the atmosphere, and is more typical of flows around small, complicated structures such as sailboat rigging or tree branches than larger solid structures. Larger scale wake vortices and eddies typical of flow downwind of large buildings is likely experienced by birds as long period changes to the free stream air, rather than aerodynamically disruptive turbulence *per se.* In my opinion, turbulence created by the proposed structure is unlikely to result in reduced aerodynamic efficiency of birds flying at Marina Del Rey.

Conclusion:

The addition or removal of a building at Marina Del Rey will undoubtably result in changes to local winds in the altitudes and areas utilized by birds. However, due to the relatively minor nature of the changes expected, the wide variety of airspeeds birds are capable of flying at, the diverse flight strategies employed by birds and the relatively small percentage of total area where measurable impacts will be observable, it is my opinion that the proposed structure will not result in major changes to birds' use of surface winds at Marina Del Rey.

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Simons, Martin
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Spedding GR
1992 **The Aerodynamics of Flight** In Mechanics of Animal Locomotion ed. RN Alexander Adv. Comp. Physiol. 11:59-78

Tobalske, B. W. and Dial, K. P.
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U.S. Fish and Wildlife Service.
No date. **Checklist of Birds of Naval Weapons Station Seal Beach National Wildlife Refuge**. U.S. Fish and Wildlife Service. Unpaginated.

Van den Berg, C. and Rayner, J. M. V.
1995. **The moment of inertia of bird wings and the inertial power requirement for flapping flight**. The Journal of Experimental Biology 198, 1655-1664

Wayne Bezner Kerr
1 Forest Hill Drive #10
Guelph, Ontario
N1G 2E1

Recent Work and Research Experience:

1998 - Present	M.Sc. Candidate.	Dept of Zoology University of Guelph Guelph, Ontario
1996 - 1999	Coordinator	Trumpeter Swan Migration Project Migratory Bird Research Group Guelph, Ontario
1995	Researcher	Sandhill Crane Induced Migration - Experiment Operation Migration Blackstock, Ontario

Publications:

1999 W. Bezner Kerr. **Imprinting techniques and the development of in flight following behavior in migratory trumpeter swans**. North American Swans 28 (3) (in press).

1998 W. Bezner Kerr. **No Swan Songs Here**. FAI AirSports International. Vol 1. http://airsports.fai.org/

1997 W. Bezner Kerr. **Swan Songs.** Dofasco Illustrated News. Dec. Pp 12-13

1996 Lishman, W.A., T.L. Teets, J. Duff, W.J.L. Sladen, G.G. Shire, K. Goolsby, W.A. Bezner Kerr, and R.P. Urbanek. 1997. **A reintroduction technique for migratory birds: Leading canada geese and isolation-reared sandhill cranes with ultralight aircraft**. Proc. North Am. Crane Workshop 7:114-122

Presentations:

September 1999 **The Use of Induced Migration Techniques in the Restoration of Migratory Populations of Trumpeter Swans (Cygnus buccinator).** 17^{th} Trumpeter Swan Society Conference. Idaho Falls (scheduled)

July 1999 **The Use of Ultralight Aircraft in Waterfowl Restoration and Research**. COPA Annual Convention. North Bay

March 1998 **Trumpeter Swan Migration Project Overview**. North Bay Naturalists Association.

Awards, Scholarships and Research Support:

1999 Ontario Graduate Scholarship in Science and Technology
1999 Trumpeter Swan Society Certificate of Special Appreciation.
1999 USUA Public Service Award.
1999 Elgin Card Scholarship in Terrestrial Ecology
1999 University of Guelph Graduate Scholarship.
1998 Canada Trust Friends of the Environment Grant
1998 - 99 EcoAction 2000 Grant
1998 University of Guelph Graduate Scholarship.
1998 University of Guelph Graduate Scholarship.
1998 OFAH Waterfowl Ecology Grant.
1998 Conrad N Hilton Foundation Research Grant

Appendix F–
Report of Geotechnical Investigation
Proposed Boat Storage Facility
prepared by Van Beveren and Butelo, Inc.
dated February 25, 2008
and
Letter dated December 10, 2008
re Recommendations to Address Pile Driving Vibrations,
prepared by Van Beveren and Butelo, Inc.

VAN BEVEREN & BUTELO, INC.

REPORT OF GEOTECHNICAL INVESTIGATION PROPOSED BOAT STORAGE FACILITY

13483 FIJI WAY, MARINA DEL REY
LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

MDR BOAT CENTRAL, LLP

Los Angeles, California

February 25, 2008

Van Beveren & Butelo Project 07-025

VAN BEVEREN & BUTELO, INC.

February 25, 2008

Mr. Thomas V. Hogan
MDR Boat Central, LLP
3416 Via Lido, Suite G
Newport Beach, California 92663

Subject: **Report of Geotechnical Investigation**
Proposed Boat Storage Facility
13483 Fiji Way, Marina del Rey
Los Angeles County, California
for MDR Boat Central, LLP
Van Beveren & Butelo Project 07-025

Dear Mr. Hogan:

We are pleased to submit the results of our geotechnical investigation for the proposed boat storage facility to be constructed within Marina del Rey. This investigation was conducted in general accordance with our proposal dated January 5, 2007, as authorized by you on June 12, 2007.

The scope of this investigation was planned with you, with Mr. Roger Van Wert of Allen Matkins and Mr. Tim Bazley of BlueWater Design, who also provided us with information on the planned construction.

The findings of this investigation are described in the report and data are presented for foundation design. This report will need to be filed, along with design drawings, with the County of Los Angeles, Geotechnical and Materials Engineering Division, for review and approval prior to receiving a building permit. Two of the report copies and an electronic copy on a CD in PDF format are being transmitted to Mr. Van Wert for this purpose.

Sincerely,
Van Beveren & Butelo, Inc.

REGISTERED PROFESSIONAL ENGINEER
VICTOR K. LANGHAAR
No. 2647
Exp. 12-31-08
GEOTECHNICAL
STATE OF CALIFORNIA

Victor K. Langhaar
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John Jeffrey Butelo
Principal Engineering Geologist
Vice President

REGISTERED PROFESSIONAL ENGINEER
JAMES L. VAN BEVEREN
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GEOTECHNICAL
STATE OF CALIFORNIA

James L. Van Beveren
Principal Engineer/President

07-025 r01/VB:ay
(2 copies submitted)

copies: (3) Allen Matkins
Attn: Mr. Roger K. Van Wert
(1) B & E Engineers
Attn: Mr. Steve E. Matsler
(1) BlueWater Design Group
Attn: Mr. Tim Bazley

VAN BEVEREN & BUTELO, INC.

REPORT OF GEOTECHNICAL INVESTIGATION
PROPOSED BOAT STORAGE FACILITY

13483 FIJI WAY, MARINA DEL REY
LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

MDR BOAT CENTRAL, LLP

Los Angeles, California

Van Beveren & Butelo, Inc.

February 25, 2008

Van Beveren & Butelo Project 07-025

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SUMMARY

We have completed our geotechnical investigation of the site of the proposed boat storage facility in Marina del Rey, Los Angeles County, California. Our subsurface explorations, engineering analyses, and foundation design recommendations are summarized below.

We explored the soil conditions by drilling three borings and performing two cone penetration soundings at the site. The site is underlain by hydraulic fill soils, 6 to 9 feet thick and recent estuary deposits to depths of 47 to 56 feet. The estuary deposits are variable containing soft, compressible silts and clays, loose sands and silty sands with highly organic peat layers. These weak deposits are underlain by dense sands and gravels. Groundwater was encountered at depths of 7 to 8 feet.

The soils at the site are susceptible to liquefaction in the event of a severe earthquake. The liquefaction could result in several inches of settlement and lateral spreading, that could damage the existing sea wall.

Foundations for the proposed boat storage structure and new dock should be carried through the weak soils and into the dense sands and gravels. Pile foundations will be required. The liquefaction will need to be addressed and there are two options. Soil-cement columns could be installed adjacent to the sea wall to strengthen the soils behind the sea wall and reduce the lateral spreading risk. With this option, site liquefaction could still occur and would need to be considered in the design of the piles. Alternately, the site could be densified using vibration techniques and stone columns; this method would reduce the liquefaction risk to an acceptable level. Recommendations are presented in this report for the soil-cement columns and for pile foundations.

SCOPE

This report provides foundation design information for the proposed boat storage facility. The locations of the facility, existing buildings, and our explorations are shown on Figure 1, Plot Plan.

This investigation was authorized to determine the geologic setting of the site and the presence of any geologic hazards for incorporation into the EIR, to determine the geotechnical conditions to provide data for design of foundations, walls below grade, slabs on grade, paving and for grading. We were to evaluate the existing soil and groundwater conditions at the site, including the corrosion potential of the soils, and develop recommendations for the following:

- A feasible foundation system along with the necessary design parameters, including the estimated settlements due to the expected loadings.
- Subgrade preparation and floor slab support.
- Design of retaining walls.
- Subgrade preparation and design of asphalt paving.
- Grading, including site preparation, excavation and slopes, the placing of compacted fill, and quality control measures relating to earthwork.

The site is within a methane study zone as defined by the County of Los Angeles. A Phase I preliminary site assessment is being performed by Methane Specialists, who are also performing environmental studies to determine if subsurface contamination is present.

Our recommendations are based on the results of our field explorations, laboratory tests, and appropriate engineering analyses. The results of the field explorations and laboratory tests, which form the basis of our recommendations, are presented in Appendix A. Our liquefaction calculations are presented in Appendix B.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for MDR Boat Central, LLP and its design consultants to be used solely in the design of the proposed boat storage facility. The report has not been prepared for use by other parties, and may not contain sufficient information for purposes of other parties or other uses.

PROJECT DESCRIPTION

MDR Boat Central, LLP plans to construct a Boat Storage Facility at the location shown on Figure 1. The proposed boat storage facility will be located between Fiji Way and the existing marina. As currently envisioned, the project will include a dry-stack storage facility for 345 boats, an additional surface storage for 30 boats, boat maintenance facilities Sheriff's Boatwright Shop. The dry-stack storage facility will be up to 70 feet in height and will have up to 7 levels of boat and trailer storage. The boats and trailers will be placed remotely using lifts and cranes; the structure will not be entered by either the boat owners or the operators. The structure will be of steel frame construction. Maximum dead plus live column loads will be on the order of 650 kips. A new dock and boat slips are planned within the marina along with a new elevator.

The new Boatwright's Shop is anticipated to be a tall one-story in height and will have masonry walls. The floor will be established at Elevation 13.0, which is about the existing grade.

The lower level of the dry-stack boat storage structure will be established at Elevation 7.5, or slightly above the existing sea wall. Excavation ranging from less than one foot to about 6 feet will be required for the lower level. Retaining walls may be required on the south side of the structure.

SITE CONDITIONS

The site is located on the east side of Marina del Rey adjacent to the existing Los Angeles County Department of Beaches and Harbors offices. The site of the boat storage structure is currently a paved parking lot. The ground surface slopes down towards the marina with about 7 feet of relief. The marina is separated from the site by an existing sea wall; the wall consists of reinforced concrete panels supported by three rows of deadmen at approximately 15 feet on centers. The deadmen are restrained by vertical "caissons" at the back of the wall. An existing 10-inch diameter sewer is located about 10 feet behind the wall. Conditions at the existing sea wall are described on Figure 3, Sea Wall Details. There is an existing County boatwright's building at the southeast corner of the site.

SUBSURFACE EXPLORATIONS AND LABORATORY TESTS

We explored the soil conditions at the site by drilling three borings to depths of 61 to 76 feet and advancing two cone penetration tests (CPTs) to depths of 51 to 58 feet. Shear wave measurements also were obtained at location CPT-2.

The borings were drilled using 5-inch-diameter rotary-wash drilling equipment, and the CPTs were advanced using a 30-ton CPT rig. The soils encountered in the borings were logged by our field technician, who also obtained undisturbed samples for laboratory inspection and testing. The locations of these explorations are shown on Figure 1. Details of the explorations and the logs of the borings and CPTs are presented in Appendix A.

Laboratory tests were performed on selected samples obtained from the borings to aid in the classification of the soils and to determine the pertinent engineering properties of the foundation soils. The following tests were performed:

- Moisture content and dry density determinations
- Direct shear
- Consolidation
- Grain Size
- Atterberg Limits
- Stabilometer (R-Value)
- Corrosion Studies

All testing was done in general accordance with applicable ASTM specifications. Details of the laboratory testing program and test results are presented in Appendix A.

GEOLOGY

GEOLOGIC SETTING

The site is located within the Los Angeles coastal plain, the westernmost portion of California’s Los Angeles Basin Structural and Geomorphic province. The Los Angeles Basin is bounded by the Santa Monica Mountains and Elysian Hills to the north, the Puente Hills to the east, the Palos Verdes Peninsula and Pacific Ocean on the west, and the Santa Ana Mountains and San Joaquin Hills to the south. The basin is underlain by a deep structural depression that has been filled with both marine and continental sedimentary deposits. The sediments are underlain by a basement complex of crystalline igneous and metamorphic composition.

GEOLOGIC MATERIALS

The marina is composed of hydraulic fill that overlies coastal deposits consisting of bay mud and beach and lagoonal deposits. The coastal deposits are underlain by estuary deposits with peat from Ballona Creek and the ancestral Los Angeles River. Pleistocene deposits beneath the estuary deposits consist of San Pedro Formation units. Figure 2, Geologic Cross Sections, have been prepared to illustrate the relation of the subsurface materials to the proposed construction. Areal distribution of geologic units in the site vicinity are depicted on Figure 4, Regional Geologic Map.

Hydraulic fill soils varying from 6 to 9 feet in thickness were encountered in our borings. The fill soils consist primarily of sand and silty sand. The hydraulic fill is a result of the prior marina construction.

The natural soils beneath the fill are recent coastal estuary deposits consisting predominantly of soft compressible silts and clays, loose sands and silty sands with highly organic peat layers up to 10 feet thick to depths of about 51 to 56 feet underlain by dense sands and gravels. Hydrogen sulfide odors were noted as reported on the boring logs.

GROUNDWATER

Groundwater was measured in all of our borings at depths ranging from 7 to 8 feet below the ground surface (corresponding to Elevations +1 to +7 feet above mean seal level). The groundwater levels fluctuate with tides. Our review of published information (CDMG, 1998) indicates a historic high groundwater level of 5 feet below grade.

GEOLOGIC HAZARDS

Faults

The numerous faults in southern California are categorized as active, potentially active, and inactive. Active faults are generally those faults that have displaced rock units during the Holocene Epoch (i.e. the last 11,000 years). Potentially active faults have demonstrated displacement within the Pleistocene Epoch (i.e. the last 1.6 million years) but do not displace Holocene Strata. Inactive faults do not exhibit displacement younger than 1.6 million years before the present.

The closest active fault to the site is the Palos Verdes fault. The Palos Verdes fault has been mapped approximately 4 miles southwest of the site. Vertical separations up to about 6,000 feet occur across the fault at depth. Strike-slip movement is indicated by the configuration of the basement surface and lithologic changes in the Tertiary age rocks across the fault. A series of marine terraces in the Palos Verdes Hills were uplifted as a result of movement along the fault during the Pleistocene Epoch. Geophysical data indicate offset at the base of offshore Holocene age deposits. However, historic, large magnitude earthquakes are not yet associated with this fault.

The Newport-Inglewood fault zone, is located about 6 miles northeast of the site. Other nearby active faults are the Santa Monica-Hollywood fault, the Raymond fault, and the Whittier fault, located 6 miles north, 20 miles northeast, and 24 miles east of the site, respectively. The San Andreas fault zone is located about 44 miles northeast of the site.

The closest potentially active fault to the site is the Charnock fault, located about 2.4 miles northeast. Other nearby, potentially active faults include the Coyote Pass fault, and the Norwalk fault, located 13 miles east and 22 miles southeast of the site, respectively.

The site is not located within a currently established Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards. The closest Alquist-Priolo Earthquake Fault Zone, established for the Newport-Inglewood fault, is located 5.8 miles to the northeast of the site. Faults, or fault-related features, were not observed during our site reconnaissance. Figure 5, Regional Seismicity Map, is presented to illustrate the major active and potentially active faults and historic epicenters in the southern California area. Active or potentially active faults with the potential for surface fault rupture are not known to be located directly beneath the site. Therefore, the potential for surface rupture hazard due to fault plane displacement propagating to the surface at the site during the design life of the proposed storage facility is considered low.

Seismicity

Several earthquakes of moderate to large magnitude have occurred in the southern California area within the last 60 years. A list of these earthquakes is included in Table 1, List of Historic Earthquakes.

Table 1, List of Historic Earthquakes

Earthquake	Date of Earthquake	Magnitude	Distance to Epicenter (miles)	Direction to Epicenter
Long Beach	March 11, 1933	6.4	37	South-Southeast
San Fernando	February 9, 1971	6.6	31	North-Northwest
Whittier Narrows	October 1, 1987	5.9	21	East
Sierra Madre	June 28, 1991	5.4	32	Northeast
Big Bear	June 28, 1992	6.4	92	East
Landers	June 28, 1992	7.3	113	East
Northridge	January 17, 1994	6.7	17	Northwest

The site is not exposed to a greater than normal seismic risk than other areas of southern California. However, based on the active and potentially active faults in the region, the site will likely be subjected to significant ground shaking in the event of an earthquake. This hazard is common to southern California and can be mitigated if the structures are designed and constructed in conformance with current building codes and sound engineering practices.

Slope Stability

The near-level topography at the site precludes stability problems related to cut or fill slopes. However, there is a potential for deformation failure due to lateral spreading resulting from liquefaction. This hazard is discussed in a following section. There are no known landslides near the site, nor is the site in the path of any known or potential landslides.

The project is planned to be founded at grade and will incorporate pile foundations that will extend into competent soils at depth. Subterranean levels and other excavations into existing site soils are not planned at this time and stability of temporary or permanent excavations is not considered a hazard to the project. More complete discussions of the proposed structure and foundation recommendations are presented in other sections of this report.

Liquefaction and Seismically-Induced Settlement

According to the California Geologic Survey (formerly the California Division of Mines and Geology) Seismic Hazard Map for the Venice Quadrangle, the site is located within the limits of a potential liquefaction hazard zone. The liquefaction hazard is addressed in a following section, Liquefaction and Lateral Spreading Potential.

Tsunamis, Inundation, Seiches, and Flooding

According to the Los Angeles County Seismic Safety Element (1990), the site is located in a tsunamis hazard zone. According to recently prepared tsunami related inundation maps by the State of California, the maximum potential runup height for the Marina del Rey area could be up to 15 feet. Figure 6, Tsunami Inundation Map, illustrates the predicted areal extent of possible inundation as a result of a tsunami in this region.

Subsidence

The site is not located within an area of known subsidence associated with fluid withdrawal (groundwater or petroleum) or hydrocompaction. Borings 1 and 2 encountered highly organic peat deposits up to 10 feet thick. The peat may oxidize over time and some resulting settlement should be expected. The site is located within the Playa Del Rey Oil Field. Subsidence associated with petroleum production has been identified in some of the oil fields in the Los Angeles Basin; however, subsidence has not been identified in the Playa Del Rey Oil Field. Consequently, the potential for future subsidence within the oil field is considered low.

According to the State of California, Division of Oil and Gas (CDOG) Division of Oil, Gas and Geothermal Resources (DOGGR) Los Angeles County Map 120, Playa del Rey, active or abandoned oil wells are not known to be located within the site limits. Two abandoned oil wells are located within 1,100 feet of the site. One is located approximately 1,050 feet to the northwest, the other approximately 1,100 feet to the east. In the event that old oil wells are encountered during construction, they would need to be reported to the CDOG and properly abandoned in accordance with the current CDOG requirements.

Methane Gas

The site is located within the limits of a known oil field. Although oil wells are not known to be located within the limits of the site, there is a possibility that methane gas at depth could migrate through the estuary deposits and fill to the surface. We understand that Methane Specialists have been retained to evaluate the methane potential and to provide recommendations to mitigate any effects.

SUMMARY OF GEOLOGIC FINDINGS

Based on the available geologic data, known active or potentially active faults with the potential for surface fault rupture are not located beneath the site. Accordingly, the potential for surface rupture at the site due to faulting during the design life of the proposed development is considered low. Although the site could be subjected to strong ground shaking in the event of an earthquake, this hazard is common in southern California, and the effects of ground shaking can be mitigated if the structures are designed and constructed in conformance with current building codes and engineering practices.

The site is relatively level, and the absence of nearby slopes precludes conventional slope stability hazards. Liquefaction and lateral spreading potential are discussed in a later section of this report. The County of Los Angeles has included the site within the limits of a Tsunami Inundation Zone and the site could be subjected to the effects of a seismic sea wave. Peat deposits beneath the site are subject to oxidation and settlement. Methane gas from peat decomposition or subsurface petroleum deposits may be present at the site or could migrate to the surface in the future.

LIQUEFACTION AND LATERAL SPREADING POTENTIAL

The site is located within a State of California designated Liquefaction Hazard Zone. Liquefaction potential is greatest where the ground water level is shallow, and submerged loose, fine sands occur within a depth of about 50 feet or less. Liquefaction potential decreases as grain size and clay and gravel content increase. As ground acceleration and shaking duration increase during an earthquake, liquefaction potential increases.

The liquefaction potential was evaluated using the results of the SPTs performed in our borings, laboratory testing, and the CPTs. The measured shear wave velocity at the CPT-2 location also was considered. The historic-high groundwater depth at the site was taken as 5 feet. A more detailed description of the liquefaction analysis input and the analyses are presented in Appendix B.

The results of our analyses indicate a liquefaction potential exists at the site. Susceptible soils were encountered at various depths between the historic-high groundwater depth of 5 feet and a depth of approximately 50 feet. We estimate the total liquefaction-induced settlement of the estuary deposits, to be on the order of 5 to 11 inches across the site in response to the specified ground motions. Surface manifestations of liquefaction are expected to occur based on this data. We would expect differential settlements to be approximately half of the total liquefaction-induced settlement, or up to about 5 inches. Based on the shallow groundwater at the site and anticipated grading, dry settlement is not anticipated to pose a hazard to the proposed development.

Lateral spreading is a liquefaction-induced lateral displacement that often occurs for sites on sloping ground or near a free-face. Past earthquakes have shown that under adverse conditions, lateral spreading can produce large lateral displacements that can be damaging to foundations. Because of the complex nature of liquefaction-induced lateral spreading, estimation of the magnitude of potential lateral displacements at a site is very difficult. Statistically derived empirical equations utilizing back-analyses of lateral spreading case histories are often used to provide an order of magnitude of expected lateral displacements. Liquefaction-induced lateral spreading of the soils at the project location was evaluated based on the methodology discussed by Youd et. al. (2002). In the analysis, free-face conditions were assumed because of the proximity of the site to the marina seawall. In addition, the expected ground motions at the site, results of the grain size characteristics of the saturated granular soils, as well as the results of the liquefaction evaluation were considered in the analysis. The perpendicular distance from the marina seawall to the middle of the site was used in the analysis. The seawall was assumed to provide no lateral restraint against lateral spread movements. According to our analysis, there is potential for large liquefaction-induced lateral displacements on the order of several feet toward the marina seawall.

Our recommendations for mitigation of liquefaction-induced settlement and lateral spreading are presented in the following sections.

RECOMMENDATIONS

GENERAL

The site is underlain by poorly-compacted fill soils and soft, very compressible, estuary deposits, which are underlain by dense granular soils. Groundwater was measured at depths of 7 to 8 feet below existing grade. Liquefaction is likely within the fill and estuary deposits in the event of a severe earthquake near the site with resulting seismic settlement and lateral spreading towards the adjacent marina basin. It is possible that the existing sea wall could fail as a result of the liquefaction.

The liquefaction and lateral spreading potential will need to be addressed either by a) constructing a supplemental supporting system within the soils behind the sea wall to confine the soils from potential lateral movement, or b) improving the supporting characteristics of the liquefaction-susceptible soils with a ground modification technique.

The supplemental supporting system could be accomplished using large-diameter soil-cement columns installed between the sea wall and the area of the dry-stack boat storage structure. The soil-cement columns would be designed to restrain the soils from lateral movement resulting from liquefaction. The soil-cement columns would not need to be installed across the entire property. The ground improvement process could include densification of the susceptible soils using a vibro-replacement method or by constructing a supplemental retaining system adjacent to the sea wall. These options have been discussed with all parties of the design team and we believe that considering the non-habitable nature of the dry-stack storage building, the soil-cement columns installed adjacent to the sea wall would be the most cost-effective foundation solution.

Because of the very compressible peat deposits beneath the site, and the poor quality of the existing fill, the upper soils are not suitable for foundation support for the project. Foundations should extend through the fill and estuary deposits and into the underlying dense sand and gravel. Deep foundations will be required and floor slabs on grade will need to be structurally supported. Driven piles could be used; auger-cast piles would be a reasonable and practical alternative, if the noise associated with the pile driving is objectionable. Downdrag loads will need to be added to the pile loads because of the compressible peat deposits and because of the liquefaction.

The boatwright building should also be supported on pile foundations. Because of the liquefaction and lateral spreading potential, we recommend that the foundation-level of the building consist of a continuously reinforced mat foundation supported on piles.

The dock and boat slips will be constructed over the water. This area has similar soil conditions as beneath the existing parking lot, although little, if any, hydraulic fill is anticipated. The dock and boat slips can also be supported on pile foundations and the pile foundations should be deigned to resist the downward forces from liquefaction.

If the site is designed as recommended, the site for the proposed structure will be safe against hazards from landslide, settlement or slippage and the proposed structure and grading will not adversely affect the geologic stability of property outside of the site.

SOIL-CEMENT COLUMNS

Soil-cement columns should be installed between the existing sea wall and the dry-stack boat storage studies. The soil-cement columns would be installed using a rotary-mixing technique, referred to as the "Deep Mixing Method" where cement is mixed in-situ with the on-site soils. The columns would be designed to provide lateral resistance to support the liquefied soils behind the columns. The columns could be constructed to diameters of up to about 8 feet (or perhaps even larger).

The soil-cement columns could be installed as close to the sea wall as possible (behind the existing anchorage system and adjacent sewer) and to sufficient width to provide the needed lateral resistance to the lateral spreading forces. The soil-cement columns should extend into the dense sand and gravel, below the zone of liquefaction.

The soils are potentially liquefiable to depths of about 50 feet and the lateral spreading could occur within this depth. Our preliminary analyses indicate that the lateral spreading would occur within the upper 40 feet. The soil-cement columns should be installed through the liquefiable deposits and into the dense sand and gravel. We are currently preparing design criteria for the soil cement columns. The results will be submitted in a supplemental letter.

PILE FOUNDATIONS

General

Foundations for the proposed boat storage structure should extend through the existing fill and estuary deposits and into the underlying dense sand and gravel. Driven piles could be used. If the noise associated with pile driving is a problem, auger-cast piles could be used as an option.

Vertical Capacities

The vertical capacities of 14- and 18-inch square driven precast piles are presented on Figure 7.1, Driven Pile Capacities. The capacities of 18- and 24-inch diameter auger-cast concrete piles are presented on Figure 7.2, Auger-Cast-Pile Capacities. The capacities of other size piles may be assumed to be proportional to the pile diameter. The capacities are presented for penetration into the dense sand and gravel, which was encountered at depths of 47 to 56 feet below existing grade. The presented capacities are for dead plus live loads; a one-third increase in the capacities may be used for wind or seismic loads.

Downdrag Loads

Downdrag loads will need to be added to the design loads on the piles where the site is not improved and liquefaction occurs. Downdrag will also occur because of the compressible peat. The downdrag loads due to the peat are actually greater than the liquefaction downdrag. The downdrag load will depend on the type and size of pile. The downdrag is dependent on the available friction between the pile and the soils within the liquefied zone. The downdrag can be reduced by isolating the pile from the liquefied zone. Isolation could be achieved by pre-drilling the driven pile locations and by the use of cardboard casing at the auger-cast pile locations.

The recommended downdrag loads for various piles with and without isolation are presented in Table 2, Recommended Downdrag Loads.

Table 2, Recommended Downdrag Loads

Pile Type	Downdrag Load No Isolation	Downdrag Load With Isolation
14-inch Square Driven Concrete Pile	100 kips	20 kips
24-inch Diameter Auger Cast Pile	120 kips	20 kips

Settlement

The settlement of the proposed structure due to dead plus live loads supported on deep foundations into the underlying dense sand and gravel will be on the order of ½ inch. Differential settlement between adjacent foundations will be on the order of ¼ inch or less.

Lateral Resistance

Lateral loads may be resisted by the piles and by the passive resistance of the soils. We have determined the lateral capacity of a 14-inch square precast concrete pile and a 24-inch diameter, auger-cast pile, assuming a ¼-inch deflection and for free head and fixed head conditions. Capacities are presented assuming no ground improvement. The allowable lateral resistance for the two piles are presented in Table 3, Lateral Pile Capacities. The capacities of other size piles may be assumed to be proportional to the pile diameter.

Table 3, Lateral Pile Capacities
Without Ground Improvement

Pile Type	Free-Head	Fixed-Head
14-inch Square Driven Concrete Pile	7 kips	14 kips
24-inch Diameter Auger Cast Pile	11 kips	20 kips

The maximum bending moment in the piles may be determined by multiplying the lateral load by a lever arm of five feet. It may be assumed that the maximum bending moment will occur near the top of the pile and will decrease to zero at a depth of 30 feet.

The passive resistance of the soils may be assumed to be equal to 150 pounds per square foot per foot of depth. A one-third increase in the passive value may be used for wind or seismic loads, but since the lateral pile capacities are based on deflection, no increase in the pile capacities is available.

Driven Pile Installation

Hard driving is anticipated in penetrating sandy layers of the estuary deposits and in the dense sand and gravel; predrilling should be anticipated at the pile locations. The predrilling should not extend closer than 5 feet to the tip of the pile.

An indicator pile program will be needed prior to proceeding with pile installation and casting of the production piles. For such an indicator pile program we recommend installing at least five indicator piles. The indicator piles may be production piles driven in their final locations. The indicator pile program should begin adjacent to one of our exploration borings. We should be consulted during the indicator pile program so any variations in the soil conditions and modifications in the program can be addressed.

Because of potential variation in pile lengths, we recommend that the indicator piles be cast at least 10 feet longer than the anticipated lengths. The required driving resistance will depend on the design pile capacity and the energy of the pile driving hammer. The driving resistance for a 14-inch or 18-inch square pile with a design capacity of 240 kips is presented in Table 4, Required Pile Driving Resistance.

Table 4, Required Pile Driving Resistance

Driving Energy (ft-lbs./blow)	30,000	50,000	70,000
Driving Resistance (blows/ft)	53	27	18

The required driving resistance should be obtained for the last foot of driving at the design length. If the desired driving resistance is not obtained at design length, the piles should be lengthened until the desired resistance is obtained. If the desired resistance is not obtained within an additional five feet of driving, it may be necessary to perform a pile load test to further evaluate the pile capacities.

Auger-Cast-Pile Installation

The method of constructing auger-cast piles can vary by contractor. The auger-cast piles are typically installed by drilling a continuous-flight auger into the ground to the desired design depth and placing the concrete by pumping through the auger tip as the auger is withdrawn. A single reinforcing bar can be installed with the auger as it is drilled into position, or a reinforcing cage can be installed through the concrete immediately after concrete placement.

Uncertainties involved with the installation of auger-cast piles can include loss of integrity of the concrete if the auger is withdrawn faster than the placement of the concrete and inconsistent contact pressure during concrete placement caused by variations in the pumping pressure. The pile installation contractor should be selected based on their experience in the installation of auger-cast piles. We should review their procedures prior to awarding the contract and we recommend that at least two load tests be performed to verify the actual capacity of the piles.

We recommend that integrity testing be performed to verify the continuity of the completed piles. The integrity tests shall be performed in accordance with the ASTM D5822 test method.

SITE COEFFICIENT AND SEISMIC ZONATION

General

The following code values are based on the current site conditions. If ground improvement was to be performed at the site, the soil profile types may change, for either building code as discussed below, from “soft” to “stiff”.

1997 Uniform Building Code (UBC)

The structure can be designed to resist earthquake forces in accordance with the 1997 Uniform Building Code (UBC). Based on Figure 16-2 of the 1997 UBC, the site is located within Seismic Zone 4. We determined the shear wave velocity of the soils within our CPT explorations. The measured shear wave velocity (presented in Appendix A) yield an average velocity of approximately 500 feet per second. The Soil Profile Type, as defined in Section 1636 and shown in Table 16-J of the 1997 UBC, may be assumed to be Type S_E, Soft Soil Profile.

The closest active fault to the site is the Palos Verdes fault, a Type B seismic source, as shown on Map M-33 of the International Conference of Building Officials publication dated February 1998, "Maps of Known Active Fault Near Source Zones in California and Adjacent Portions of Nevada" to be used in conjunction with the 1997 UBC. The site is 7.6 from kilometers of the Palos Verdes fault.

The near-source factors, N_a and N_v, should be taken as 1.0 and 1.1, respectively, according to Tables 16-S and 16-T from the 1997 UBC. The seismic coefficients, C_a and C_v, may be determined for these near-source factors and for the Soil Profile Type S_E.

2006 International Building Code (IBC)

Alternatively, the structure can be designed to resist earthquake forces following the 2008 California Building Code, which is based on the 2006 International Building Code (IBC). The Soil Profile Type, as defined in Section 1615.1.5 and Table 1615.1.1 of the 2003 IBC, may be assumed to be Site Class E, Soft Soil Profile.

The mapped maximum considered earthquake spectral response accelerations, S_s and S_1, should be taken as 1.5 and 0.6, respectively, according to Figures 1615(3) and 1615(4) from the 2003 IBC. The site coefficients, F_a and F_v, may be determined for these near-source factors and for the Site Class E.

FLOOR SLAB SUPPORT

If the subgrade is prepared as recommended in the following section on grading, the structure floor slab can be supported on grade. Construction activities and exposure to the environment can cause deterioration of the prepared subgrade. Therefore, we recommend that our field representative observe the condition of the final subgrade soils immediately prior to slab-on-grade construction, and, if necessary, perform further density and moisture content tests to determine the suitability of the final prepared subgrade.

If vinyl or other moisture-sensitive floor covering is planned, we recommend that the floor slab in those areas be underlain by a capillary break consisting of either an impermeable membrane or a 4-inch-thick layer of gravel. A 2-inch-thick layer of sand should be placed between the subgrade and the membrane to decrease the possibility of damage to the membrane. Our recommended gradation for the gravel is presented in Table 5, Capillary Break.

Table 5, Capillary Break

Sieve Size	Percent Passing
¾ inch	90 - 100
No. 4	0 - 10
No. 100	0 - 3

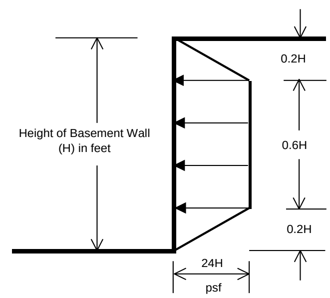
A low-slump concrete should be used to minimize possible curling of the slab. A 2-inch-thick layer of coarse sand can be placed over the impermeable membrane to reduce slab curling. If this sand bedding is used, care should be taken during the placement of the concrete to prevent displacement of the sand. The concrete slab should be allowed to cure properly before placing vinyl or other moisture-sensitive floor covering.

RETAINING WALLS

Lateral Earth Pressure

For design of cantilevered retaining walls, where the surface of the backfill is level, it can be assumed that drained soils will exert a lateral pressure equal to that developed by a fluid with a density of 30 pounds per cubic foot. In addition to the recommended earth pressure, the walls should be designed to resist any applicable surcharges due to storage or traffic loads.

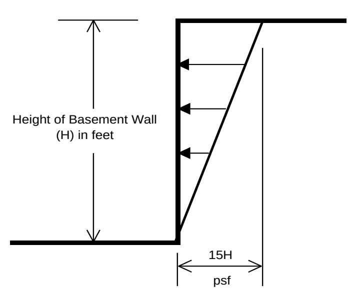
For design of braced basement walls, where the surface of the backfill is level, it should be assumed that the soils will exert a trapezoidal distribution of lateral earth pressure where the maximum pressure is equal to 24H in pounds per square foot, where H is the height of the basement wall in feet. The recommended pressure distribution is shown in the following sketch:



In addition to the recommended earth pressure, walls adjacent to streets or other areas subject to vehicular traffic should be designed to resist a uniform lateral pressure of 100 pounds per square foot, acting as a result of an assumed 300 pounds per square foot surcharge behind the walls due to normal vehicular traffic. If the traffic is kept back at least 10 feet from the walls, the traffic surcharge can be neglected.

Seismic Lateral Earth Pressure

In addition to the above-mentioned lateral earth pressures, retaining walls more than 12 feet high should be designed to support a seismic active pressure. The recommended seismic active pressure distribution on the wall is shown in the following diagram with the maximum pressure equal to 15H pounds per square foot, where H is the wall height in feet.



Drainage

Retaining walls should be designed to resist hydrostatic pressures or be provided with a drain pipe or weepholes. The drain could consist of a 4-inch-diameter perforated pipe placed with perforations down at the base of the wall. The pipe should be sloped at least 2 inches in 100 feet and surrounded by filter gravel. The filter gravel should meet the requirements of Class 2 Permeable Material as defined in the current State of California, Department of Transportation, Standard Specifications.

If Class 2 Permeable Material is not available, ¾-inch crushed rock or gravel separated from the on-site soils by an appropriate filter fabric can be used. The crushed rock or gravel should have less than 5% passing a No. 200 sieve.

PAVING

To provide support for paving, the subgrade soils should be prepared as recommended in the following section on grading. Compaction of the subgrade, including trench backfills, to at least 90%, and achieving a firm, hard, and unyielding surface will be important for paving support. The preparation of the paving area subgrade should be done immediately prior to placement of the base course. Proper drainage of the paved areas should be provided since this will reduce moisture infiltration into the subgrade and increase the life of the paving.

To provide data for design of asphalt paving, the R-value of a sample of the upper soils was determined. The test results, which indicate an R-value of 73, are presented in Appendix A.

The required paving and base thicknesses will depend on the expected wheel loads and volume of traffic (Traffic Index or TI). Assuming that the paving subgrade will consist of the on-site or comparable soils with an R-value of at least 40 and compacted to at least 90% as recommended, the minimum recommended paving thicknesses are presented in Table 6, Recommended Paving Thicknesses.

Table 6, Recommended Paving Thicknesses

Traffic Use	Traffic Index	Asphalt Concrete (inches)	Base Course (inches)
Auto Parking	4.0	3	4
Drives	5.5	3	6
Delivery	7.0	4	8

We can determine the recommended paving and base course thicknesses for other Traffic Indices if required. Careful inspection is recommended to check that the recommended thicknesses or greater are achieved, and that proper construction procedures are followed.

The base course should conform to requirements of Section 26 of State of California Department of Transportation Standard Specifications (Caltrans), latest edition, or meet the specifications for untreated base as defined in Section 200-2 of the latest edition of the Standard Specifications for Public Works Construction (Green Book). The base course should be compacted to at least 95%.

GRADING

The existing fill soils are not uniformly well compacted and are not considered suitable for support of foundations, floor slabs on grade, or paving. The existing fill soils should be excavated and replaced as properly compacted fill. All required fill should be uniformly well compacted and observed and tested during placement. The on-site soils can be used in any required fill.

Site Preparation

After the site is cleared and any existing fill soils are excavated as recommended, the exposed natural soils should be carefully observed for the removal of all unsuitable deposits. Next, the exposed soils should be scarified to a depth of 6 inches, brought to near-optimum moisture content, and rolled with heavy compaction equipment. At least the upper 6 inches of the exposed soils should be compacted to at least 90% of the maximum dry density obtainable by the ASTM Designation D1557 method of compaction.

Excavations and Temporary Slopes

The soils are sandy and will not stand vertically without caving. Excavations deeper than about 2 feet should be sloped back at 1:1 (horizontal to vertical) or shored for safety. Unshored excavations should not extend below a plane drawn at 1½:1 extending downward from adjacent existing footings.

Excavations should be observed by personnel of our firm so that any necessary modifications based on variations in the soil conditions can be made. All applicable safety requirements and regulations, including OSHA regulations, should be met.

Compaction

Any required fill should be placed in loose lifts not more than 8 inches thick and compacted to at least 90% of the maximum density as determined by the ASTM D1557 method of compaction. The moisture content of the on-site soils at the time of compaction should vary no more than 2% below or above optimum moisture content.

Basement and Retaining Wall Backfill

All required basement and retaining wall backfill should be mechanically compacted in layers; flooding should not be permitted. Proper compaction of backfill will be necessary to minimize settlement of the backfill and to minimize settlement of overlying slabs and paving. The on-site soils can be used in the compacted backfill. The exterior grades should be sloped to drain away from the foundations to prevent ponding of water.

Some settlement of the backfill should be expected, and any utilities supported therein should be designed to accept differential settlement, particularly at the points of entry to the structure. Also, provisions should be made for some settlement of concrete walks supported on backfill.

Material for Fill

The on-site soils, less any debris or organic matter, can be used in required fills. Cobbles larger than 4 inches in diameter should not be used in the fill. Any required import material should consist of relatively non-expansive soils with an expansion index of less than 35. The imported materials should contain sufficient fines (binder material) so as to be relatively impermeable and result in a stable subgrade when compacted. All proposed import materials should be approved by our personnel prior to being placed at the site.

GEOTECHNICAL OBSERVATION

The reworking of the upper soils and the compaction of all required fill should be observed and tested during placement by a representative of our firm. This representative should perform at least the following duties:

- Observe installation of the soil-cement columns.
- Observe the exposed subgrade in areas to receive fill to check that the desired excavation has been achieved and that suitable soils are exposed.
- Observe the fill for uniformity during placement.
- Test the compacted fill for field density and compaction to determine the percentage of compaction achieved during backfill placement.
- Observe the indicator pile installation, the performing of pile load tests and the installation of the production piles.

The governmental agencies having jurisdiction over the project should be notified prior to commencement of grading so that the necessary grading permits can be obtained and arrangements can be made for required inspection(s). The contractor should be familiar with the inspection requirements of the reviewing agencies and the content of this report.

BASIS FOR RECOMMENDATIONS

The recommendations provided in this report are based upon our understanding of the described project information and on our interpretation of the data collected during our subsurface explorations. We have made our recommendations based upon experience with similar subsurface conditions under similar loading conditions. The recommendations apply to the specific project discussed in this report; therefore, any change in the structure configuration, loads, location, or the site grades should be provided to us so that we can review our conclusions and recommendations and make any necessary modifications.

The recommendations provided in this report are also based upon the assumption that the necessary geotechnical observations and testing during construction will be performed by representatives of our firm. The field observation services are considered a continuation of the geotechnical investigation and essential to check that the actual soil conditions are as expected. This also provides for the procedure whereby the client can be advised of unexpected or changed conditions that would require modifications of our original recommendations. In addition, the presence of our representative at the site provides the client with an independent professional opinion regarding the geotechnically related construction procedures. If another firm is retained for the geotechnical observation services, our professional responsibility and liability would be limited to the extent that we would not be the geotechnical engineer of record.

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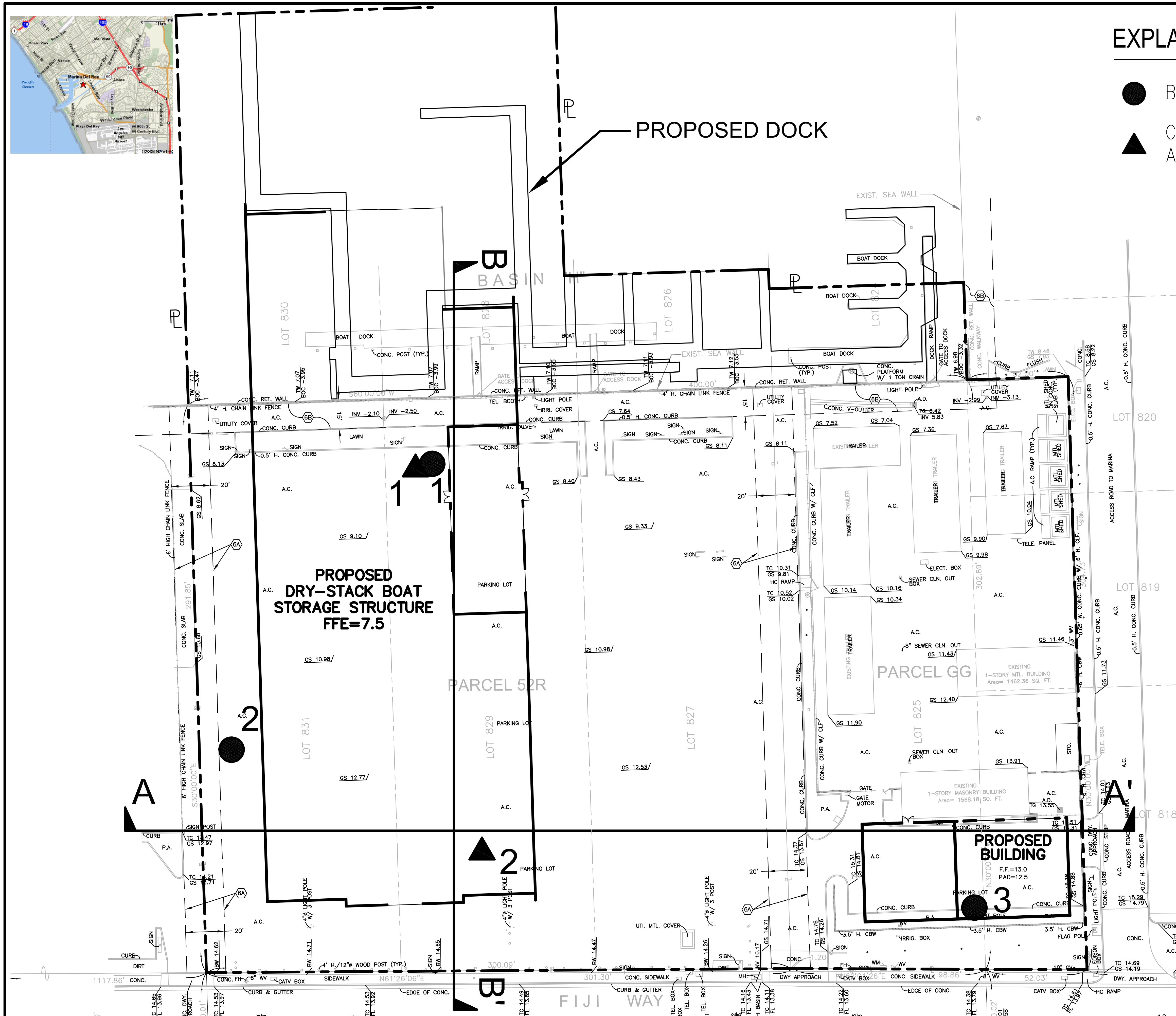

EXPLANATION

● BORING LOCATION AND NUMBER

▲ CONE PENETRATION TEST LOCATION AND NUMBER

GRAPHIC SCALE

0 50 100 150Feet

REFERENCE: TOPOGRAPHIC SURVEY, UNDATED BY B & E ENGINEERS

VAN BEVEREN & BUTELO, INC.

706 W. Broadway, Suite 201, Glendale, CA 91204

VOICE (818) 543-4560 FAX (818) 543-4565

PLOT PLAN

– FIGURE 1 –

JOB NO.	07-025
DRAWN BY: LL	CHECKED BY: VL
DATE:	FEB 25, 2008

NOTES:

THESE SECTIONS ARE BASED ON THE GEOLOGIC, AND SOIL CONDITIONS ENCOUNTERED IN OUR EXPLORATIONS. THE CONDITIONS BETWEEN SUCH LOCATIONS HAVE BEEN INTERPOLATED AND COULD VARY FROM THOSE ILLUSTRATED. THESE SECTIONS ARE INTENDED FOR DESCRIPTIVE PURPOSES ONLY.

VAN BEVEREN & BUTELO, INC.
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GEOLOGIC CROSS SECTIONS
– FIGURE 2 –

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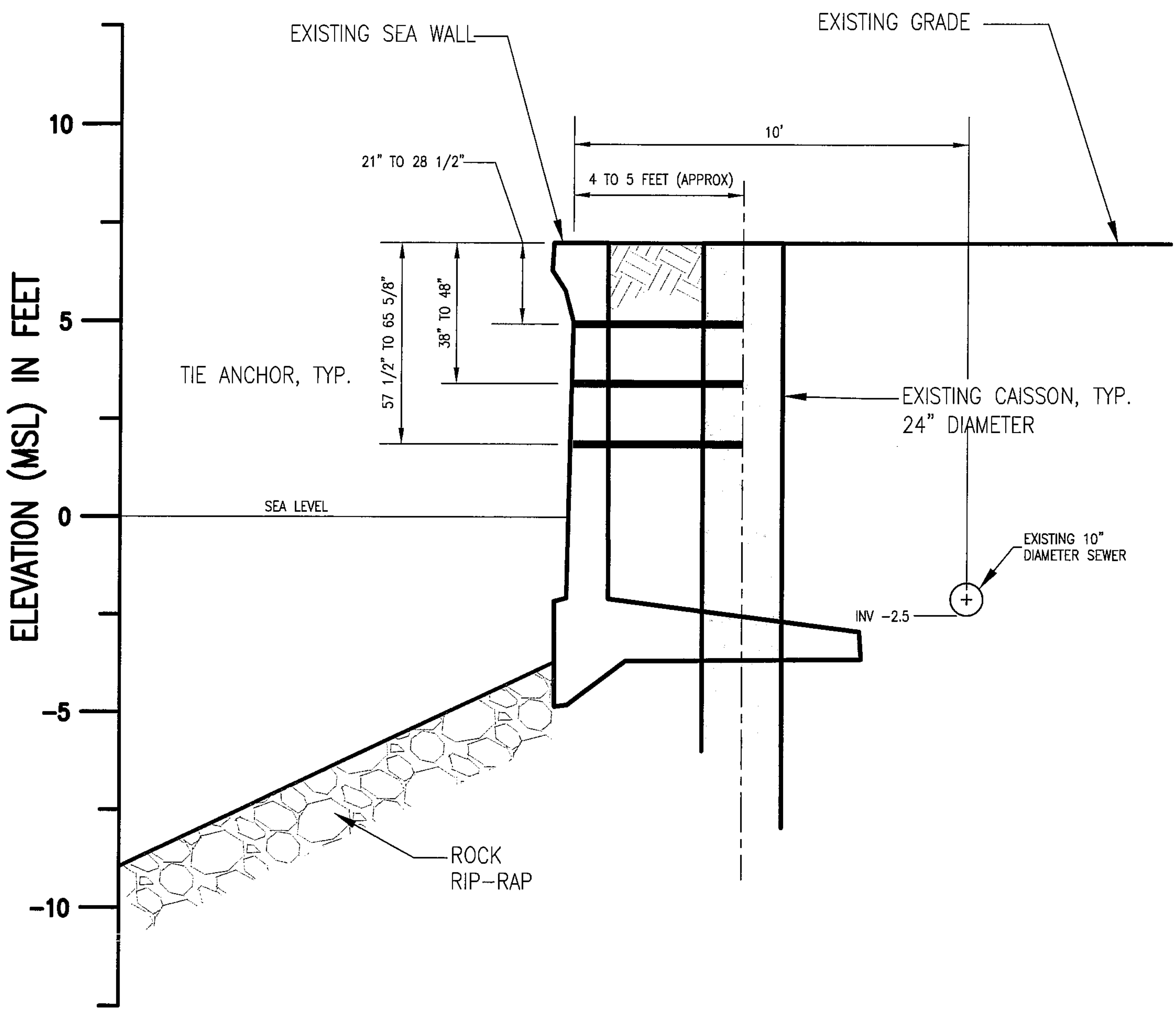
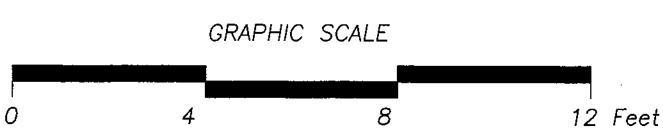
DATE:	FEB 25, 2008





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DETAIL
- FIGURE 3 -

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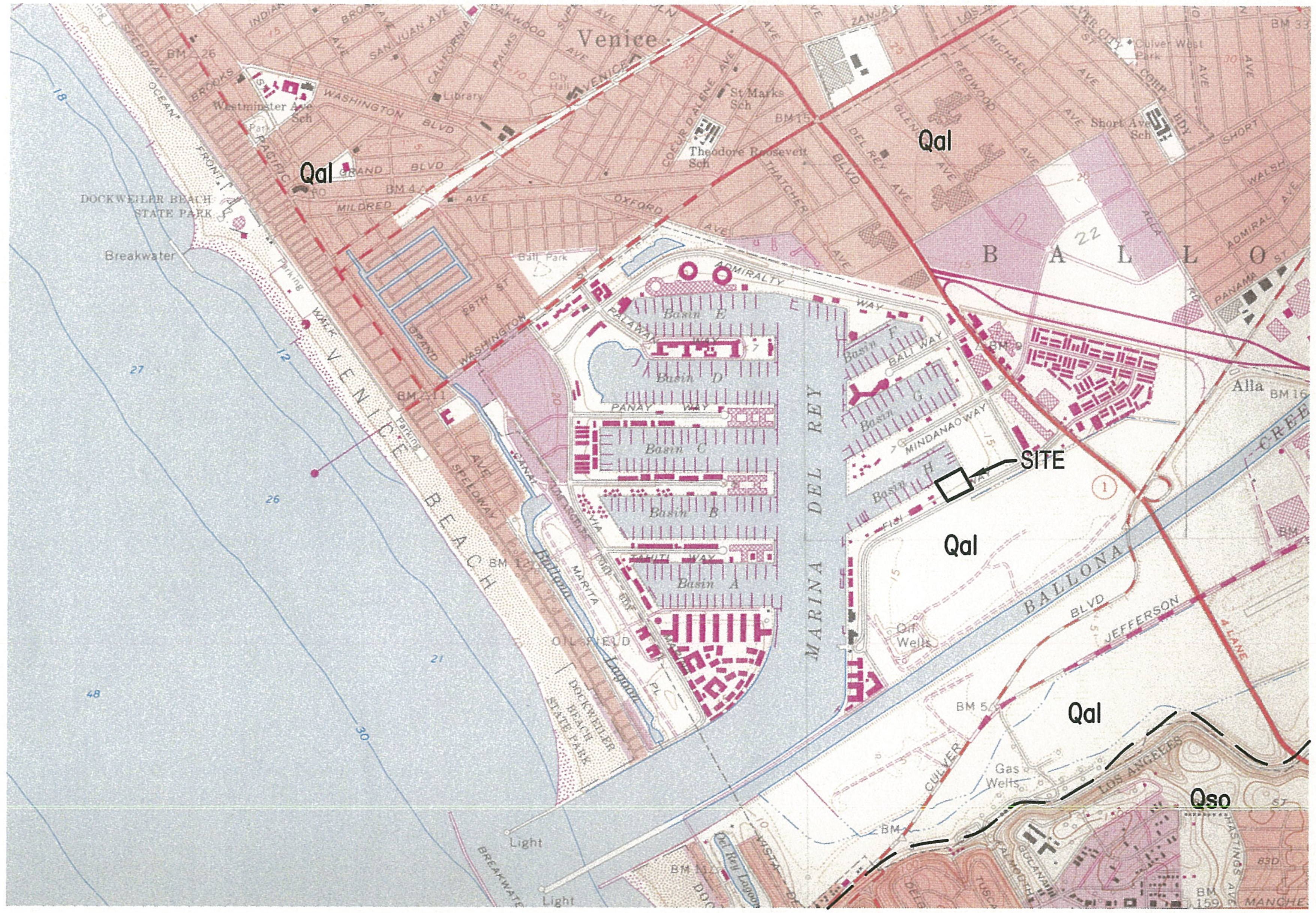
DRAWN BY: LL	CHECKED BY: JJB
DATE:	FEB 25, 2008



EXPLANATION

Qal ALLUVIUM

Qso OLDER DUNE SAND

GEOLOGIC CONTACT
DASHED WHERE APROXIMATE

SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET–DATUM IS MEAN LOWER LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

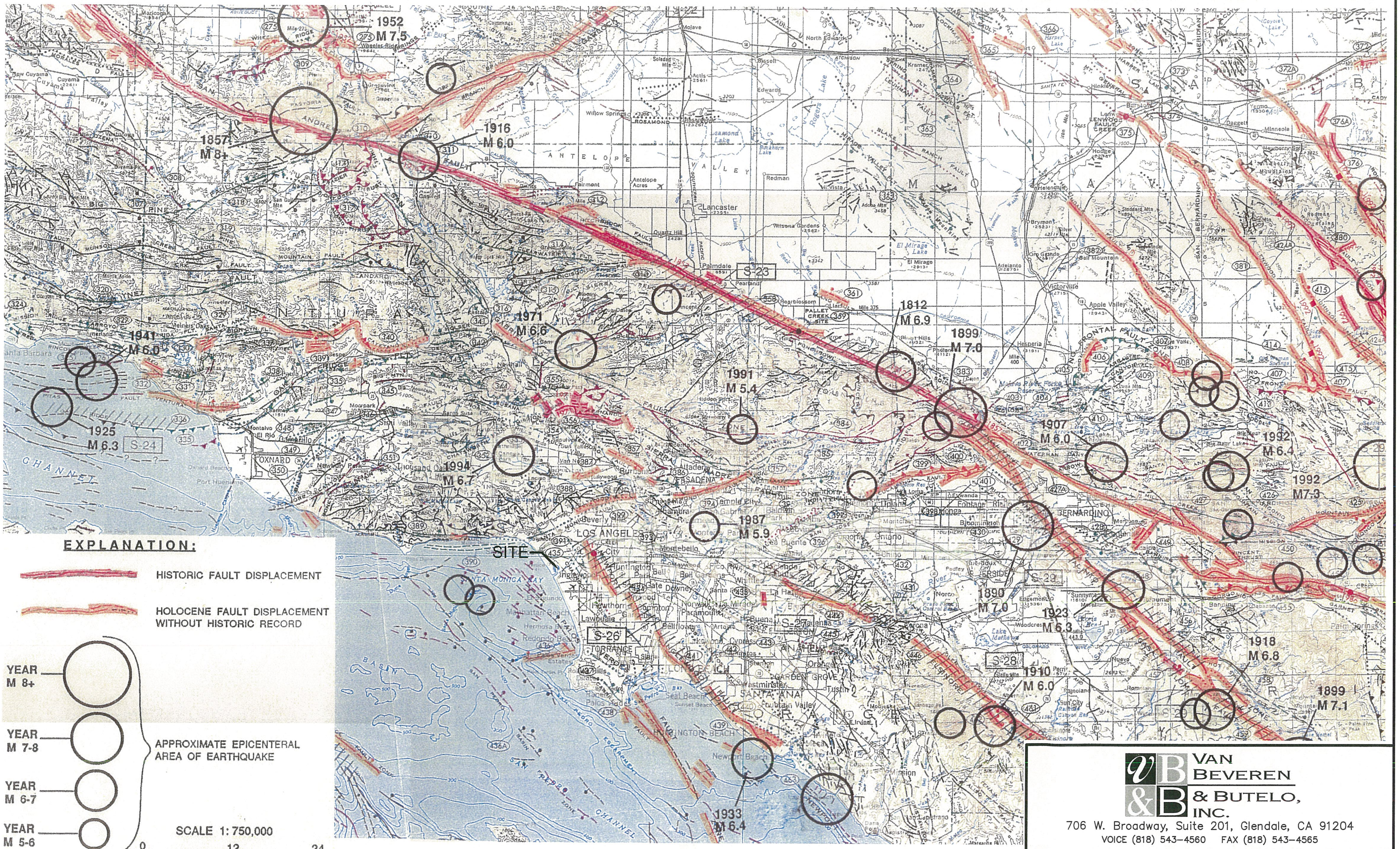
ROAD CLASSIFICATION

Heavy-duty · Light-duty
Medium-duty · Unimproved dirt
Interstate Route · State Route

DRAWING REFERENCE: USGS, VENICE 7½ MINUTE QUADRANGLE
AERIAL GEOLOGY FROM DWR BULLETIN 104, PLATE 38

VAN BEVEREN & BUTELO, INC.
706 W. Broadway, Suite 201, Glendale, CA 91204
VOICE (818) 543-4560 FAX (818) 543-4565

REGIONAL GEOLOGIC MAP - FIGURE 4 -	JOB NO. 07-025
	DRAWN BY: LL · CHECKED BY: JB
	DATE: FEB 25, 2008



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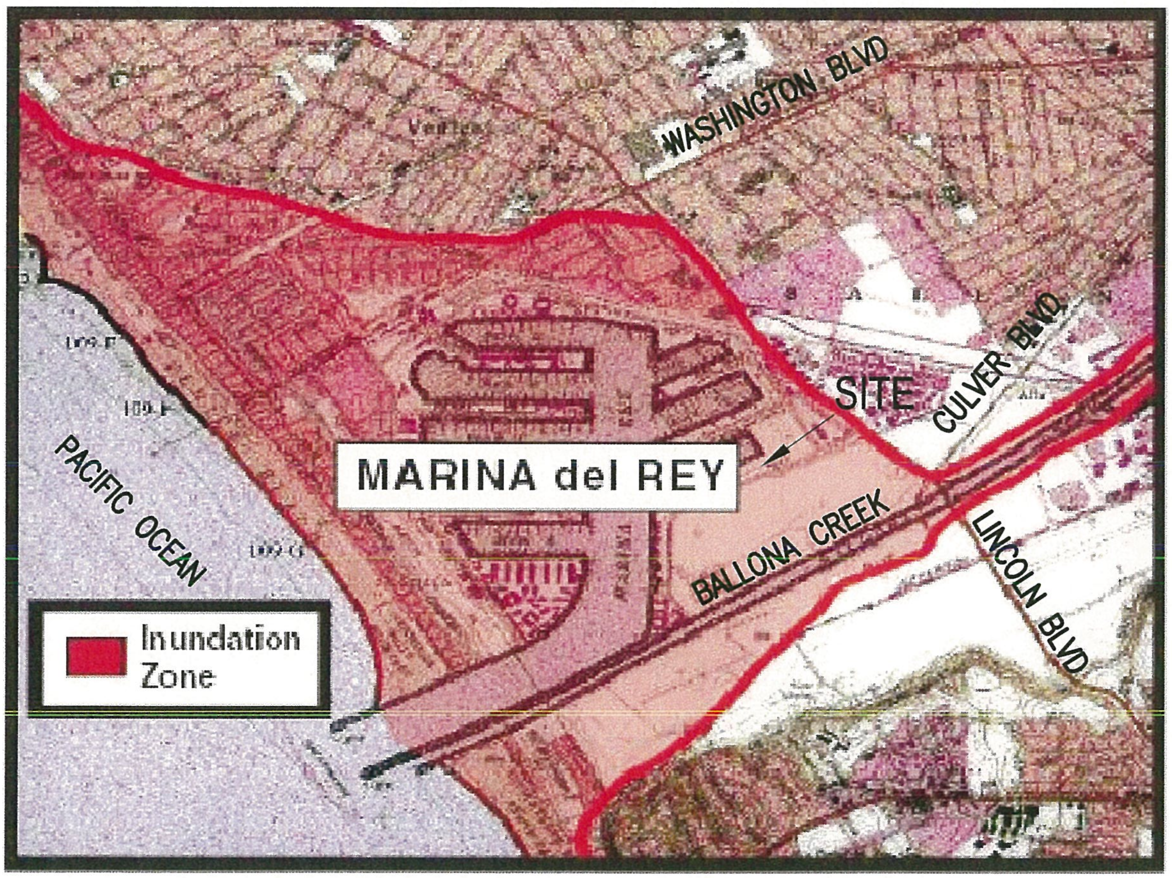
REGIONAL SEISMICITY MAP

- FIGURE 5 -

JOB NO. 07-025	
DRAWN BY: LL	CHECKED BY: VL
TO ACCOMPANY REPORT DATED: FEB 25, 2008	

NOT TO SCALE



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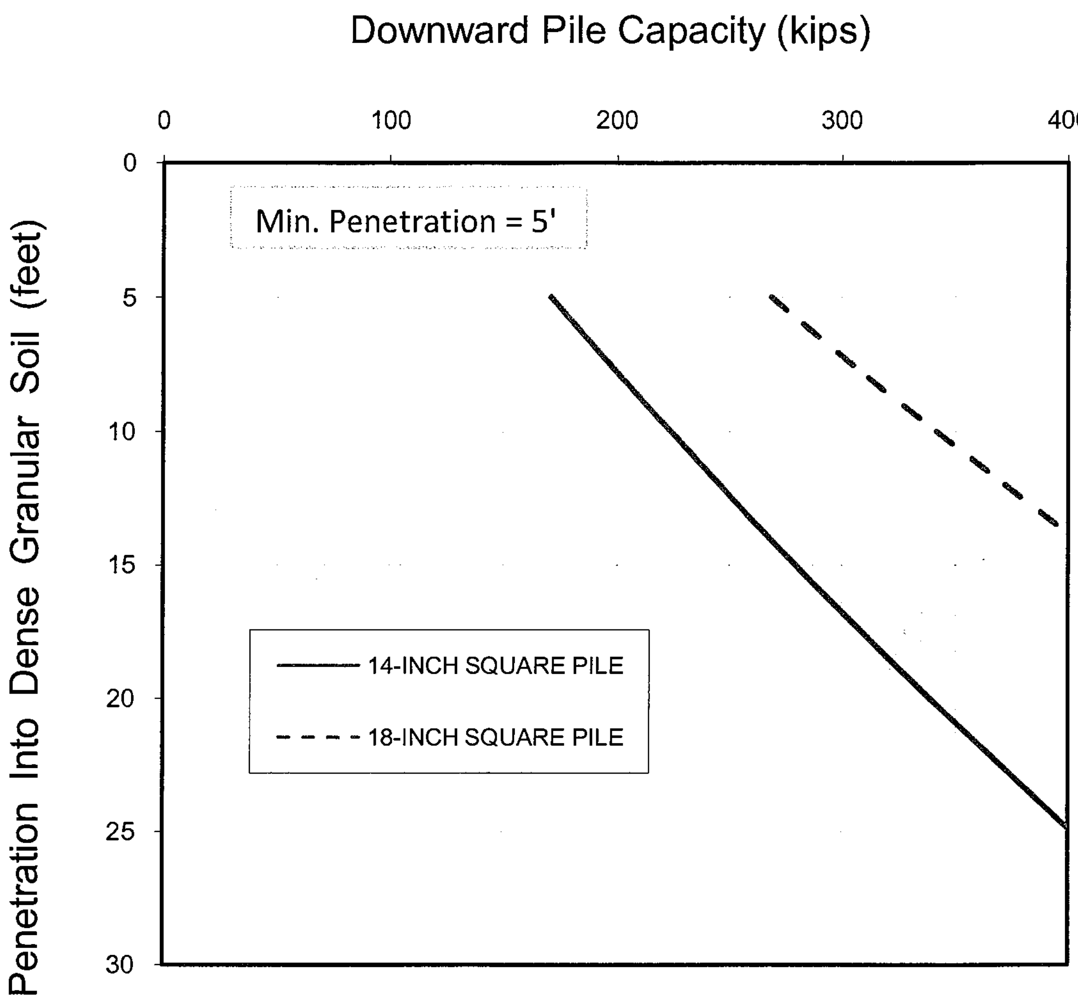
VOICE (818) 543-4560 FAX (818) 543-4565

TSUNAMI INUNDATION MAP - FIGURE 6 -	JOB NO. 07-025	
	DRAWN BY: LL	CHECKED BY: VL
	DATE: FEB 25, 2008	

REFERENCE: EISNER, et al, 2001, ITS 2001 PROCEEDINGS



NOTES:

1) The indicated capacities are for dead plus live loads.
   A one-third increase may be used for temporary loads (wind, seismic, or downdrag).

2) The indicated capacities do not include downdrag loads.

3) Uplift capacities may be taken as one-half the downward capacities.

4) Piles in groups shoud be spaced at least 2½ widths or diameters, but at least 3 feet on centers

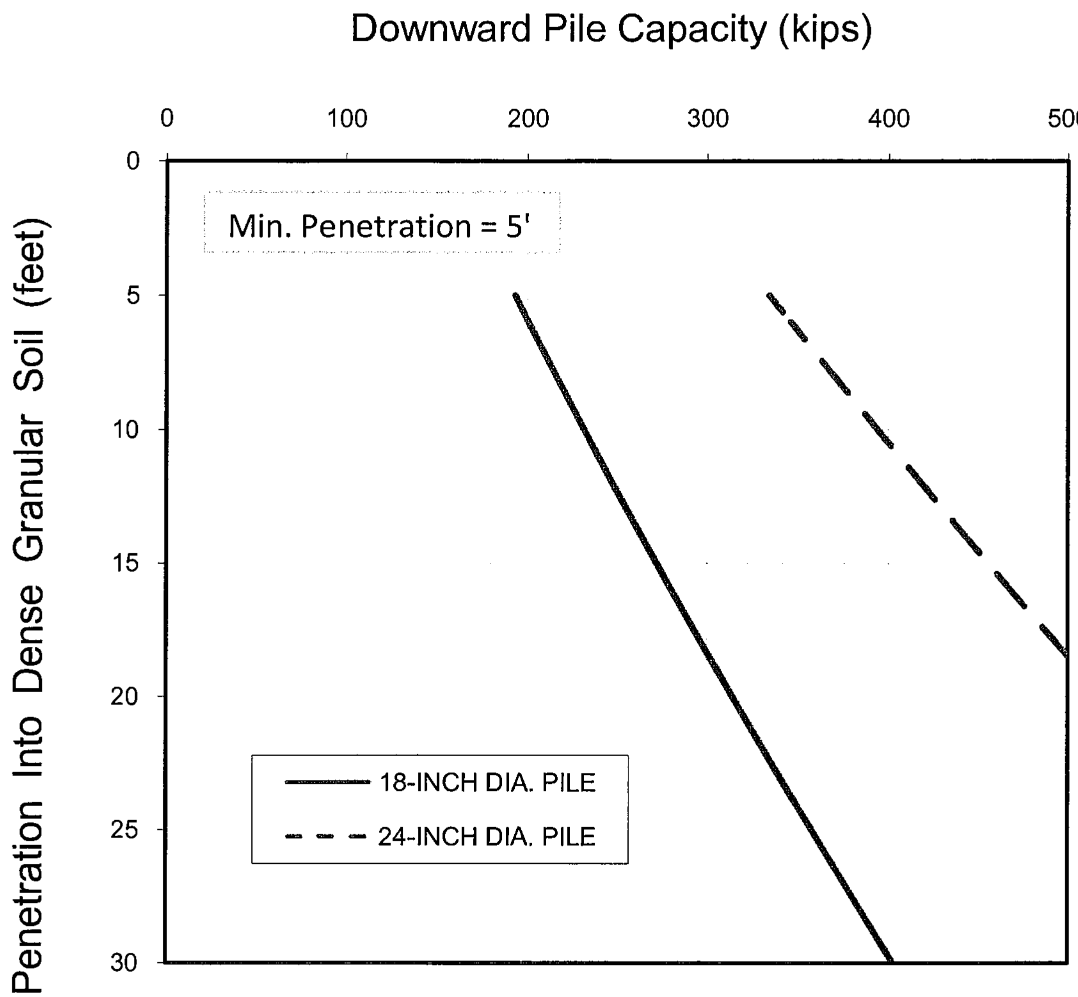
5) The indicated values are based on the strength of the soils; the actual pile capacities may be limited to lesser values by the strength of the piles.

DRIVEN PILE CAPACITIES

VAN BEVEREN & BUTELO, INC.

Project No.: 07-025 Date: October 22, 2007 By: VL

FIGURE 7.1



NOTES:

1) The indicated capacities are for dead plus live loads. A one-third increase may be used for temporary loads (wind, seismic, or downdrag).
2) The indicated capacities do not include downdrag loads.
3) Uplift capacities may be taken as one-half the downward capacities.
4) Piles in groups shoud be spaced at least 2½ widths or diameters, but at least 3 feet on centers
5) The indicated values are based on the strength of the soils; the actual pile capacities may be limited to lesser values by the strength of the piles.

AUGER-CAST PILE CAPACITIES

Van Beveren & Butelo, Inc.

Project No.: 07-025 Date: October 22, 2007 By: VL

FIGURE 7.2

APPENDIX A

EXPLORATIONS AND LABORATORY TESTS

APPENDIX A
EXPLORATIONS AND LABORATORY TESTS

BORINGS

The soil conditions beneath the site were explored by drilling three borings at the locations shown on Figure 1. The borings were drilled to depths of 61 to 76 feet below the existing grade using 5-inch-diameter rotary wash-type drilling equipment with drilling mud to prevent caving. The mud was removed following completion of the drilling to permit measurement of the water level.

The soils encountered were logged by our technical personnel, and undisturbed and bulk samples were obtained for laboratory inspection and testing. The logs of the borings are presented on Figures A-1.1 through A-1.3; the depths at which undisturbed samples were obtained are indicated to the left of the boring logs. The number of blows required to drive the sampler 12 inches using a 300-pound hammer falling 24 inches is indicated on the logs. In addition to obtaining undisturbed samples, standard penetration tests (SPTs) were performed in the borings; the results of the tests are indicated on the logs. The soils are classified in the accordance with the Unified Soil Classification System described in Figure A-2.

CONE PENETRATION TESTS

To obtain data for evaluating the liquefaction potential of the soils underlying the site, we retained Kehoe Testing & Engineering to perform two CPTs at the locations shown on Figure 2. The CPTs extended to depths of 51 to 58 feet below the existing grade. The groundwater was measured in the holes after the tests and prior to backfilling. Shear wave measurements also were obtained at 10-foot depth intervals at location CPT-2.

The CPTs were performed in accordance with ASTM Designation D5778. The CPTs were pushed using a 30-ton CPT rig using a 15-square-centimeter cone. Data was recorded at approximately 2.5-centimeter intervals. The results of the CPT program are presented in Figures A-3.1 through A-3.7.

LABORATORY TESTS

Laboratory tests were performed on selected samples obtained from the borings to aid in the classification of the soils and to determine their engineering properties.

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

Direct shear tests were performed on selected undisturbed samples to determine the strength of the soils. The tests were performed after soaking to near-saturated moisture content and at various surcharge pressures. The yield-point values determined from the direct shear tests are presented on Figures A-4.1 and A-4.2, Direct Shear Test Data.

Confined consolidation tests were performed on five undisturbed samples to determine the compressibility of the soils. Water was added to the samples prior to the addition of the load increments. The results of the tests are presented on Figures A-5.1 through A-5.3, Consolidation Test Data.

To determine the particle size distribution of the soils and to aid in classifying the soils, mechanical analyses and hydrometer tests were performed on selected samples. The results of the mechanical analyses and hydrometer tests, where applicable, are presented on Figures A-6.1 through A-6.3, Grain Size Distribution Test Data.

In addition to the full mechanical analyses, tests to determine the percentage of fines (material passing through a No. 200 sieve) in selected samples were performed. The results of these tests are presented on the boring logs.

To aid in the classification of the soils, tests to determine the Atterberg Limits of selected samples were performed. The results of the tests are presented on the boring logs.

To provide information for paving design, a stabilometer test ("R" value test) was performed on a sample of the upper soils. The test was performed for us by LaBelle·Marvin Professional Pavement Engineering. The results of the test are presented on Figures A-7.1 and A-7.2.

A soil corrosivity study was performed on samples of the on-site soils by Atlantic Consultants. The results of the study are presented in their report dated August 23, 2007 which is presented on Figures A-8.1 and A-8.2.

BORING 1

Date Drilled: July 23, 2007
Equipment Used: Rotary Wash (5-inch diameter)

Depth to Water: Groundwater at 7 feet
Driving Weight & Drop: 300 lbs/24" drop
(140 lbs/30" for SPT)

SURFACE ELEVATION: 8 feet MSL*

ELEVATION (feet)	DEPTH (feet)	MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)	DESCRIPTION
						4" Asphalt Concrete; 3" Base Course
						FILL SM - SILTY SAND - fine, gray
		8.8	129	31		
5						
	5	32.3			10	
						ESTUARY DEPOSITS CL - CLAY - little sand, gray GROUNDWATER
		46.7	78	10		
0						
	10					
		54.4			3	[LL = 33, PI = 10]
-5						SM - SILTY SAND - fine, some shell fragments, gray
				7		[NO SAMPLE RECOVERY]
	15					
		45.9			6	Hydrogen sulfide odor [41% Passing No. 200 Sieve]
						MH - SILT - dark greenish gray, hydrogen sulfide odor [LL = 55, PI = 24]
-10						
	20	60.3	64	6		
				1		
						CL - CLAY - some thin sandy layers, some shell fragments, dark gray, hydrogen sulfide odor
-15		30.9	92	4		
	25					
		31.0			1	[LL = 35, PI = 17]
-20						
		35.8	90	9		[71% Passing No. 200 Sieve]
	30					SM - SILTY SAND - fine, few thin peat layers (up to 1/4" thick), gray, slight hydrogen sulfide odor [47% Passing No. 200 Sieve]
					13	
-25						
	35	26.9	98	50		[25% Passing No. 200 Sieve]
-30		32.1			13	[37% Passing No. 200 Sieve]
						PT - PEAT - dark brown
	40					

(Continued on next page)

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.1a

The log of subsurface conditions shown hereon applies only at the specific boring location and at the date indicated. It is not warranted to be representative of subsurface conditions at other locations and times.

Job No: 07-025 By: BL Date: 7-26-2007 Checked: Printed: 10-5-07 [LOG FOR FIELD; 07-025.GPJ]

BORING 1
(Continued)

Date Drilled: July 23, 2007
Equipment Used: Rotary Wash (5-inch diameter)

Depth to Water: Groundwater at 7 feet
Driving Weight & Drop: 300 lbs/24" drop (140 lbs/30" for SPT)

SURFACE ELEVATION: 8 feet MSL*

ELEVATION (feet)	DEPTH (feet)	MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)	SAMPLE LOCATION	Description
		71.8	38		12		
-35		54.7		5			
	45	73.5	39		18		
-40	50	47.5		28			
-45		11.9	119		50		**DENSE GRANULAR SOIL** SW - SAND - fine to medium, trace gravel (up to 3/8 inch in size), light gray
-50	55						
	60	20.7	113		50		
-55	65						
-60	70						
-65	75						
-70	80						

END OF BORING AT 61 FEET.

Notes

1. Fill encountered to depth of 6 feet.
2. Drilling mud used in drilling process; mud removed at completion of drilling.
3. Groundwater measured at a depth of 7 feet 4 hours after completion of drilling.
4. Boring backfilled with cement-bentonite grout and patched with asphalt.

* Boring elevations based on topographic survey; see Figure 1.

The log of subsurface conditions shown hereon applies only at the specific boring location and at the date indicated. It is not warranted to be representative of subsurface conditions at other locations and times.

Job No: 07-025 By: BL Date: 7-26-2007 Checked: [signature] Printed: 10-5-07 [LOG FOR FIELD: 07-025.GPJ]

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.1b

BORING 2

Date Drilled: July 23, 2007
Equipment Used: Rotary Wash (5-inch diameter)
Depth to Water: Groundwater at 8 feet
Driving Weight & Drop: 300 lbs/24" drop (140 lbs/30" for SPT)

SURFACE ELEVATION: 11 feet MSL*

ELEVATION (feet)	DEPTH (feet)	MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)	DESCRIPTION
10						4" Asphalt Concrete; 14" Base Course
						FILL SP - SAND - fine, gray
		20.3	101		11	SC - CLAYEY SAND - fine, few gravel, some iron oxide stains, greenish gray
	5	25.5	103		9	SP - SAND - fine, gray
5		31.6	95		6	SM - SILTY SAND - fine, trace clay, trace gravel, light greenish gray
						▽GROUNDWATER
		36.0	86		1	**ESTUARY DEPOSITS** CL - CLAY - little sand, greenish gray
0	10	45.9	76		1	[LL = 33, PI = 14]
		28.4	94		17	ML - SANDY SILT - greenish gray [58% Passing No. 200 Sieve]
-5	15	37.7	88		6	[LL = 34; PI = 8]
					3	[NO SAMPLE RECOVERY]
-10	20	44.6		1		Hydrogen sulfide odor
						CL - CLAY - some shell fragments, greenish gray, hydrogen sulfide odor
	25	61.4	63		2	
-15		72.1		1		
-20	30	39.2	82		4	
		34.7		1		[LL = 34; PI = 15]
-25	35				18	ML - SANDY SILT - tracy clay, greenish gray [54% Passing No. 200 Sieve]
	40	29.3		10		

(Continued on next page)

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.2a

BORING 2

(Continued)

Date Drilled: July 23, 2007

Equipment Used: Rotary Wash (5-inch diameter)

Depth to Water: Groundwater at 8 feet

Driving Weight & Drop: 300 lbs/24" drop (140 lbs/30" for SPT)

SURFACE ELEVATION: 11 feet MSL*

ELEVATION (feet)	DEPTH (feet)	MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)	DESCRIPTION
-30						CL - CLAY - greenish gray
		51.2	71		7	PT - PEAT - dark gray
-35	45	60.2		7		ML - SILT - greenish gray [LL = 35; PI = 8]
		25.4	83		8	
-40	50	57.8		1		PT - PEAT - dark gray
-45	55	24.1	101		50	**DENSE GRANULAR SOIL** SM - SILTY SAND - fine, light gray, some gravel (up to 3" in size)
-50	60				50	[NO SAMPLE RECOVERY]

END OF BORING AT 61 FEET.

Notes

1. Fill encountered to depth of 8 feet.
2. Drilling mud used in drilling process; mud removed at completion of drilling.
3. Groundwater encountered at a depth of 8 feet 30 minutes after completion of drilling.
4. Boring backfilled with cement-bentonite grout and patched with asphalt.

Depth scale: 45, 50, 55, 60, 65, 70, 75, 80; Elevation scale: -30, -35, -40, -45, -50, -55, -60, -65

The log of subsurface conditions shown hereon applies only at the specific boring location and at the date indicated. It is not warranted to be representative of subsurface conditions at other locations and times.

Job No: 07-025 By: BL Date: 7-26-2007 Checked: Printed: 10-5-07 [LOG FOR FIELD; 07-025.GPJ]

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.2b

BORING 3

Date Drilled: July 20, 2007

Equipment Used: Rotary Wash (5-inch diameter)

Depth to Water: Groundwater at 7 feet

Driving Weight & Drop: 300 lbs/24" drop (140 lbs/30" for SPT)

SURFACE ELEVATION: 15 feet MSL*

Elevation (feet) scale: 10, 5, 0, -5, -10, -15, -20, -25 — Depth (feet) scale: 5, 10, 15, 20, 25, 30, 35, 40

MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)
11.3		43	
20.0	109		21
		27	
27.9	97		7
31.3			6
			15
38.1		4	
30.8	92		26
54.6		1	
49.8	72		4
43.6		1	
			10
41.7	75	14	

Description	Notes
3" Asphalt Concrete; no Base Course	
FILL SP - SAND - few gravel (up to ½" in size), brownish gray	
SP-SM - SAND - few gravel, brownish gray; ▽ GROUNDWATER; Gray	[7% Passing No. 200 Sieve]
ESTUARY DEPOSITS CL-ML - SILTY CLAY - greenish gray	[LL = 26, PI = 5]; [DISTURBED SAMPLE]
SM - SILTY SAND - fine, greenish gray; Hydrogen sulfide odor; Some thin layers of silt	[31% Passing No. 200 Sieve]; [13% Passing No. 200 Sieve]
MH - SILT - some shell fragments, greenish gray; Hydrogen sulfide odor	[LL = 53, PI = 22]
SM - SILTY SAND - fine, little clay, greenish gray	[42% Passing No. 200 Sieve]

(Continued on next page)

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.3a

Job No: 07-025 By: BL Date: 7-26-2007 Checked: Printed: 10-5-07 [LOG FOR FIELD; 07-025.GPJ]

BORING 3
(Continued)

Date Drilled: July 20, 2007
Equipment Used: Rotary Wash (5-inch diameter)

Depth to Water: Groundwater at 7 feet
Driving Weight & Drop: 300 lbs/24" drop (140 lbs/30" for SPT)

SURFACE ELEVATION: 15 feet MSL*

ELEVATION (feet)	DEPTH (feet)	MOISTURE (% of dry wt.)	DRY DENSITY (pcf)	N VALUE (SPT)	BLOW COUNT (blows / 12-inches)	DESCRIPTION
		36.2	86		14	
						CL - CLAY - dark gray
		43.0		4		[LL = 40, PI = 15]
-30	45					
		40.5	84		8	Some thin sand and peat layers, dark gray to black
-35	50	55.2		8		
		85.2	40		7	[90% Passing No. 200 Sieve]
						SM - SILTY SAND - fine, abundant peat, gray
-40	55					
				31		[15% Passing No. 200 Sieve]
						DENSE GRANULAR SOIL SP - SAND - fine, light gray
		15.0	120		50	Some gravel (up to ½" in size)
-45	60					SP - SAND with GRAVEL- fine to medium, light gray
		19.9		72		
-50	65					SP - SAND - fine to medium, few gravel (up to ½" in size), light gray
		16.9	115		50	
-55	70					
		20.9	104		50	
-60	75					
		20.2	106		50	END OF BORING AT 76 FEET.
-65	80					

Notes

1. Fill encountered to depth of 9 feet.
2. Drilling mud used in drilling process; mud removed at completion of drilling.
3. Groundwater measured at a depth of 7 feet at completion of drilling.
4. Boring backfilled with cement - bentonite grout and patched with asphalt.

The log of subsurface conditions shown hereon applies only at the specific boring location and at the date indicated. It is not warranted to be representative of subsurface conditions at other locations and times.

Job No: 07-025 By: BL Date: 7-26-2007 Checked: Printed: 10-5-07 [LOG FOR FIELD; 07-025.GPJ]

LOG OF BORING

VAN BEVEREN & BUTELO, INC.

FIGURE A-1.3b

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or grave - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel - sand - silt mixtures.
			GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand - silt mixtures
			SC	Clayey sands, sand - clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts and with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4 in. 3 in. 12 in.

U.S. STANDARD SIEVE SIZE

UNIFIED SOIL CLASSIFICATION SYSTEM

SAMPLE LEGEND:

Undisturbed Sample (Modified California Sampler)

No Sample Recovery

SPT Sample (Split Spoon Test)

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

VAN BEVEREN & BUTELO, INC.

FIGURE A-2

Kehoe Testing & Engineering Office: (714) 901-7270 Fax: (714) 901-7289 skehoe@msn.com	CPT Data 30 ton rig	Date: 20/Jul/2007 Test ID: CPT-1 Project: MarinaDelRey
	Customer: Van Beveren & Butelo, Inc Job Site: Fiji Way & Admiralty Way	

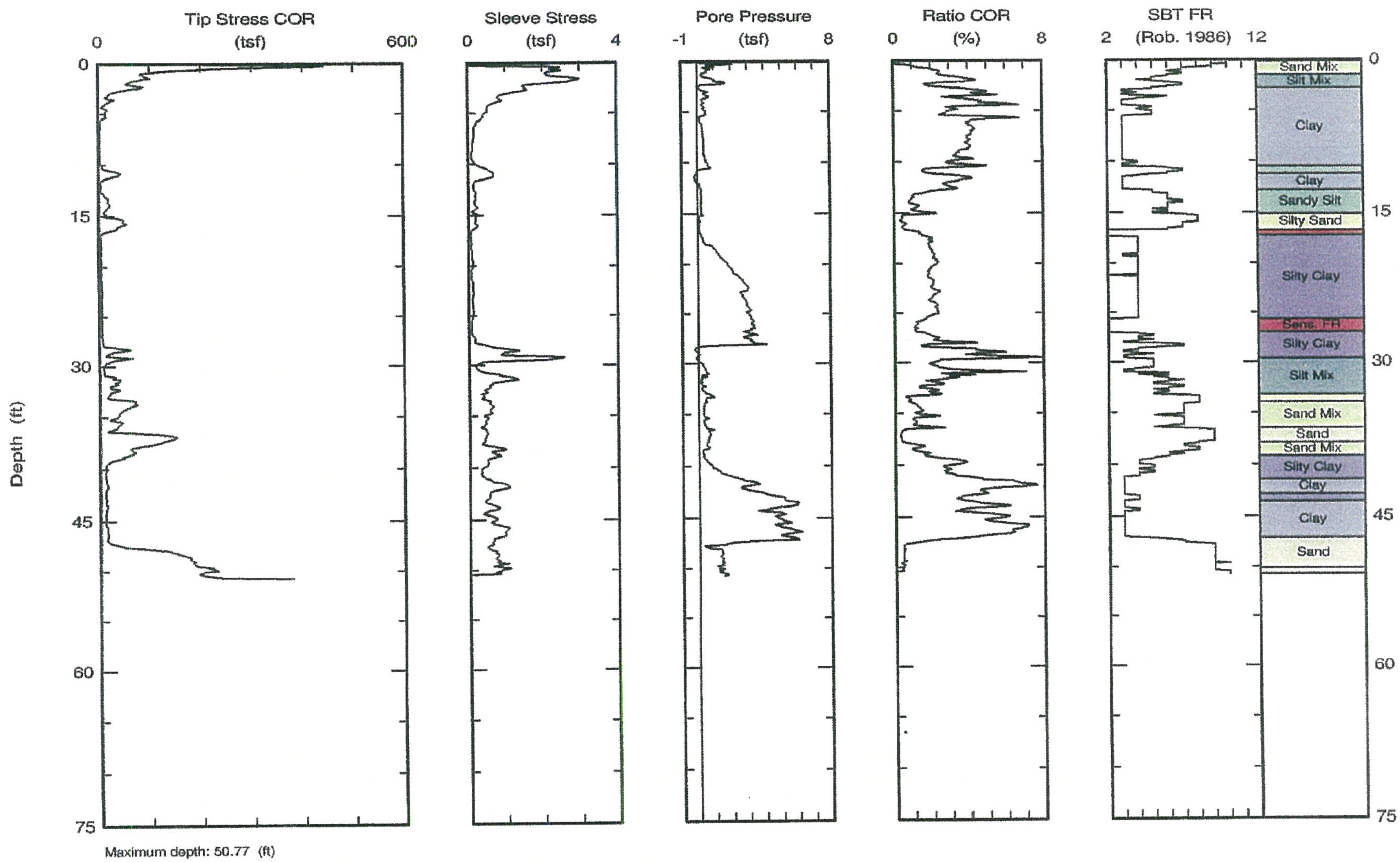


FIGURE A-3.1

Kehoe Testing & Engineering
Office: (714) 901-7270
Fax: (714) 901-7289
skehoe@msn.com

CPT Data
30 ton rig

Date: 20/Jul/2007
Test ID: CPT-2
Project: MarinaDelRey

Customer: Van Beveren & Butelo, Inc
Job Site: Fiji Way & Admiralty Way

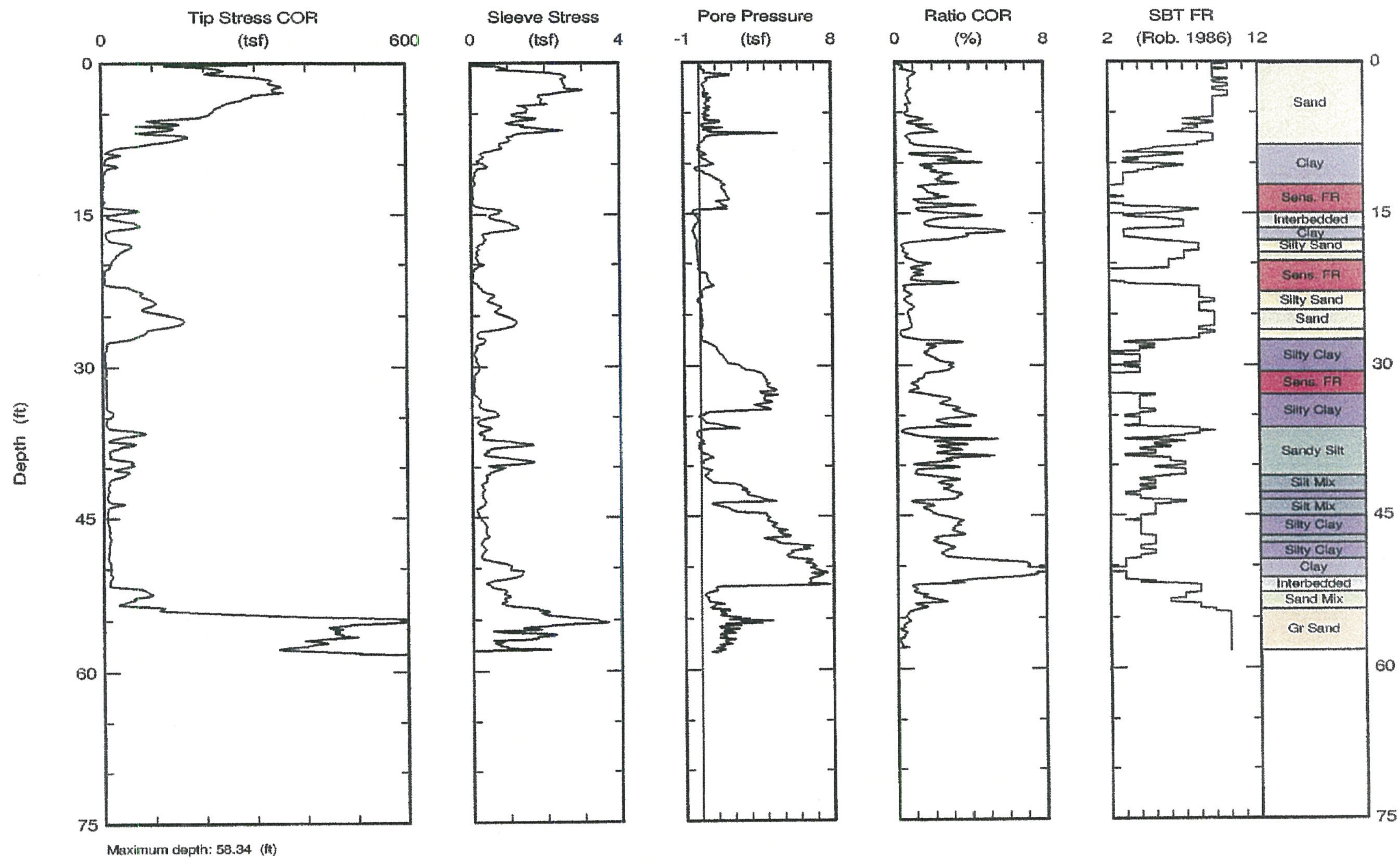
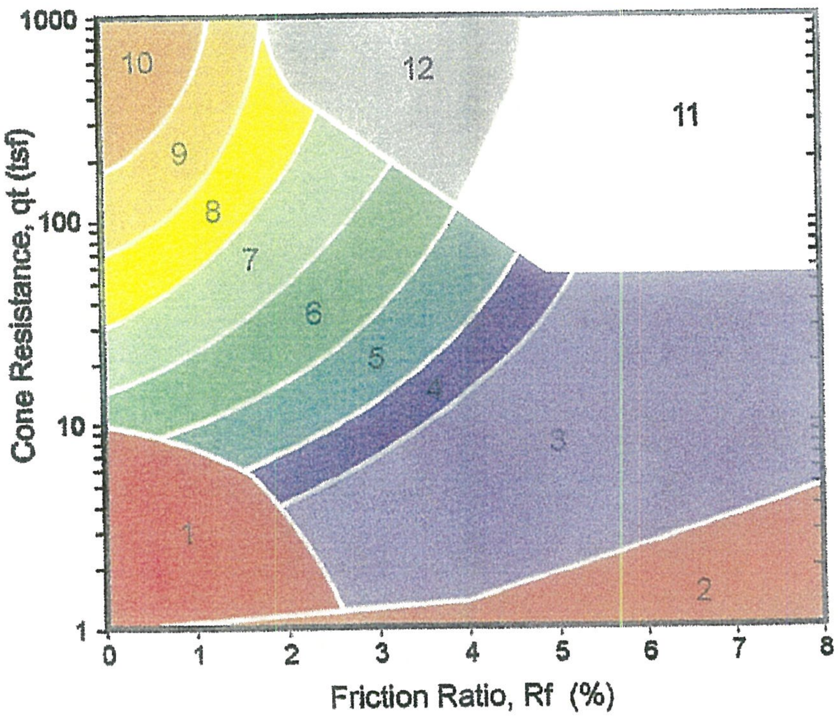


FIGURE A-3.2

KEHOE TESTING & ENGINEERING

CPT Classification Chart

(after Robertson and Campanella, 1988)



Zone		q_t / N	Soil Behavior Type	UCSCS
1		2	sensitive fine grained	OL-OH
2		1	organic material	Pt-OH
3		1	clay	CH
4		1.5	silty clay to clay	CL-CH
5		2	clayey silt to silty clay	ML-CL
6		2.5	sandy silt to clayey silt	MH-ML
7		3	silty sand to sandy silt	SM-ML
8		4	sand to silty sand	SP-SM
9		5	sand	SP
10		6	gravelly sand to sand	SW-SP
11		1	very stiff fine grained *	CL-MH
12		2	sand to clayey sand *	SP-SC

* overconsolidated or cemented

FIGURE A-3.3

PUT FILE: c:\temp\CPT-1.CSV

Depth (feet)	Qc(avg) (TSF)	Fs(avg) (TSF)	Rf (%)	Rf Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Su (TSF)
0.500	222.560	1.599	0.718	9	43	65	9E9
1.500	78.708	2.633	3.340	6	30	45	9E9
2.500	59.107	1.536	2.593	6	23	35	9E9
3.500	21.300	0.888	4.150	4	14	21	1.412
4.500	13.950	0.553	3.944	3	13	20	0.916
5.500	10.767	0.361	3.337	4	7	11	0.699
6.500	4.054	0.175	4.219	3	4	6	0.249
7.500	3.464	0.147	4.128	3	3	5	0.207
8.500	2.962	0.117	3.819	3	3	5	0.169
9.500	3.217	0.117	3.518	3	3	5	0.182
10.500	20.971	0.459	2.182	6	8	12	9E9
11.500	15.392	0.431	2.806	5	7	11	0.977
12.500	6.092	0.163	2.673	3	6	9	0.356
13.500	17.815	0.183	1.025	6	7	10	9E9
14.500	15.500	0.191	1.232	6	6	8	9E9
15.500	42.700	0.202	0.474	8	10	13	9E9
16.500	21.943	0.134	0.611	7	7	9	9E9
17.500	4.654	0.083	1.776	1	2	3	0.241
18.500	4.777	0.095	1.937	4	3	4	0.253
19.500	4.829	0.114	2.235	4	3	4	0.262
20.500	4.554	0.098	1.978	4	3	3	0.246
21.500	4.631	0.102	1.982	4	3	3	0.255
22.500	5.107	0.122	2.165	4	4	4	0.285
23.500	4.554	0.104	2.039	4	3	3	0.245
24.500	5.092	0.130	2.296	4	4	4	0.279
25.500	5.092	0.095	1.676	1	3	3	0.277
26.500	5.807	0.076	1.186	1	3	3	0.323
27.500	7.154	0.186	2.410	4	5	5	0.405
28.500	32.123	0.902	2.794	6	12	12	9E9
29.500	29.500	1.445	4.900	3	28	27	1.847
30.500	10.614	0.357	3.340	4	7	6	0.590
31.500	33.662	0.952	2.825	6	13	12	9E9
32.500	25.579	0.476	1.856	6	10	9	9E9
33.500	56.015	0.482	0.858	8	13	11	9E9
34.500	45.971	0.576	1.251	7	15	13	9E9
35.500	35.692	0.448	1.253	7	11	9	9E9
36.500	73.343	0.436	0.593	8	18	15	9E9
37.500	113.271	0.427	0.377	9	22	18	9E9
38.500	60.200	0.772	1.282	7	19	15	9E9
39.500	17.744	0.483	2.714	5	9	7	1.028
40.500	11.743	0.341	2.850	4	8	6	0.635
41.499	13.408	0.778	5.576	3	13	10	0.762
42.499	11.207	0.610	5.129	3	11	8	0.621
43.499	12.347	0.589	4.398	3	13	10	0.718
44.499	11.162	0.539	4.479	3	12	9	0.623
45.499	12.100	0.781	5.975	3	13	9	0.688
46.499	13.538	0.889	6.087	3	14	10	0.785
47.499	65.667	0.562	0.850	8	16	11	9E9
48.499	164.969	0.718	0.434	9	32	22	9E9
49.499	202.623	0.857	0.422	9	39	26	9E9

FIGURE A-3.4

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Depth (feet)	Qc(avg) (TSF)	Fs(avg) (TSF)	Rf (%)	Rf Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Su (TSF)
0.500	194.500	0.837	0.430	9	37	56	9E9
1.500	290.236	2.473	0.852	9	56	84	9E9
2.500	342.356	2.591	0.757	10	55	83	9E9
3.500	284.900	1.938	0.680	9	55	83	9E9
4.500	227.291	1.569	0.690	9	44	66	9E9
5.500	158.244	1.309	0.827	9	30	45	9E9
6.500	114.058	1.685	1.475	8	27	41	9E9
7.500	144.750	1.018	0.703	9	28	42	9E9
8.500	36.489	0.654	1.793	6	14	21	9E9
9.500	14.242	0.274	1.917	5	7	11	0.914
10.500	14.580	0.253	1.733	5	7	11	0.930
11.500	3.555	0.098	2.647	3	4	6	0.200
12.500	2.922	0.057	1.777	1	2	3	0.161
13.500	2.991	0.055	1.662	1	2	3	0.164
14.500	33.315	0.510	1.526	7	11	16	9E9
15.500	34.857	0.749	2.151	6	13	18	9E9
16.500	38.536	0.974	2.532	6	15	20	9E9
17.500	16.450	0.348	2.122	5	8	10	1.021
18.500	47.493	0.184	0.387	8	11	14	9E9
19.500	23.850	0.170	0.713	7	8	10	9E9
20.500	10.886	0.149	1.368	5	5	6	0.641
21.500	3.992	0.063	1.538	1	2	2	0.187
22.500	56.962	0.312	0.546	8	14	16	9E9
23.500	91.708	0.545	0.594	8	22	24	9E9
24.500	94.800	0.726	0.766	8	23	24	9E9
25.500	150.436	1.111	0.739	9	29	30	9E9
26.500	95.183	0.539	0.566	8	23	23	9E9
27.500	32.492	0.277	0.851	7	10	10	9E9
28.500	6.464	0.116	1.751	4	4	4	0.328
29.500	5.592	0.136	2.315	4	4	4	0.272
30.500	5.709	0.148	2.342	4	4	4	0.299
31.500	5.658	0.074	1.156	1	3	3	0.301
32.500	6.077	0.077	1.120	1	3	3	0.327
33.500	7.323	0.208	2.574	4	5	4	0.406
34.500	15.083	0.527	3.392	4	10	9	0.897
35.500	8.677	0.268	3.064	4	6	5	0.442
36.500	50.931	0.350	0.686	8	12	10	9E9
37.500	35.692	0.965	2.703	6	14	11	9E9
38.500	16.433	0.454	2.762	5	8	6	0.941
39.500	46.446	1.135	2.442	6	18	14	9E9
40.500	38.562	0.575	1.487	7	12	9	9E9
41.499	13.485	0.338	2.469	5	7	5	0.747
42.499	9.450	0.292	2.922	4	6	4	0.495
43.499	18.115	0.316	1.698	6	7	5	9E9
44.499	8.538	0.162	1.807	5	4	3	0.420
45.499	8.723	0.303	3.183	4	6	4	0.452
46.499	11.131	0.385	3.193	4	8	6	0.616
47.499	11.638	0.285	2.259	5	6	4	0.649
48.499	9.762	0.295	2.712	4	7	5	0.531
49.499	11.915	0.720	5.477	3	13	9	0.677

FIGURE A-3.5

PUT FILE: c:\temp\CPT-2.CSV

Depth (feet)	Qc(avg) (TSF)	Fs(avg) (TSF)	Rf (%)	Rf Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Su (TSF)
50.499	13.931	1.217	7.958	3	15	10	0.816
51.499	23.054	0.562	2.321	6	9	6	9E9
52.499	80.538	0.882	1.094	8	19	12	9E9
53.499	70.036	1.054	1.501	7	22	14	9E9
54.499	357.208	2.226	0.623	10	57	36	9E9
55.499	508.362	2.543	0.500	10	81	51	9E9
56.499	454.515	1.568	0.345	10	73	45	9E9
57.499	398.664	0.883	0.221	10	64	39	9E9
58.499	500.980	0.000	0.000	10	9E9	9E9	9E9

FIGURE A-3.6

Fiji Way & Admiralty Way
Marina Del Rey, CA

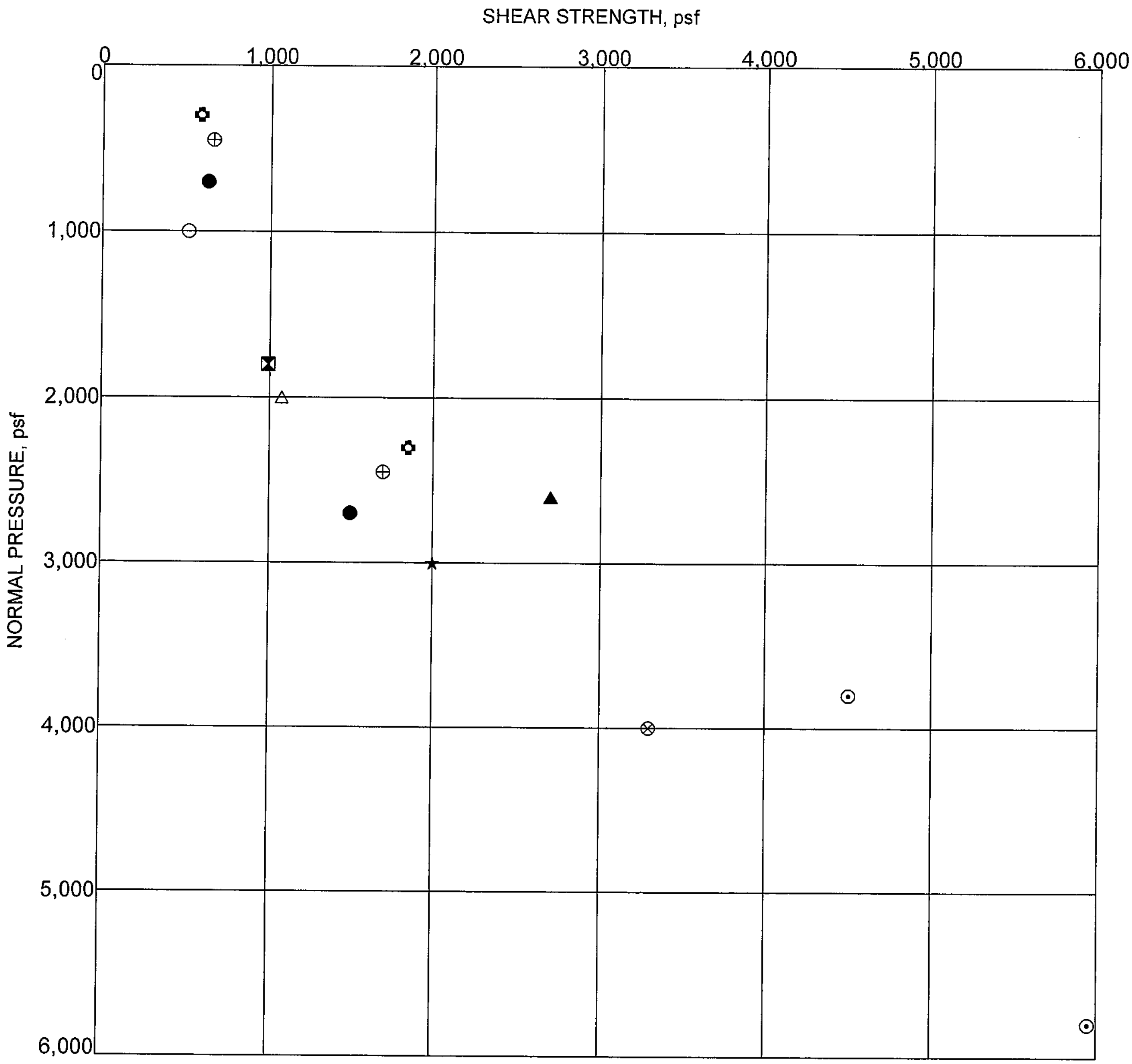
CPT-2

CPT Shear Wave Measurements

Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
10.72	11.83	15.85	746.29	
20.25	20.86	39.72	525.13	378.28
30.43	30.84	57.15	539.60	572.57
40.32	40.63	76.57	530.61	504.16
50.58	50.83	98.13	517.95	472.99
58.29	58.50	111.13	526.45	590.58

Shear Wave Source Offset = 5 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)



NOTE: All samples soaked to near-saturation prior to testing.

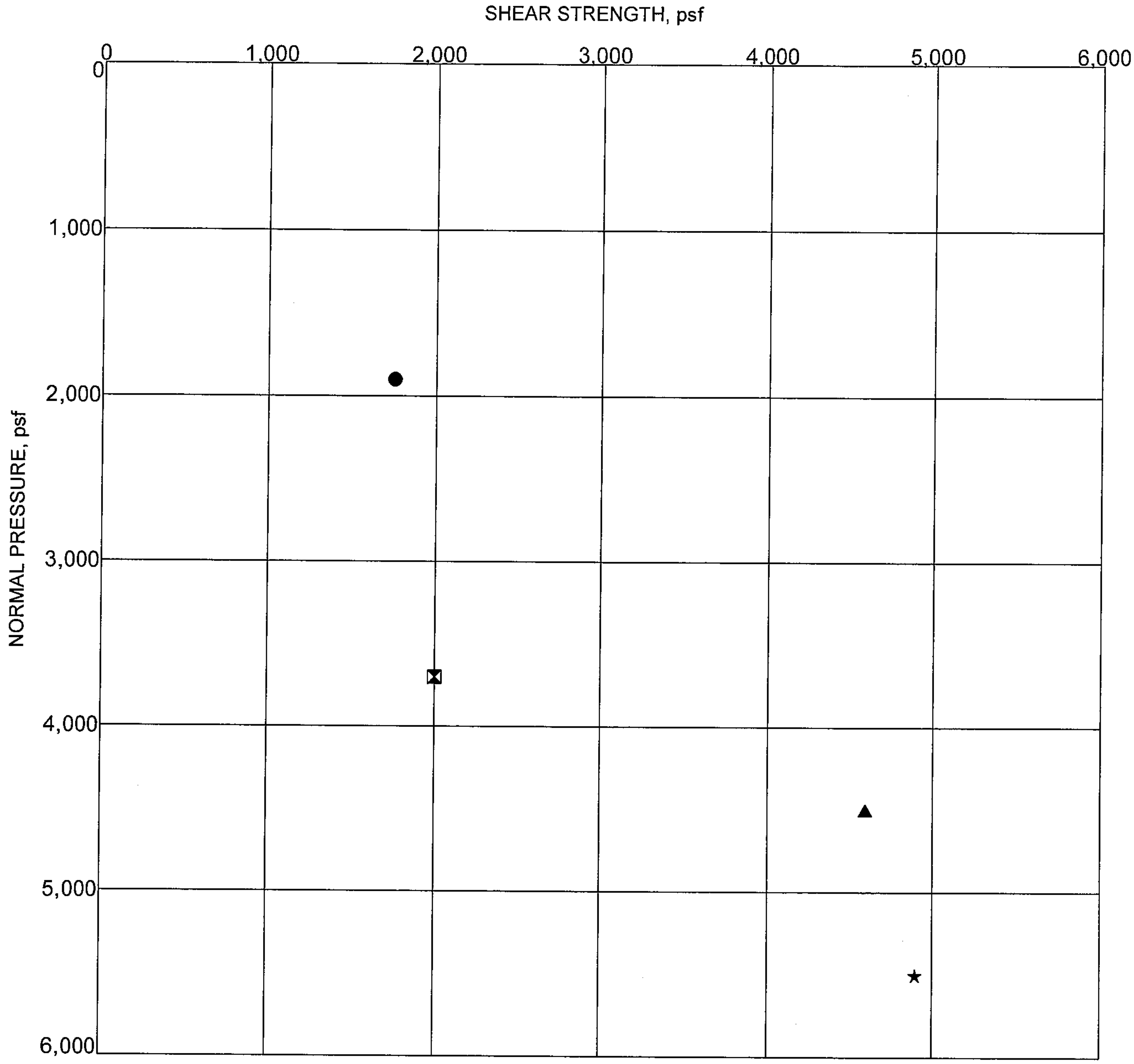
	Specimen Identification	Classification	c	ϕ
●	**Boring 1 at 7.5 feet**	**CLAY**	**319**	**24**
⊠	**Boring 1 at 22.5 feet**	**CLAY**		
▲	**Boring 1 at 34.5 feet**	**SILTY SAND**		
★	**Boring 1 at 40.5 feet**	**PEAT**		
⊙	**Boring 1 at 52.5 feet**	**SAND**	**1745**	**36**
✪	**Boring 2 at 2.5 feet**	**FILL - CLAYEY SAND**	**390**	**32**
○	**Boring 2 at 10.5 feet**	**CLAY**		
△	**Boring 2 at 24.5 feet**	**CLAY**		
⊗	**Boring 2 at 54.5 feet**	**SILTY SAND**		
⊕	**Boring 3 at 4.5 feet**	**FILL - SAND**	**420**	**28**

DIRECT SHEAR TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-4.1

DIRECT_SHEAR_6_10 07-025.GPJ VB_B.GDT 10/4/07



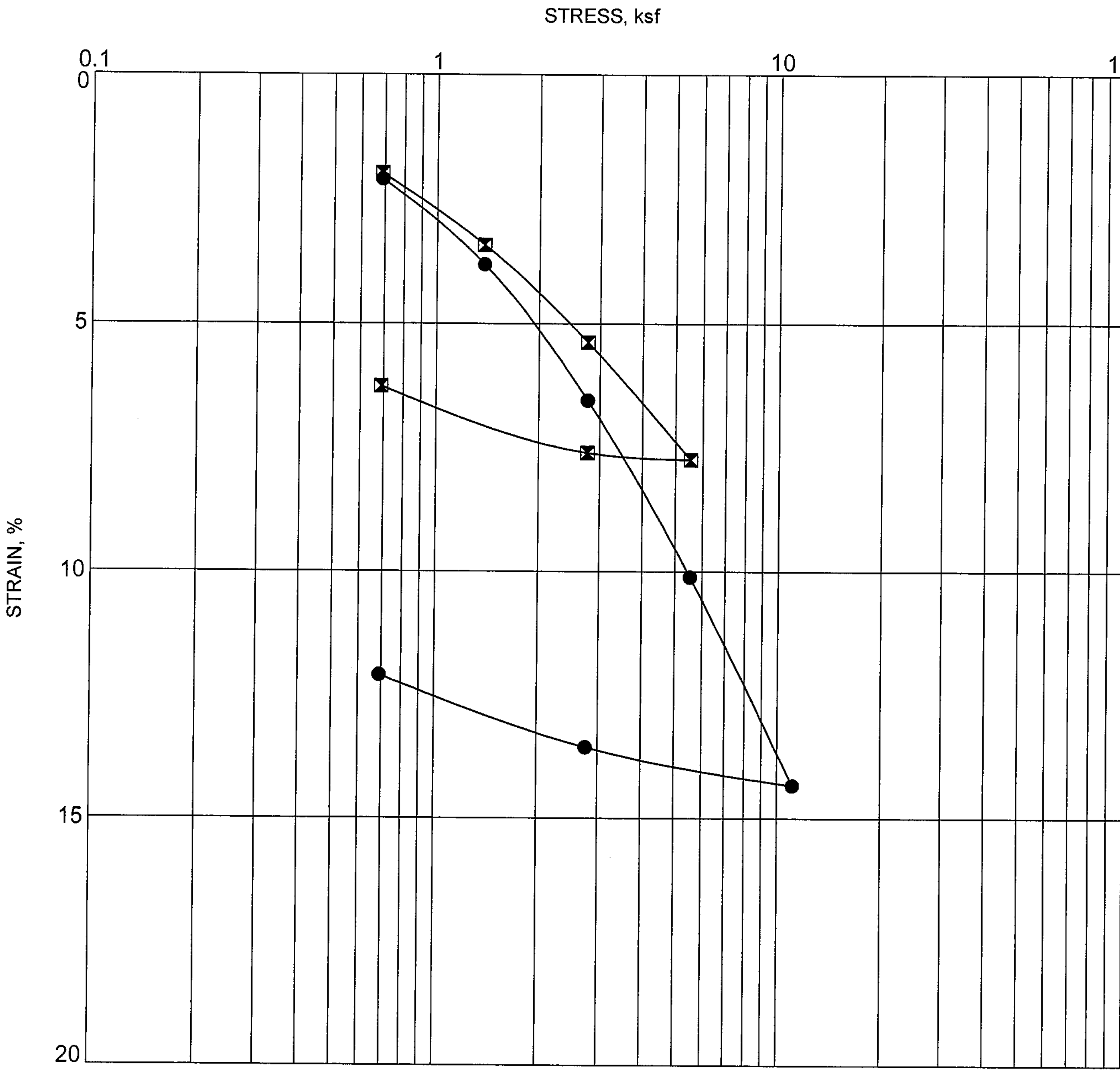
NOTE: "*" indicates sample was soaked to near saturation prior to testing.

	Specimen Identification	Classification	c	ϕ	
●	**Boring 3 at 22.5 feet**	**SILTY SAND**			*
⊠	**Boring 3 at 52.5 feet**	**CLAY**			*
▲	**Boring 3 at 65.5 feet**	**SAND**			*
★	**Boring 3 at 75.5 feet**	**SAND**			*

DIRECT SHEAR TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-4.2



NOTE: Samples tested at field moisture content

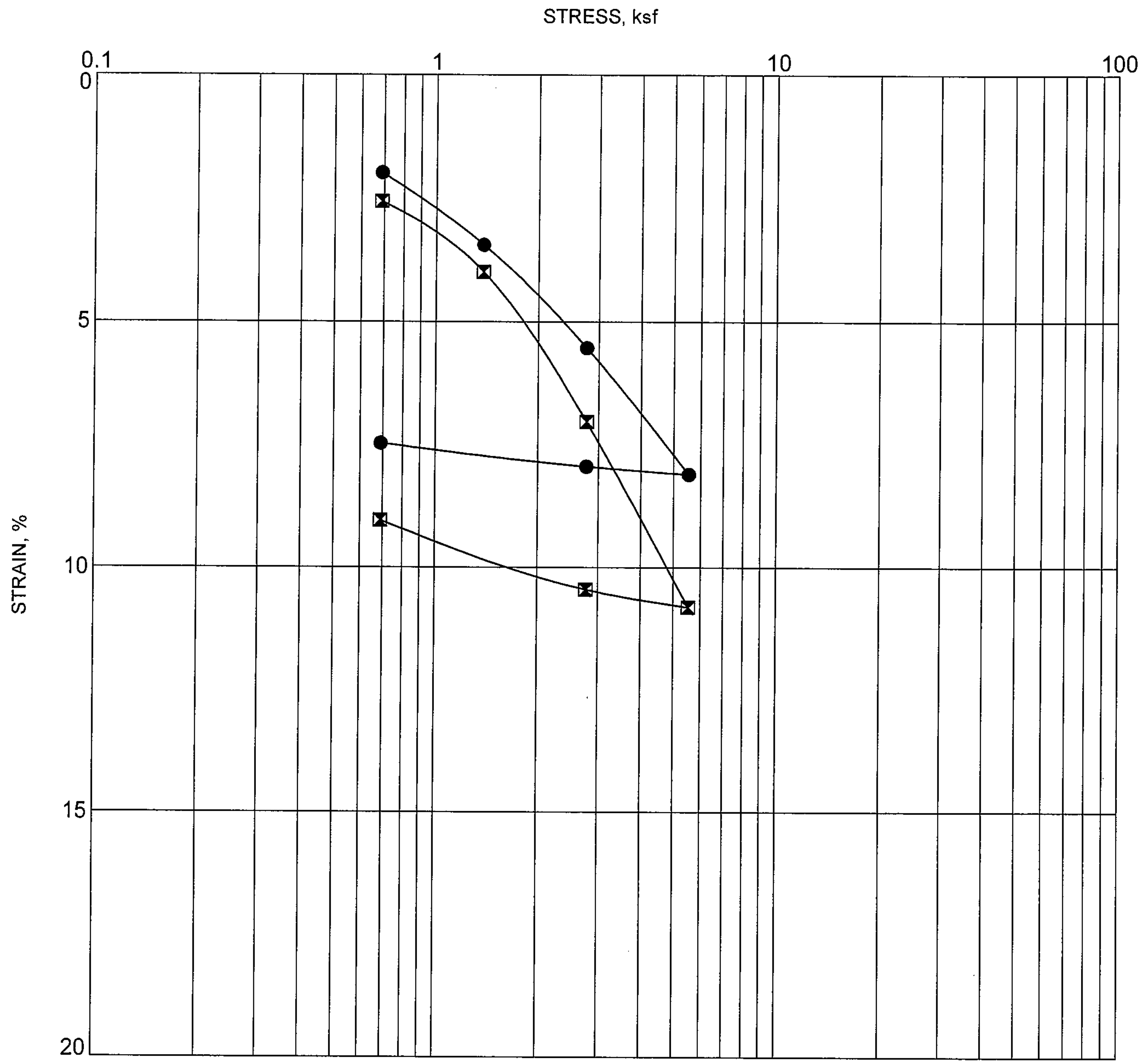
	Specimen Identification	Classification
●	**Boring 1 at 22.5 feet**	**CLAY**
⊠	**Boring 1 at 40.5 feet**	**PEAT**

CONSOLIDATION TEST DATA

VAN BEVEREN & BUTELO, INC.

CONSOL20 07-025.GPJ VB_B.GDT 10/4/07

FIGURE A-5.1



NOTE: Samples tested at field moisture content

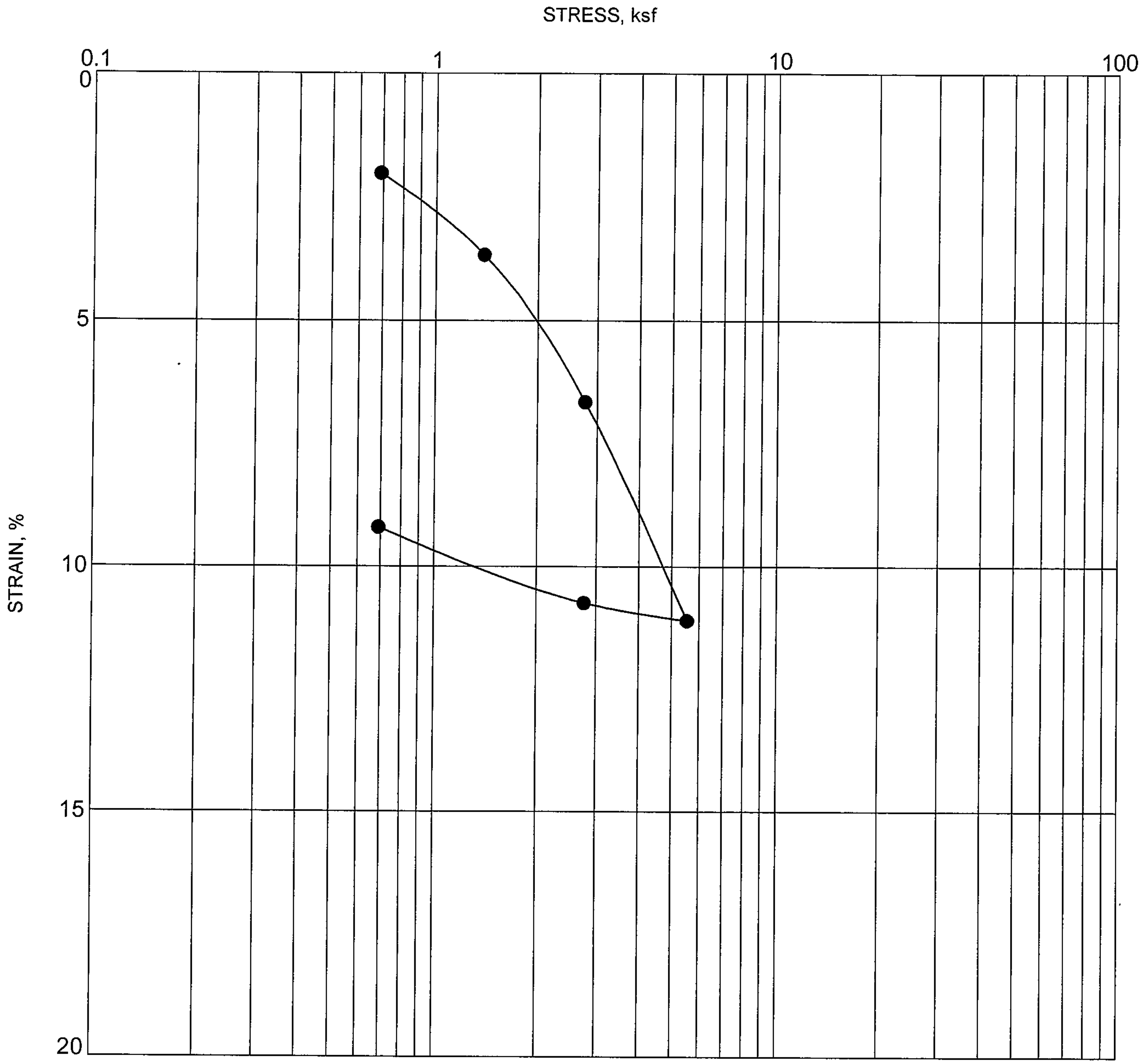
	Specimen Identification	Classification
●	**Boring 2 at 8.5 feet**	**CLAY**
⊠	**Boring 2 at 42.5 feet**	**PEAT**

CONSOLID20 07-025.GPJ VB_B.GDT 10/4/07

CONSOLIDATION TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-5.2



NOTE: Samples tested at field moisture content

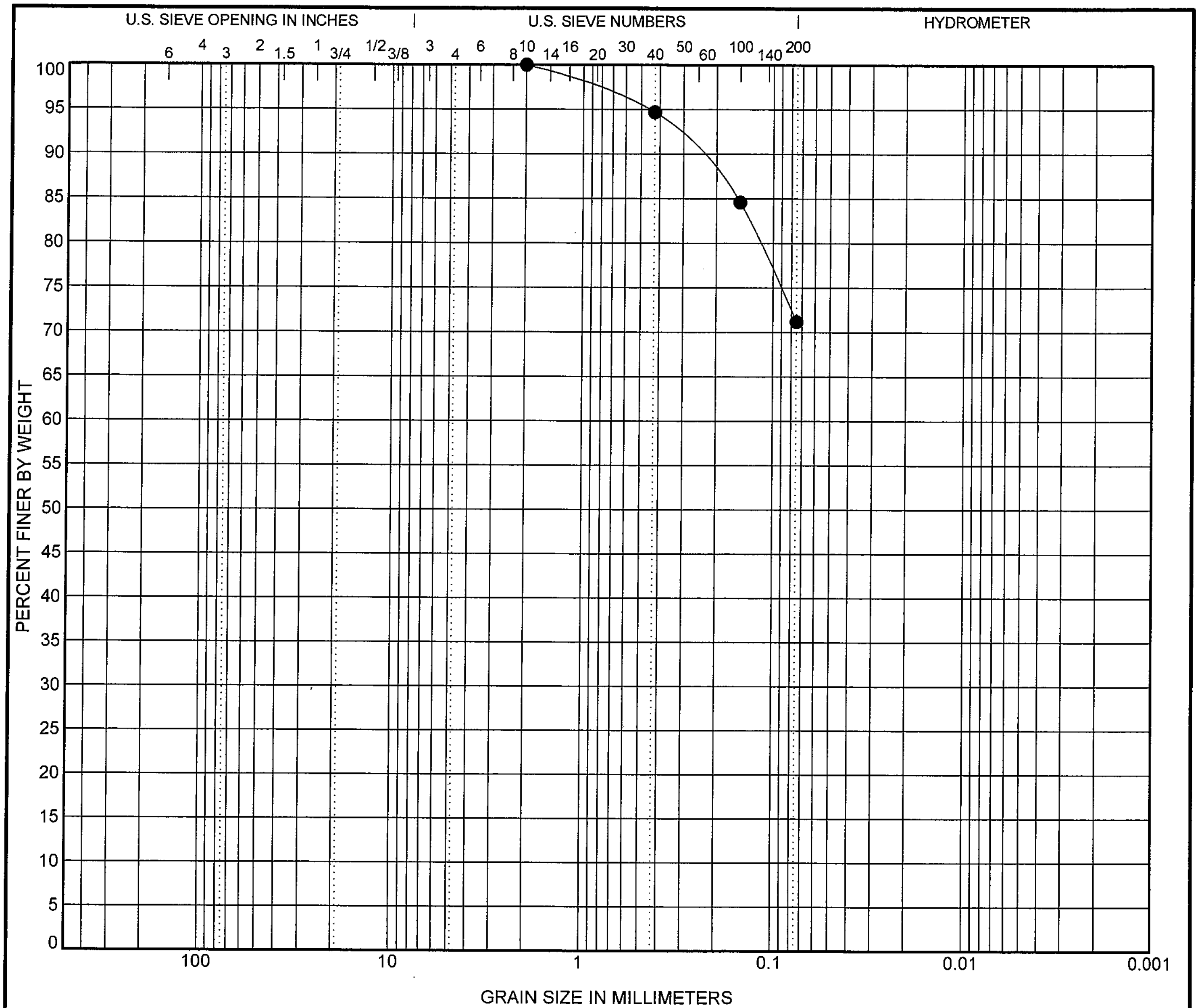
	Specimen Identification	Classification
●	**Boring 3 at 28.5 feet**	**SILT**

CONSOLIDATION TEST DATA

CONSOL20 07-025.GPJ VB B.GDT 10/4/07

VAN BEVEREN & BUTELO, INC.

FIGURE A-5.3



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

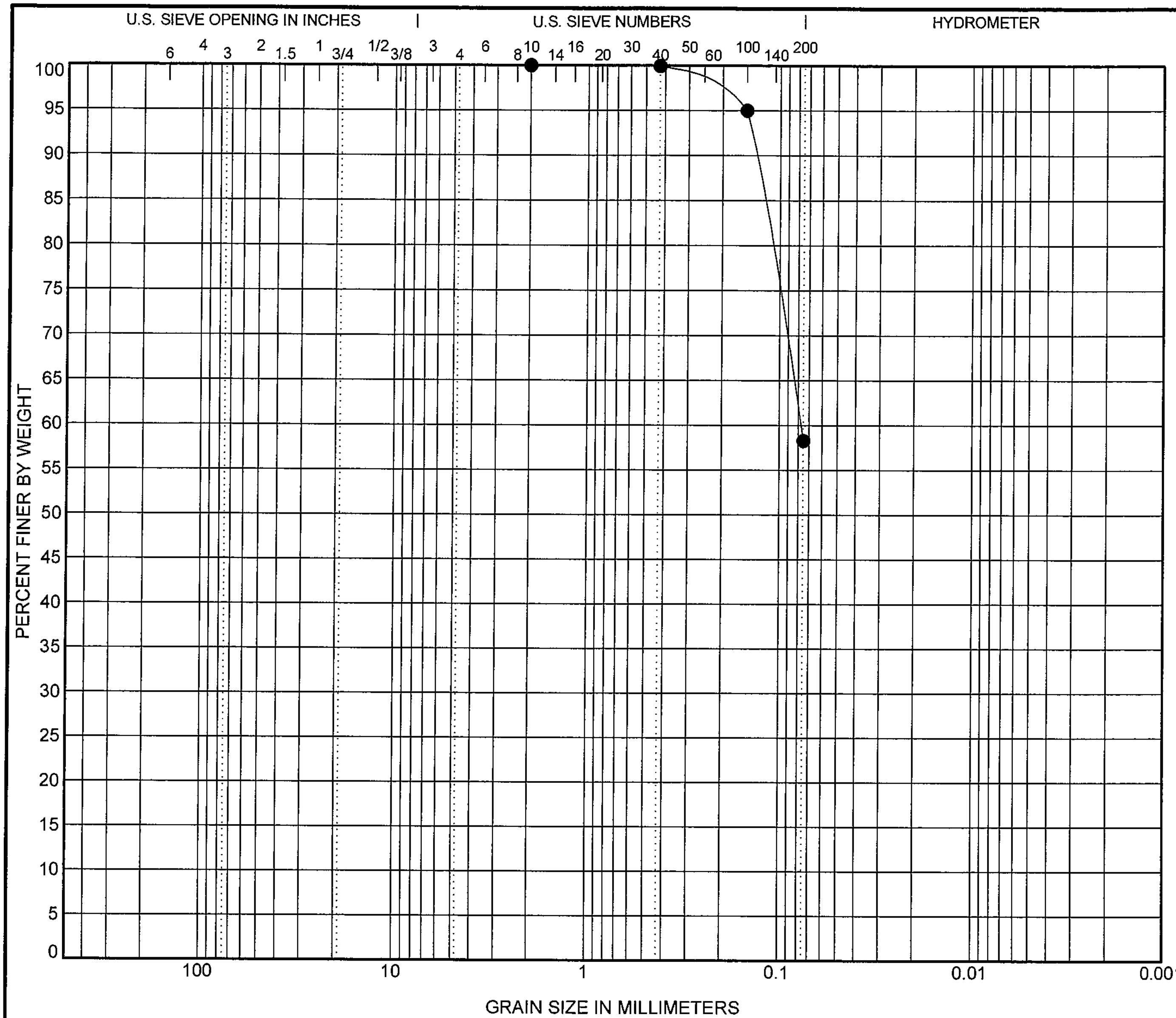
	Specimen Identification	Classification
●	**Boring 1 at 28.5 feet**	**CLAY**

GRAIN SIZE DISTRIBUTION TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-6.1

GRAIN_SIZE 07-025.GPJ VB_B.GDT 10/4/07



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

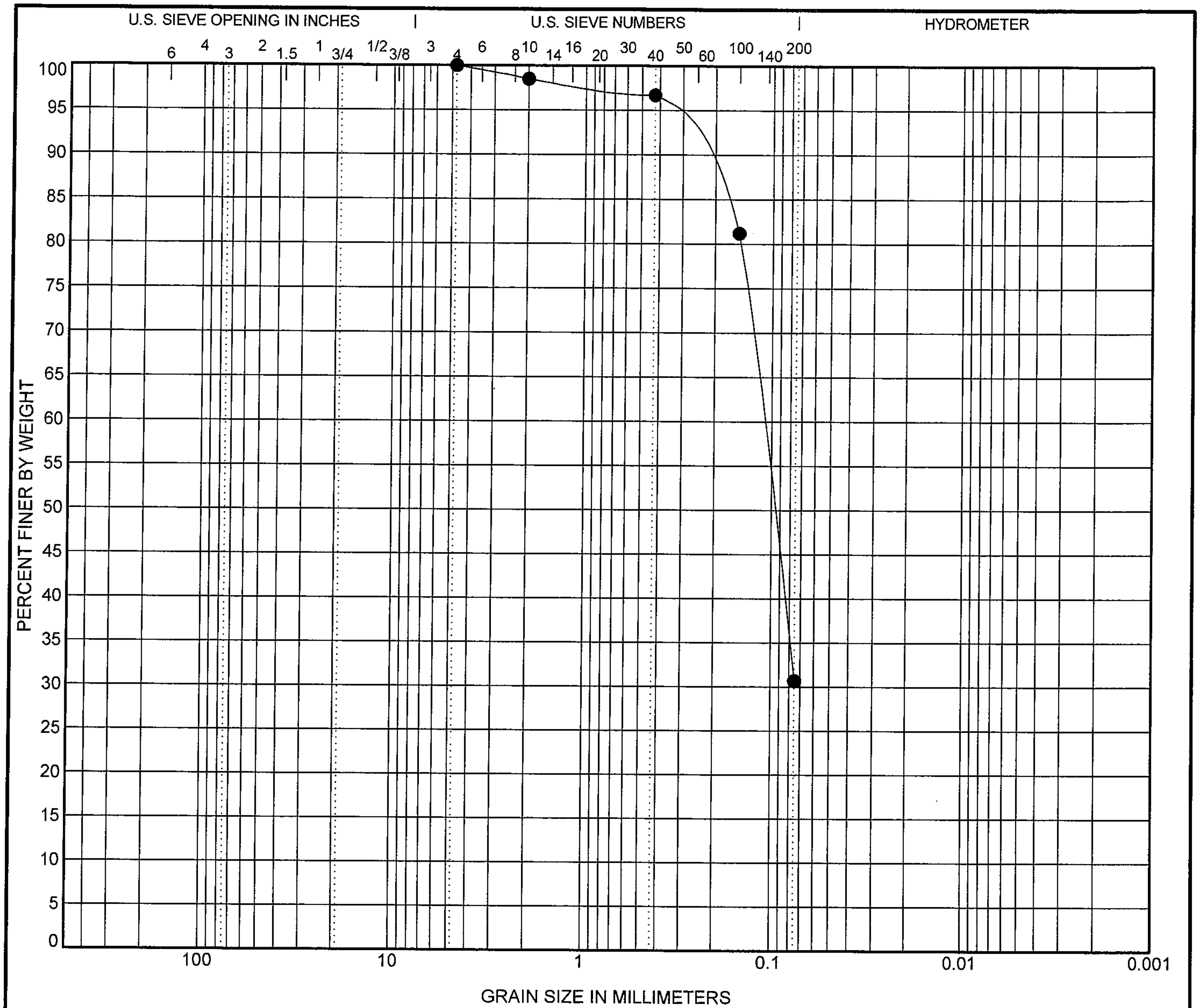
	Specimen Identification	Classification
●	**Boring 2 at 12 feet**	**SANDY SILT**

GRAIN SIZE DISTRIBUTION TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-6.2

GRAIN_SIZE 07-025.GPJ VB_B.GDT 10/4/07



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification	Classification
●	**Boring 3 at 19 feet**	**SILTY SAND**

GRAIN SIZE DISTRIBUTION TEST DATA

VAN BEVEREN & BUTELO, INC.

FIGURE A-6.3

R - VALUE DATA SHEET

PROJECT NUMBER 34846 BORING NUMBER: P.N. 07-025 B-1,2,&3 Comb.

SAMPLE DESCRIPTION: Brown Silty Sand

Item	SPECIMEN a	SPECIMEN b	SPECIMEN c
Mold Number	1	2	3
Water added, grams	10	0	-4
Initial Test Water, %	11.3	10.3	9.9
Compact Gage Pressure,psi	120	245	350
Exudation Pressure, psi	205	319	694
Height Sample, Inches	2.58	2.48	2.46
Gross Weight Mold, grams	3063	3062	3079
Tare Weight Mold, grams	1965	1969	1977
Sample Wet Weight, grams	1098	1093	1102
Expansion, Inches x 10exp-4	0	6	12
Stability 2,000 lbs (160psi)	17 / 34	15 / 29	13 / 24
Turns Displacement	4.35	4.23	3.94
R-Value Uncorrected	68	73	78
R-Value Corrected	70	73	78
Dry Density, pcf	115.8	121.0	123.5
	DESIGN CALCULATION DATA		
Traffic Index Assumed:	4.0	4.0	4.0
G.E. by Stability	0.31	0.28	0.23
G. E. by Expansion	0.00	0.20	0.40

Equilibrium R-Value 73 by EXUDATION

Examined & Checked: 8 /23/ 07

REMARKS:
Gf = 1.25
0.0% Ret. On the
3/4" Sieve.

REGISTERED PROFESSIONAL ENGINEER STEVEN R. MARVIN 30659 EXP. 3/31/08 STATE OF CALIFORNIA

Steven R. Marvin RCE 30659

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301.

LaBelle • Marvin

FIGURE A-7.1

R-VALUE GRAPHICAL PRESENTATION

PROJECT NO. 34846 P.N. 07-025

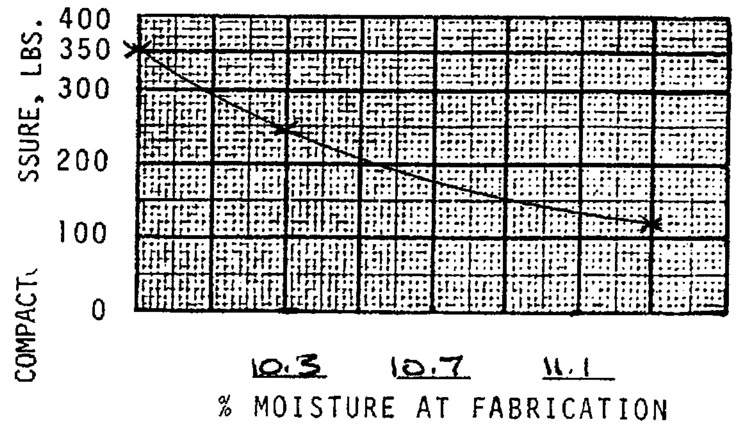
BORING NO. B-1, 2, & 3 Combined.

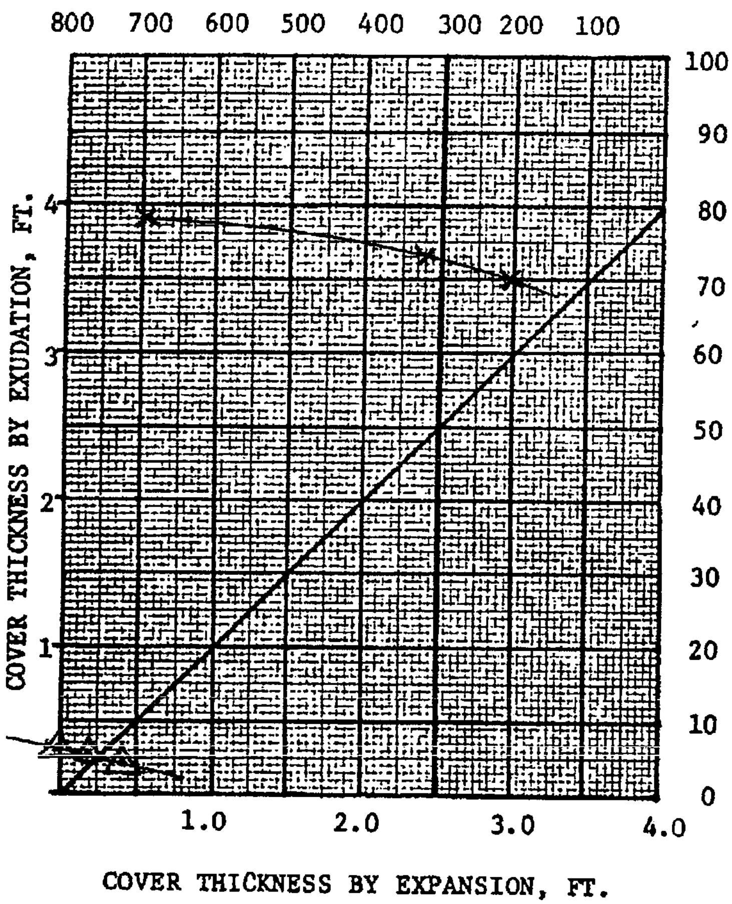
DATE 8-23-07

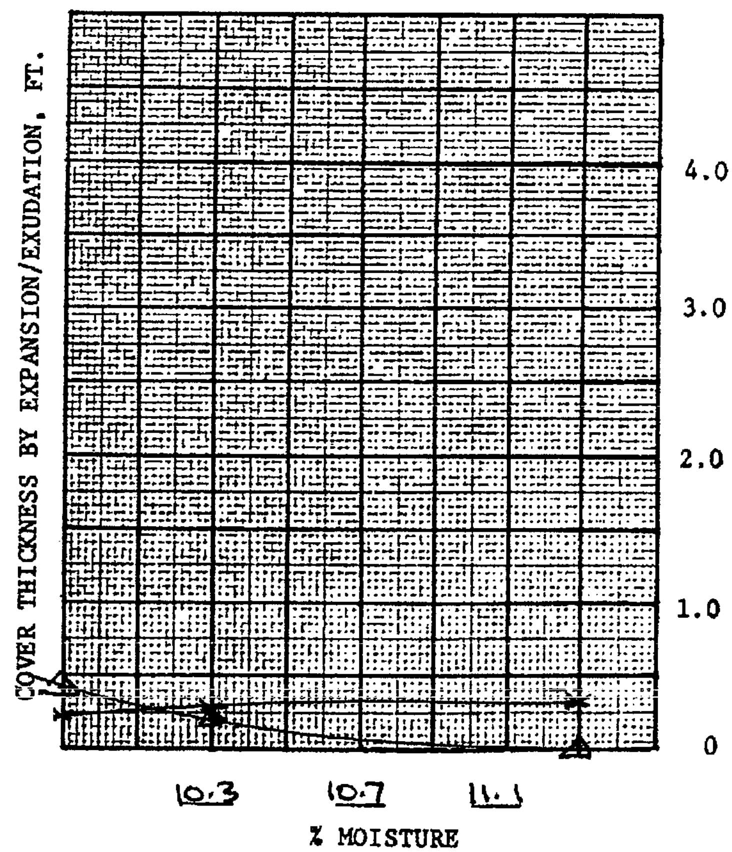
TRAFFIC INDEX Assume 4.0

R-VALUE BY EXUDATION 73

R-VALUE BY EXPANSION







R-VALUE vs. EXUD. PRES.

T by EXUDATION

EXUD. T vs. EXPAN. T

T by EXPANSION

REMARKS

GF=1.25

LaBelle • Marvin
PROFESSIONAL PAVEMENT ENGINEERING

FIGURE A-7.2

Atlantic Consultants

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August 23, 2007

Van Beveren & Butelo, Inc.
Attention: Victor Langhaar
706 W. Broadway, Suite 201
Glendale, CA 91204

Atlantic Job No.: 2007-080

Subject: Soil Chemistry Analysis for Van Beveren & Butelo, Inc. Job # 07-025
5 Samples: B-1 @ 46.5', B-2 @ 6.5', B-2 @ 8.5', B-2 @ 30.5' and B-3 @ 70.5'

Sample Number	As Rec'd Resistivity (ohm-cm)	[1]Minimum Resistivity (ohm-cm)	[2]pH	[3]Sulfate %	[3]Chloride %	(As Rec'd) Description
B-1 @ 46.5'	440	396	7.18	0.2200	0.1000	Black/Brown, saturated
B-2 @ 6.5'	400	224	7.68	0.1030	0.0990	Black/Brown, saturated
B-2 @ 8.5'	640	400	7.62	0.0020	0.1500	Dark Gray/Brown, silty , saturated
B-2 @ 30.5'	116	96	7.70	0.0734	0.9060	Black/Brown, clay, saturated
B-3 @ 70.5'	4,400	920	6.95	0.0622	0.0071	Black/Brown, silty sand, saturated

NOTE: SAMPLES WERE ANALYZED IN ACCORDANCE WITH THE FOLLOWING METHODS.
1. MINIMUM RESISTIVITY DETERMINED BY SOIL BOX METHOD, (PER ASTM G-57)
2. PH MEASURED BY POTENTIOMETRIC METHOD USING STANDARD ELECTRODES, (PER CAL TRANS. #643)
3. CHLORIDE AND SULFATE WERE ANALYZED IN ACCORDANCE WITH EPA METHODS FOR CHEMICAL ANALYSIS FOR WATER AND WASTE, NO. 300 EPA-600/4-79-020. CONCENTRATION BY WEIGHT OF DRY SOIL.

CONCLUSIONS:

Material	Corrosion Class	Recommendation
Concrete	Severe for Sulfate exposure and Chloride exposure, pH is neutral. (UBC Table 19-A-4)	-Type V Portland cement for concrete with a maximum water cement ratio of 0.45 and a minimum of 3 inches of cover over steel reinforcement. It is suggested that a 6 mil polyethylene barrier be placed between concrete slabs and soil to reduce intrusion of moisture and chlorides into the concrete slabs.
Steel Cast/Ductile Iron Mortar Coated Steel	Very Corrosive	- Install corrosion monitoring and cathodic protection for buried ferrous metal piping. - Provide electrical continuity along steel and ductile iron piping, to facilitate the installation of corrosion monitoring and cathodic protection, if required in the future. - Electrically isolate underground metal piping from above grade piping and other metallic structures. - Use separate ground rods for grounding interior piping.
Copper Piping	Corrosive Not tested for Ammonia NOTE: The soils were not tested for ammonium. Even trace amounts of ammonium can cause failure of copper piping.	- Overhead plumbing is the most effective method of corrosion control. - Copper pipes should not be installed in soils, which may contain ammonia without cathodic protection. - If Copper pipes are installed below ground, the soils should be tested for ammonia and Keldahl nitrogen. - Electrical isolation between hot and cold water lines and between buried copper and steel piping and structural steel should be maintained. - If ammonia is present, coat and cathodically protect any buried copper piping.

Atlantic Consultants

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www.AtlanticCorrosionEngineers.com

The test results and recommendations are based on the samples submitted, which may not be representative of overall site conditions. Additional sampling may be required to more fully characterize soil conditions.

Sincerely,
ATLANTIC CONSULTANTS, INC.

Kerri M. Howell

Kerri M. Howell, P.E.
President

APPENDIX B

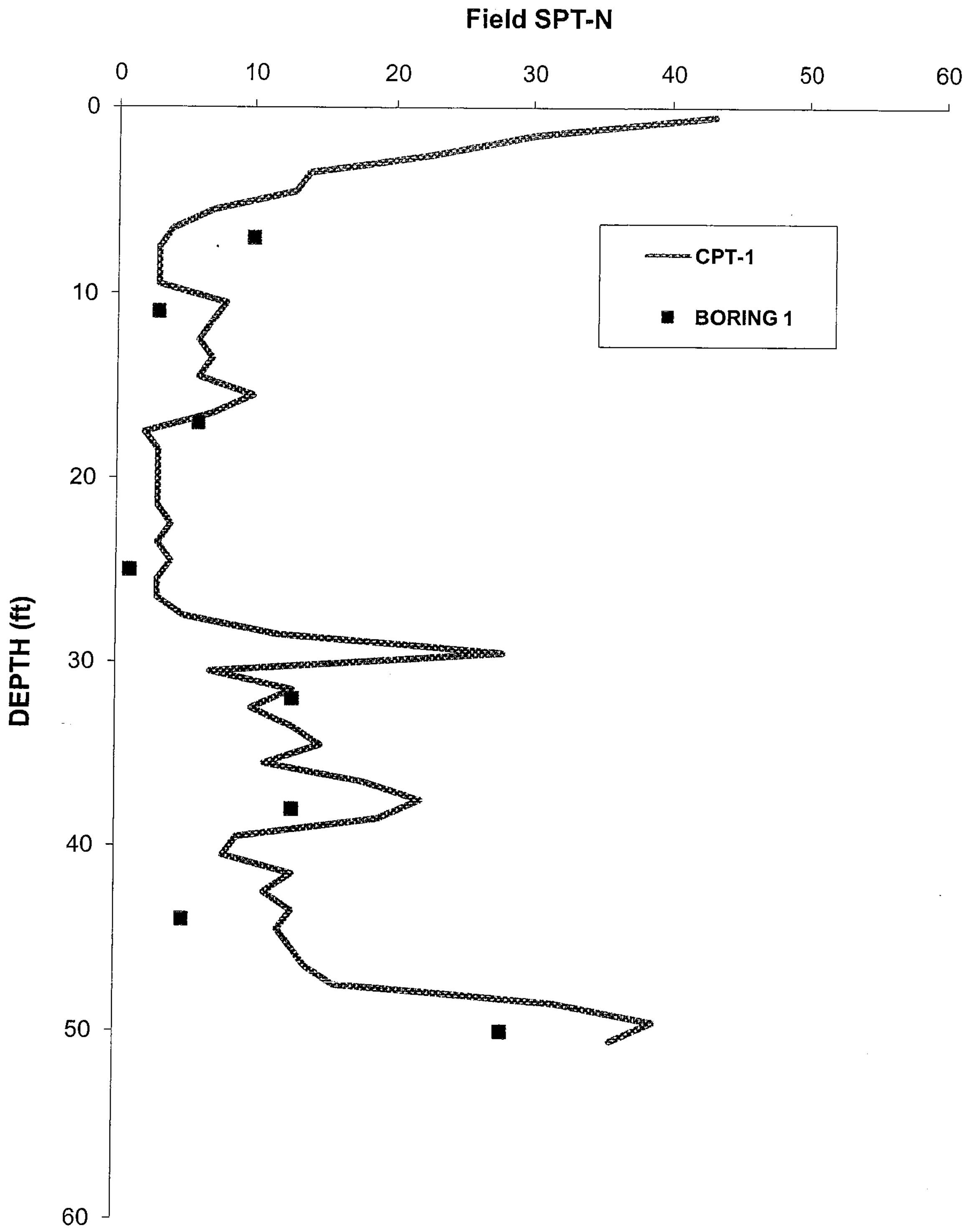
LIQUEFACTION ANALYSIS

APPENDIX B
LIQUEFACTION ANALYSES

For the evaluation of liquefaction potential, the Design Basis Earthquake (DBE) ground motions were first considered. The DBE is defined as an event with a 10% probability of exceedance in 50 years. Referencing the Seismic Hazard Zone Report for the Venice 7.5-minute quadrangle (CDMG, 1998), the peak ground acceleration (PGA) corresponding to the DBE is approximately 0.45g, which corresponds to a predominate earthquake magnitude of 7.1. However, the Los Angeles County Planning and Zoning Ordinance and the Marina Del Rey Specific Plan (Section 22.46.1180, Item 4) require that "all new development over three stories in height shall be designed to withstand a seismic event with a ground acceleration of no less than 0.5g." Therefore, the PGA used in the liquefaction evaluation was increased to 0.5g (corresponding to a magnitude of 7.1).

The liquefaction potential of the soils underlying the site was evaluated using the ground motions discussed above, the results of the SPTs performed in our borings, laboratory testing, and the CPTs. The measured shear wave velocity at the CPT-2 location also was considered. The historic-high groundwater depth at the site was taken as 5 feet. The liquefaction potential was computed as described in the Youd et al. (2001) summary report from 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, the consensus publication on liquefaction evaluation. The fine-grained soils were further evaluated using new liquefaction criteria developed by Bray and Sancio (2006). Specific fine-grained soil layers encountered in the three rotary-wash borings were found to range from "susceptible" to "moderately susceptible" to liquefaction using these criteria (which are based on moisture content and Atterberg Limits testing), and these soil layers were included in the analyses.

A comparison of the field SPT blowcounts from Boring 1 and the correlated SPT blowcounts from CPT-1 is presented on Figure B-1. Our liquefaction analyses are presented in Figures B-2.1 through B-2.5.



Boat Storage Facility Marina del Rey	Van Beveren & Butelo, Inc.	Blow Count Comparison Project No. 07-025 Figure B-1

VAN BEVEREN & BUTELO, INC.
SPT Liquefaction, Ver. 1.1

Youd & Idriss, 1997 NCEER-97-0022

JOB NO.: 07-025
CLIENT: Boat Central
BY: VL

REQUIRED INFORMATION:

WET UNIT WEIGHT ABOVE WATER (P.C.F.):	130
WET UNIT WEIGHT BELOW WATER (P.C.F.):	111
DEPTH TO WATER (FEET):	7
DEPTH TO POSTULATED HIGH WATER TABLE (FEET)	5
EQUIVALENT DEPTH OF SOIL REMOVED (FEET)	0
EARTHQUAKE MAGNITUDE:	7.1
MAXIMUM GROUND ACCELERATION (g's):	0.50
BOREHOLE DIAMETER Cb (mm):	127

NO.	BORING NUMBER	CENTER OF LAYER (FEET)	DEPTH OF SPT (FEET)	THICKNESS OF LAYER (FEET)	STD PEN TEST "N" VALUE	FINES CONTENT (%)	DEPTH OF SPT CURRENT WATER TABLE TOTAL OVERBURDEN (P.S.F.)	DEPTH OF SPT CURRENT WATER TABLE EFFECTIVE OVERBURDEN (P.S.F.)	C_n CORRELATION FACTOR	C_b BOREHOLE DIA. FACTOR	$N1_{60}$ FACTOR	ALPHA FACTOR	BETA FACTOR	$(N1)_{60cs}$	CLEAN SAND RELATIVE DENSITY	CENTER OF LAYER POSTULATED HIGH GROUND WATER TOTAL OVERBURDEN (P.S.F.)	CENTER OF LAYER POSTULATED HIGH GROUND WATER EFFECTIVE OVERBURDEN (P.S.F.)	r_d STRESS REDUCTION FACTOR	CSR CYCLIC STRESS RATIO	$CRR_{7.5}$ CYCLIC RESISTANCE RATIO	MSF MAGNITUDE SCALING FACTOR	FS FACTOR OF SAFETY	METHOD 1 VOLUMETRIC STRAIN (%)	METHOD 1 SETTLEMENT (INCHES)
1	1	5.50	4.50	1.00	12	15	585	585	1.70	1.05	21.4	2.50	1.05	24.9	72	706	674	0.99	0.34	0.28	1.15	0.97	1.00%	0.12
2	1	7.50	7.50	3.00	3.6	50	966	934	1.49	1.05	5.6	5.00	1.20	11.8	49	928	772	0.98	0.38	0.13	1.15	0.38	2.30%	0.828
3	1	11.00	10.50	4.00	3.6	50	1299	1080	1.39	1.05	5.2	5.00	1.20	11.3	49	1316	942	0.97	0.44	0.12	1.15	0.32	2.30%	1.104
4	1	15.00	13.50	4.00	7	41	1632	1226	1.30	1.05	9.6	5.00	1.20	16.5	60	1760	1136	0.97	0.49	0.18	1.15	0.42	1.80%	0.864
5	1	28.75	28.50	2.50	9	50	3297	1955	1.03	1.05	9.7	5.00	1.20	16.7	60	3286	1804	0.93	0.55	0.18	1.15	0.38	1.80%	0.54
6	1	31.50	31.50	3.00	15.6	47	3630	2101	1.00	1.05	16.3	5.00	1.20	24.6	72	3591.5	1938	0.92	0.55	0.28	1.15	0.57	1.25%	0.45
7	1	34.25	34.50	2.50	15.6	25	3963	2247	0.96	1.05	15.8	4.29	1.12	21.9	68	3896.75	2072	0.90	0.55	0.24	1.15	0.50	1.40%	0.42
8	1	37.25	37.50	3.50	15.6	37	4296	2392	0.93	1.05	15.3	5.00	1.20	23.3	71	4230	2217	0.87	0.54	0.26	1.15	0.55	1.30%	0.546
9	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
10	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
11	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
12	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
13	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
14	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
15	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
16	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
17	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
18	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
19	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
20	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
21	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
22	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
23	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
24	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
25	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
26	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
27	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
28	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
29	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
30	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
31	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
32	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
33	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
34	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
35	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
36	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
37	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
38	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
39	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
40	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
41	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
42	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
43	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
44	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
45	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
46	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
47	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
48	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
49	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
50	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0

TOTAL SETTLEMENT - METHOD 1: 4.87

FIGURE B-2.1

VAN BEVEREN & BUTELO, INC.
SPT Liquefaction, Ver. 1.1

Youd & Idriss, 1997 NCEER-97-0022

JOB NO.: 07-025
CLIENT: Boat Central
BY: VL

REQUIRED INFORMATION:

WET UNIT WEIGHT ABOVE WATER (P.C.F.):	130
WET UNIT WEIGHT BELOW WATER (P.C.F.):	111
DEPTH TO WATER (FEET):	7
DEPTH TO POSTULATED HIGH WATER TABLE (FEET)	5
EQUIVALENT DEPTH OF SOIL REMOVED (FEET)	0
EARTHQUAKE MAGNITUDE:	7.1
MAXIMUM GROUND ACCELERATION (g's):	0.50
BOREHOLE DIAMETER Cb (mm):	127

NO.	BORING NUMBER	CENTER OF LAYER (FEET)	DEPTH OF SPT (FEET)	THICKNESS OF LAYER (FEET)	STD PEN TEST "N" VALUE	FINES CONTENT (%)	DEPTH OF SPT CURRENT WATER TABLE TOTAL OVERBURDEN (P.S.F.)	EFFECTIVE OVERBURDEN (P.S.F.)	C_n CORRELATION FACTOR	C_b BOREHOLE DIA. FACTOR	$N1_{60}$ FACTOR	ALPHA FACTOR	BETA FACTOR	$(N1)_{60cs}$	CLEAN SAND RELATIVE DENSITY	CENTER OF LAYER POSTULATED HIGH GROUND WATER TOTAL OVERBURDEN (P.S.F.)	EFFECTIVE OVERBURDEN (P.S.F.)	r_d STRESS REDUCTION FACTOR	CSR CYCLIC STRESS RATIO	$CRR_{7.5}$ CYCLIC RESISTANCE RATIO	MSF MAGNITUDE SCALING FACTOR	FS FACTOR OF SAFETY	METHOD 1 VOLUMETRIC STRAIN (%)	METHOD 1 SETTLEMENT (INCHES)
1	2	5.50	5.00	1.00	9	5	650	650	1.70	1.05	16.1	0.00	1.00	16.1	60	706	674	0.99	0.34	0.17	1.15	0.59	1.80%	0.216
2	2	7.00	7.00	2.00	6	12	910	910	1.51	1.05	9.5	1.55	1.03	11.4	49	872	747	0.98	0.37	0.12	1.15	0.38	2.30%	0.552
3	2	12.75	12.50	2.50	17	58	1521	1177	1.33	1.05	23.7	5.00	1.20	33.5	83	1510	1027	0.97	0.46	0.48	1.15	10.00	0.00%	0
4	2	15.50	15.50	3.00	6	50	1854	1323	1.25	1.05	7.9	5.00	1.20	14.5	55	1816	1160	0.96	0.49	0.16	1.15	0.37	2.00%	0.72
5	2	18.50	22.00	3.00	1.2	50	2575	1639	1.13	1.05	1.4	5.00	1.20	6.7	35	2149	1306	0.96	0.51	0.08	1.15	0.17	3.20%	1.152
6	2	21.50	22.00	3.00	1.2	50	2575	1639	1.13	1.05	1.4	5.00	1.20	6.7	35	2482	1452	0.95	0.53	0.08	1.15	0.17	3.20%	1.152
7	2	26.50	28.00	7.00	1.2	50	3241	1931	1.04	1.05	1.3	5.00	1.20	6.6	35	3037	1695	0.94	0.55	0.08	1.15	0.16	3.20%	2.688
8	2	32.50	34.00	5.00	1.2	50	3907	2222	0.97	1.05	1.2	5.00	1.20	6.5	35	3703	1987	0.91	0.55	0.08	1.15	0.16	3.50%	2.1
9	2	38.00	40.00	6.00	12	54	4573	2514	0.91	1.05	11.5	5.00	1.20	18.8	63	4313	2254	0.86	0.54	0.20	1.15	0.43	1.65%	1.188
10	2	47.00	46.00	5.00	8.4	50	5239	2805	0.86	1.05	7.6	5.00	1.20	14.1	55	5312	2691	0.79	0.51	0.15	1.15	0.35	2.00%	1.2
11	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
12	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
13	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
14	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
15	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
16	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
17	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
18	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
19	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
20	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
21	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
22	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
23	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
24	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
25	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
26	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
27	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
28	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
29	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
30	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
31	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
32	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
33	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
34	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
35	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
36	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
37	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
38	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
39	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
40	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
41	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
42	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
43	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
44	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
45	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
46	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
47	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
48	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
49	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
50	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0

TOTAL SETTLEMENT - METHOD 1: 10.97

FIGURE B–2.2

VAN BEVEREN & BUTELO, INC.
SPT Liquefaction, Ver. 1.1

Youd & Idriss, 1997 NCEER-97-0022

JOB NO.: 07-025
CLIENT: Boat Central
BY: VL

REQUIRED INFORMATION:

WET UNIT WEIGHT ABOVE WATER (P.C.F.):	130
WET UNIT WEIGHT BELOW WATER (P.C.F.):	111
DEPTH TO WATER (FEET):	7
DEPTH TO POSTULATED HIGH WATER TABLE (FEET)	5
EQUIVALENT DEPTH OF SOIL REMOVED (FEET)	0
EARTHQUAKE MAGNITUDE:	7.1
MAXIMUM GROUND ACCELERATION (g's):	0.50
BOREHOLE DIAMETER Cb (mm):	127

NO.	BORING NUMBER	CENTER OF LAYER (FEET)	DEPTH OF SPT (FEET)	THICKNESS OF LAYER (FEET)	STD PEN TEST "N" VALUE	FINES CONTENT (%)	DEPTH OF SPT CURRENT WATER TABLE TOTAL OVERBURDEN (P.S.F.)	DEPTH OF SPT CURRENT WATER TABLE EFFECTIVE OVERBURDEN (P.S.F.)	C_n CORRELATION FACTOR	C_b BOREHOLE DIA. FACTOR	$N1_{60}$ FACTOR	ALPHA FACTOR	BETA FACTOR	$(N1)_{60cs}$	CLEAN SAND RELATIVE DENSITY	CENTER OF LAYER POSTULATED HIGH GROUND WATER TOTAL OVERBURDEN (P.S.F.)	CENTER OF LAYER POSTULATED HIGH GROUND WATER EFFECTIVE OVERBURDEN (P.S.F.)	r_d STRESS REDUCTION FACTOR	CSR CYCLIC STRESS RATIO	$CRR_{7.5}$ CYCLIC RESISTANCE RATIO	MSF MAGNITUDE SCALING FACTOR	FS FACTOR OF SAFETY	METHOD 1 VOLUMETRIC STRAIN (%)	METHOD 1 SETTLEMENT (INCHES)
1	3	5.50	5.00	1.00	21	5	650	650	1.70	1.05	37.5	0.00	1.00	37.5	87	706	674	0.99	0.34	0.78	1.15	10.00	0.00%	0
2	3	6.50	8.00	1.00	27	7	1021	959	1.47	1.05	41.8	0.12	1.01	42.2	92	817	723	0.98	0.36	2.72	1.15	10.00	0.00%	0
3	3	8.00	8.00	2.00	27	7	1021	959	1.47	1.05	41.8	0.12	1.01	42.2	92	983	796	0.98	0.39	2.72	1.15	10.00	0.00%	0
4	3	11.75	12.00	5.50	6	50	1465	1153	1.34	1.05	8.5	5.00	1.20	15.2	57	1399	978	0.97	0.45	0.16	1.15	0.42	1.90%	1.254
5	3	17.75	20.00	6.50	4.8	31	2353	1542	1.16	1.05	5.9	4.77	1.16	11.6	49	2065	1270	0.96	0.51	0.13	1.15	0.28	2.30%	1.794
6	3	23.25	20.00	4.50	4.8	13	2353	1542	1.16	1.05	5.9	1.89	1.04	8.0	39	2676	1537	0.95	0.54	0.09	1.15	0.19	3.00%	1.62
7	3	39.50	38.00	5.00	16.8	42	4351	2417	0.93	1.05	16.4	5.00	1.20	24.6	72	4480	2327	0.85	0.53	0.28	1.15	0.60	1.25%	0.75
8	3	44.00	44.00	4.00	4.8	50	5017	2708	0.88	1.05	4.4	5.00	1.20	10.3	47	4979	2545	0.82	0.52	0.11	1.15	0.25	2.50%	1.2
9	3	49.75	50.00	7.50	9.6	90	5683	3000	0.83	1.05	8.4	5.00	1.20	15.1	57	5617	2825	0.77	0.50	0.16	1.15	0.38	1.90%	1.71
10	3	54.75	56.00	2.50	37.2	15	6349	3291	0.79	1.05	31.1	2.50	1.05	35.0	85	6172	3068	0.73	0.48	0.57	1.15	10.00	0.00%	0
11	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
12	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
13	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
14	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
15	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
16	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
17	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
18	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
19	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
20	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
21	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
22	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
23	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
24	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
25	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
26	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
27	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
28	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
29	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
30	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
31	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
32	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
33	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
34	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
35	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
36	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
37	0	#DIV/0!	0.00	0.00	0	0	0	0	#DIV/0!	1.05	#DIV/0!	0.00	1.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.15	#DIV/0!	#DIV/0!	0
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TOTAL SETTLEMENT - METHOD 1: 8.33

FIGURE B–2.3

JOB No.: 07-025
PROJECT: Boat Central

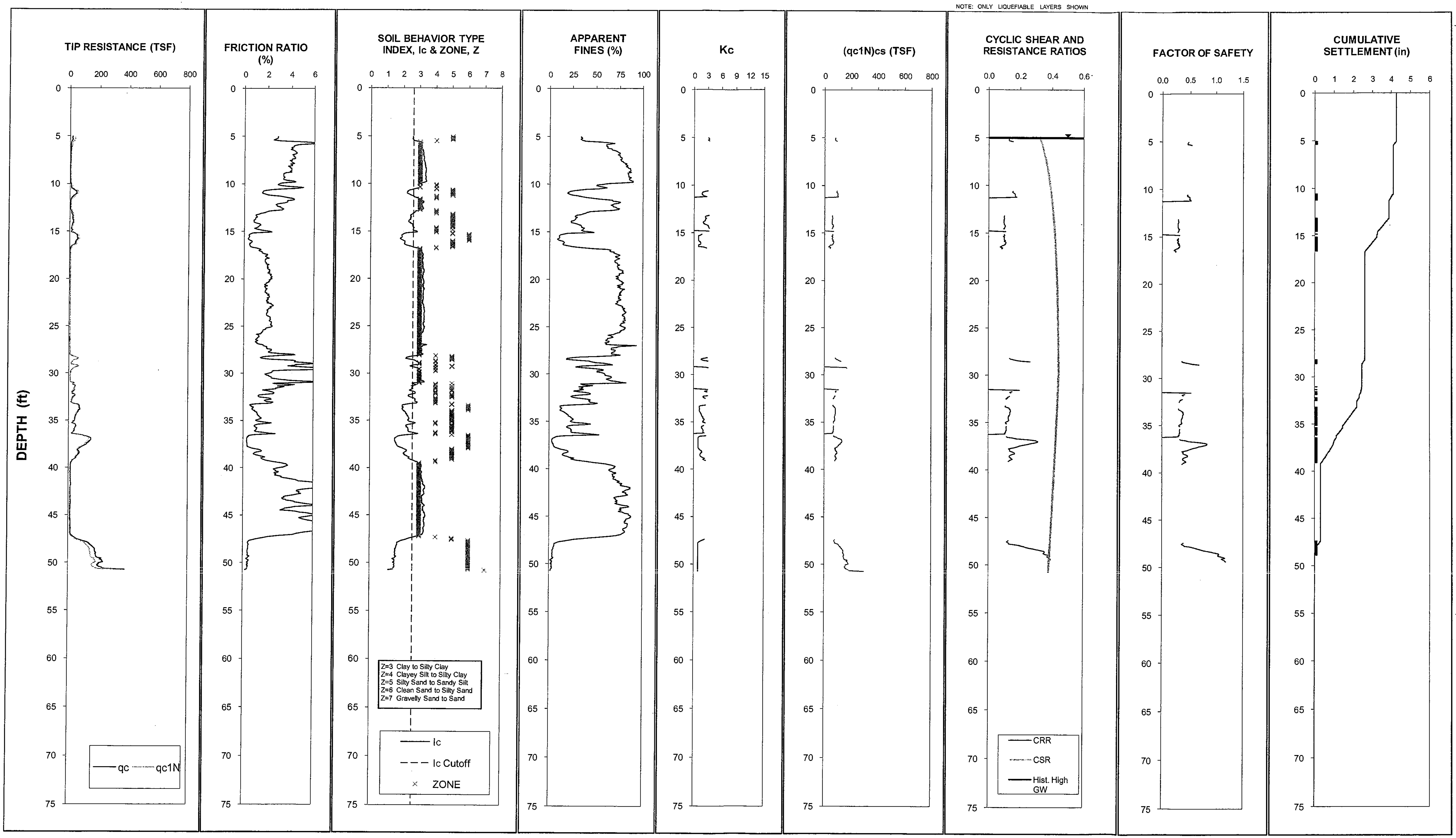
EARTHQUAKE MAGNITUDE: 7.1
PEAK GROUND ACCEL: 0.50

HISTORIC HIGH GW: 5.0
MEASURED GW: 7.0

SURCHARGE: 0.0
Ic CUTOFF: 2.60

CPT-1

NOTE: ONLY LIQUEFIABLE LAYERS SHOWN



CPT-1 liquefaction
1/13/2008 12:36 PM

LIQUEFACTION ANALYSIS

FIGURE B–2.4

VAN BEVEREN & BUTELO, INC.

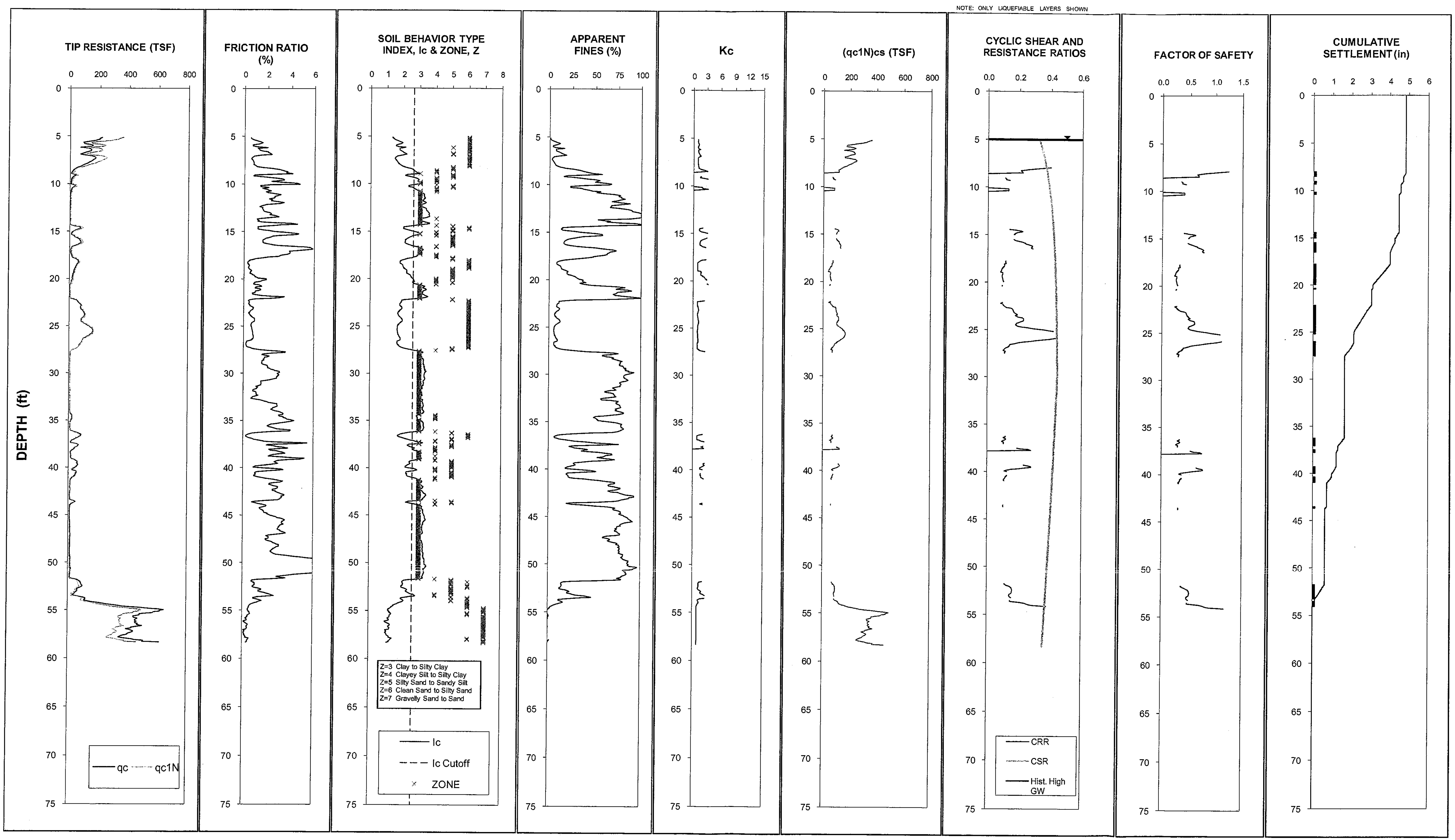
JOB No.: 07-025
PROJECT: Boat Central

EARTHQUAKE MAGNITUDE: 7.1
PEAK GROUND ACCEL: 0.50

HISTORIC HIGH GW: 5.0
MEASURED GW: 7.0

SURCHARGE: 0.0
Ic CUTOFF: 2.60

CPT-2



CPT-2 liquefaction
1/13/2008 12:40 PM

LIQUEFACTION ANALYSIS

FIGURE B-2.5

VAN BEVEREN & BUTELO, INC.

Appendix G –
Phase I Preliminary Environmental Site Assessment dated August 3, 2007, prepared by Methane Specialists

METHANE
SPECIALISTS

621 Via Alondra
Suite 611
Camarillo, California
93012

TEL: 805.987.5356
FAX: 805.987.3968

methanespecialists.com

PHASE I PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT

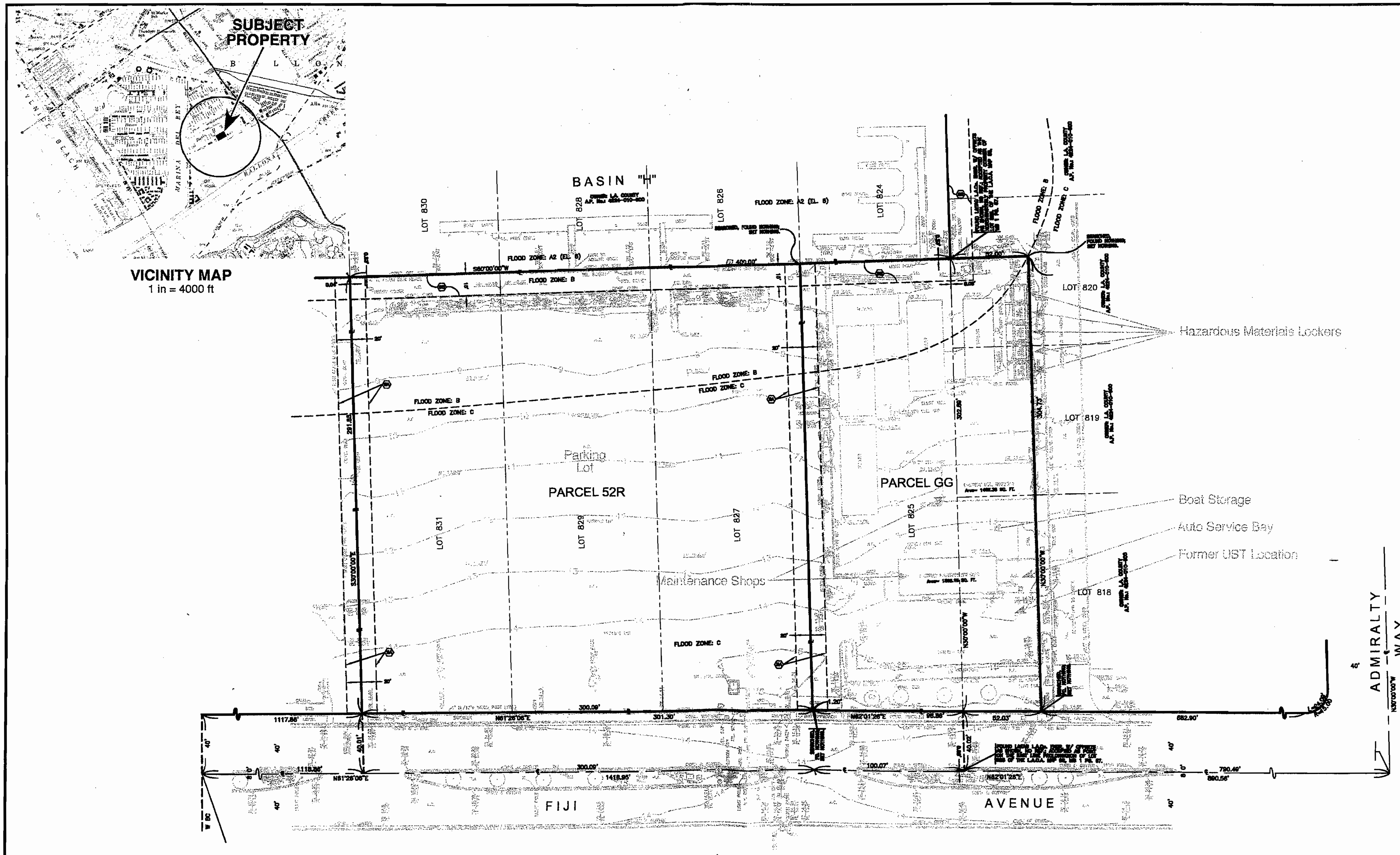
Commercial Property
13483 Fiji Way
Marina Del Rey, CA 90292
APN 4224-010-900
Parcels 52R & GG

Prepared for:
Pacific Marina Development
3416 Via Lido, Suite G
Newport Beach, CA 92663

Attn: Thomas Hogan

August 3, 2007

MS Job No. J1841



Scale

20 0 20 40 60 80 100 feet

1 in = 60 ft

REFERENCE: Topographic Survey by B & E Engineers, undated

DRAWN BY: WILLOW BROHMER	
CHECKED BY: MICHAEL TIFFANY, R.G.	
DATE: JULY 2007	

PLOT PLAN & VICINITY MAP

PACIFIC MARINA DEVELOPMENT

13483 Fiji Way

Marina Del Rey, California

METHANE SPECIALISTS

Figure 1

TABLE OF CONTENTS

2575-21278

California Regional Water Quality Control Board

Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties
Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

November 12, 2003

Ms. Jolene Guerrero
County of Los Angeles Department of Public Works
Construction Division
P.O. Box 1460
Alhambra, CA 91802-1460

C400940

UNDERGROUND STORAGE TANKS (UST) PROGRAM – WORKPLAN FOR GROUNDWATER INVESTIGATION
LOS ANGELES COUNTY SHERIFF MARINE DOCK 52
13483 FIJIWAY, MARINA DEL REY (CASE ID NO. R-21278)

Dear Ms. Guerrero:

Thank you for submitting the general information package dated October 22, 2003, regarding the above referenced site. The general information package contains a report entitled "Environmental Site Assessment Report and Remediation Action Plan" (Report) dated March 10, 2003, prepared by Shaw Environmental, Inc. (Shaw). The data from Shaw's Report indicate that elevated levels of total petroleum hydrocarbon as gasoline (TPH_G), benzene, toluene, ethyl benzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) were detected in soil samples collected during the tank removal and site assessment. The maximum TPH_G, benzene and MTBE concentrations in soil were detected at 1,060 mg/kg, 1.3 mg/kg, and 8.6 mg/kg (from sample D1), respectively. TPH_G, benzene and MTBE were also detected in the groundwater sample collected from HydroPunch borehole SB-23. The maximum TPH_G, benzene and MTBE concentrations in groundwater were detected at 2,340 μg/L, 150 μg/L and 1,190 μg/L, respectively.

We have reviewed the Report and the information contained in the file. The historical data from previous investigation indicate that the soil and groundwater underneath the subject site have been impacted by petroleum hydrocarbon release(s). Therefore, you are required to conduct further subsurface investigation at the site.

1. You must submit a workplan for installing a minimum of three groundwater monitoring wells onsite to a depth of 20 feet below the water table. One well must be installed near former borehole SB-23, one near boring SB-7, and one near boring SB-18. Your workplan is due by **December 31, 2003**. The workplan must include the proposed locations of the groundwater monitoring wells and sampling/analytic protocols. The workplan must also include the information on the depth to drinking water aquifer, hydrogeological units of the aquifer, and a scaled map showing the locations and identifications of all production wells and surface water bodies within a one mile radius of the site.

2. In the Report, Shaw recommended to conduct groundwater remediation using air sparging technology (combined with soil vapor extraction) at the Site and proposed to perform a pilot test to evaluate the feasibility of this technology. We concur with Shaw's proposal. You are approved to conduct the proposed pilot test and required to submit a Pilot Test Report, due **February 16, 2004**.

1 3712&9

Your Pilot Test Report must include all the test results, the conclusion of the test and recommendations for remediation. If the pilot test concludes the proposed technology is desirable for the Site, you must include an Interim Remedial Action Plan (IRAP) in the Pilot Test Report.

3. The construction and development of groundwater monitoring well must comply with requirements prescribed in Title 23, California Code of Regulation, Division 3, Chapter 16, Section 2649.

4. All necessary permits must be obtained from the Los Angeles County Department of Health Services and any other appropriate agencies prior to the start of work.

5. Your report submitted to this office must conform to the "Guidelines for Report Submittals," (June 1993) published by the Los Angeles County Department of Public Works.

6. You are required to submit a site-specific Health and Safety Plan at least two weeks prior to the start of fieldwork.

7. Continuous coring can provide information that may be used to design soil vapor extraction wells and/or groundwater monitoring wells. At a minimum, one continuous core must be extended to the water table at a location other than the source area.

8. All work must be performed by or under the direction of a registered geologist or civil engineer. A statement is required in the report that the registered professional in responsible charge actually supervised or personally conducted all the work associated with the project.

9. Soil samples shall be collected at five-foot intervals for logging from the ground surface to the water table, at changes in soil lithology, and at areas of obvious contamination. The professional in responsible charge shall review the boring logs and assume responsibility for the accuracy and completeness of the logs.

10. All soil and groundwater samples must be analyzed by EPA Method 8015 modified for TPH_G, EPA Method 8260B for BTEX, MTBE, di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA). Soil samples must be prepared per the EPA Method 5035. All analytical data must be reported by a California certified laboratory in the Regional Board's laboratory report forms.

If you have any questions regarding this matter, please contact me at (213) 576-6715.

Sincerely,

ORIGINAL SIGNED BY

WEIXING TONG, Ph.D., R.G., C.H.G., C.E.G.
Engineering Geologist (Range D)
Underground Tanks/LA Coastal

cc: Ms. Yvonne Shanks, State Water Resources Control Board, Underground Storage Tank Cleanup Fund
Mr. Hoover Ng, Water Replenishment District of Southern California
Mr. Tim Smith, Los Angeles County DPW, Environmental Program Division
Ms. Diane Buchanan, Shaw Environmental, Inc.

APPENDIX III

SCAQMD Files

Building Permit Records

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

JAMES A. NOYES, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
www.ladpw.org

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

July 17, 2003

IN REPLY PLEASE REFER TO FILE: EP-1
002575-021278

Mr. Bruce Kragen
Los Angeles County Sheriff's Department
1000 South Fremont Avenue
Alhambra, CA 91803

Dear Mr. Kragen:

**HAZARDOUS MATERIALS UNDERGROUND STORAGE PERMIT
SITE INVESTIGATION/ASSESSMENT REPORT
FACILITY LOCATION: 13483 FIJI WAY, MARINA DEL REY**

This office has reviewed the site assessment report submitted by Shaw Environmental, consultant for the subject site. Based on the report there is significant soil and groundwater contamination at this site. Pursuant to Section 25297(b) of the California Health and Safety Code, we are referring this matter to the California Regional Water Quality Control Board. For further information regarding the Water Board's requirements, please contact Mr. David Bacharowski at 320 West 4th Street, Suite 200, Los Angeles, CA 90013-1104, (213) 576-6620. Any further Assessment/Remedial Action Plans are subject to the direction and approval of the Water Board.

Please submit all future correspondence to the Water Board with a copy sent to this office.

If you have any questions regarding this matter, please contact Mr. John Awujo, of this office at (626) 458-3507, Monday through Thursday, 7 a.m. to 5:30 p.m.

Very truly yours,

JAMES A. NOYES
Director of Public Works

Shari Afshari

SHARI AFSHARI
Assistant Deputy Director
Environmental Programs Division

D:/Adis/K/Kragen/C383017

cc: California Regional Water Quality Control Board (David Bacharowski)
Construction Division (Jolene Guerrero)

EXECUTIVE SUMMARY

Methane Specialists has performed a Phase I Preliminary Environmental Site Assessment for the subject property located at 13483 Fiji Way in Marina Del Rey, California. The scope of the Phase I study meets the requirements of ASTM E 1527-05 *Standard Practice for Environmental Site Assessments – Phase I Environmental Site Assessment Process*.

The property is currently developed with a public paved parking lot, the Marina Del Rey Sheriff's Station maintenance building, maintenance shop, maintenance yard and storage, and five office trailers occupied by the Los Angeles County Department of Beaches and Harbors.

Historical sources indicate that the subject property was farmland prior to the development of Marina del Rey. The subject site was developed in the 1970s for a County boat repair and maintenance facility.

Historical research indicates that underground fuel storage tanks were installed on the site between 1976 and 1983. Research of Los Angeles County Department of Public Works Environmental Programs Division files revealed several previous reports on the subject property. A closure report for two 1,000-gallon underground storage tanks (USTs) removed on 12/28/1998 revealed a release of gasoline to soil at the subject site. The closure report recommended additional assessment in order to determine the extent of contamination in soil and/or groundwater.

A Environmental Site Assessment (ESA) Report and Remedial Action Plan was issued in March 2003 by Shaw Environmental. The ESA found BTEX and fuel oxygenates in soil and groundwater in the vicinity of the former USTs. Benzene and MtBE concentrations in groundwater significantly exceeded the drinking water Maximum Contaminant Levels (MCLs). The ESA recommended that three groundwater-monitoring wells be installed to complete plume delineation and determine groundwater flow direction. The report was reviewed by the Los Angeles Regional Water Quality Control Board (LARWQCB). The LARWQCB required that the three wells be installed as recommended in the ESA report, and that investigation of the contamination be continued. No records were found to indicate that the orders of the LARWQCB of 11/12/2003 have been carried out.

The subject property is listed in the Environmental Data Resources, Inc. (EDR) Radius Report as a hazardous waste generator and a leaking underground storage tank (LUST) site. The maintenance facility uses and stores hazardous materials including motor oil and petroleum solvents. The business generates hazardous waste in the form of waste oil and waste petroleum solvents. SCAQMD files indicate no outstanding violations or known releases of hazardous waste to soil or groundwater at the property.

The general housekeeping in the maintenance facility is good. Minor oil and solvent stains located at various locations around the maintenance yard on the paved asphalt create a potential for soil contamination by penetration through cracks in the pavement.

Environmental Data Resources, Inc. (EDR) conducted a radius search of standard environmental records sources in accordance with ASTM E1527-05. The nearest listed environmental risk sites are the business located at 13555 Fiji Way, adjacent to the west side of the subject property, and the business located at 13645 Fiji Way, approximately 348 feet to the west of the subject property. These sites use hazardous materials and/or generate hazardous waste, but they are not listed as known contaminated sites.

The nearest listed contaminated site is a Unocal gas station located at 13701 Fiji Way, approximately 600 feet south-west of the subject property.

Soil and or groundwater contamination from the above mentioned nearby sites is considered unlikely due to the distance from the subject site.

Standard government records sources, historical records sources, interviews and a site reconnaissance revealed no other onsite or offsite recognized environmental conditions associated with the subject property.

RECOMMENDATIONS

The latest document in the LADPW UST file for the subject site is the LARWQCB letter of November 2003 requiring further investigation of contamination and the installation of three monitoring wells. No information was found to indicate that the LARWQCB order has been complied with. Methane Specialists recommends that the site be brought into compliance by responding to the outstanding LARWQCB order prior to development of the site.

Compliance with the LARWQCB order requires defining the lateral extent of groundwater contamination by installing a minimum of three groundwater monitoring wells, monitoring the wells over time, and proposing a remedial action plan. Because of the time which has elapsed since the last investigation, the extent of the plume in soil and groundwater may have changed significantly.

Auto and boat repair activities at the subject property create the potential for soil and/or groundwater contamination with solvents or petroleum products in areas other than the UST location.

Methane Specialists recommends a Phase II Subsurface Site Assessment with the purpose of assessing the potential for contamination from non-UST sources, evaluating the current extent of the UST release, initiating compliance with the RWQCB order, and estimating the scope and cost of remediation. The recommended scope of the Phase II study includes the sampling of 10 to 15 hydraulic push soil borings, collection of hydropunch water samples from the borings, and installation and sampling of 3 to 5 groundwater monitoring wells, depending on the results of the hydropunch sampling.

Methane Specialists has performed a Phase I Preliminary Environmental Site Assessment in accordance with ASTM E1527-05 for the subject property. A Phase II Subsurface Environmental Site Assessment is recommended to evaluate the potential for soil or groundwater contamination associated with the recognized environmental conditions and comply with the regulatory requirements described in this report.

INTRODUCTION

The following report presents the findings of the Phase I Preliminary Environmental Site Assessment conducted for the subject property located at 13483 Fiji Way, Marina Del Rey, California. The scope of the Phase I study meets the requirements of ASTM E1527-05 *Standard Practice for Environmental Site Assessments – Phase I Environmental Site Assessment Process*. The purpose of the study is the preliminary evaluation of environmental conditions which may be associated with the subject property.

The scope of this study included:

- A walkover of the site.
- Interviews with the owner and property manager of the site.
- Review of County of Los Angeles Department of Public Works files for underground storage tanks or hazardous materials on the site.
- Review of South Coast Air Quality Management District files for permit inspections, violations and compliance on the subject site.
- Review of building permits for the subject site at the Los Angeles County Department of Building and Safety produced by Permits, Etc.
- Review of a Sanborn Fire Insurance Map search produced by Environmental Data Resources, Inc. (EDR).
- Review of a historical city directory report produced by EDR.
- Review of historical topographic maps produced by EDR.
- Review of historical aerial photographs produced by EDR.
- Review of Oil Field Maps produced by the California Division of Oil, Gas, and Geothermal Resources.
- Review of a *Radius Map with Geocheck* report of standard government databases of environmental risk sites produced by EDR.
- Preparation of this report.

The findings in this report represent the professional opinions of Methane Specialists based on existing conditions and available information at the time of the study. Factual information regarding operations, conditions, and test data provided by the client, the owner, their representatives, government agencies, or research sources has been assumed to be correct and complete. This report is subject to the **LIMITATIONS** given on the signature page.

SITE DESCRIPTION

LOCATION AND LEGAL DESCRIPTION

The subject project site is identified as ***Parcel 52R and Parcel GG as indicated on amendments to the County of Los Angeles Marina del Rey Local Implementation Program Appendices, California Coastal Commission Approved May 10, 1995*** (Topographic Survey by B & E Engineers, no date).

The legal description shown on the survey map is lots 824 to 829 inclusive of L.A.C.A Map no. 88, in the County of Los Angeles State of California, recorded in book 1 pages 53 to 70 of the Los Angeles County Assessor's Maps, in the office of County Recorder of said County. Parcels 52R and GG as shown on the survey map include lots 825, 827, 829, and 831, and portions of lots 824, 826, 828, 830, and 818-820.

The street address associated with the L.A. County facility on the project site 13483 Fiji Way, Marina Del Rey, California. The Assessor's Parcel Number is 4224-010-900.

METHODOLOGY AND LIMITING CONDITIONS

The site conditions were observed during a preliminary reconnaissance visit conducted by Willow Brohmer and Michael Tiffany on July 23, 2007. The environmental assessor completed an Environmental Field Reconnaissance Questionnaire during the reconnaissance. The completed Questionnaire is attached in **APPENDIX I.**

The purpose of the preliminary reconnaissance was to determine boring locations for the scoped Phase II subsurface assessment. Some portions of the site, including the interiors of the buildings, trailers, and storage containers at the County facility, were not completely observed.

GENERAL SITE SETTING

The subject site consists of a 3-acre rectangular-shaped parcel off Fiji Way, bounded by Basin H to the north, Fiji Way to the south, a boatyard to the west and an access road to the marina to the east.

The subject site consists of two parcels (See attached **PLOT PLAN**), Parcel 52R to the west and Parcel GG to the east. Parcel 52R consists of an asphalt-paved public parking lot. Parcel GG consists of a Los Angeles County facility occupied by the Sheriff's Department and the Department of Beaches and Harbors.

The surrounding area includes Fisherman's Village and other marine businesses to the west, the docks and open water of Basin H to the north, boat storage and public parking to the east and the wetlands of Ballona Creek to the south across Fiji Way. The entire Marina del Rey area is owned by the County of Los Angeles and leased to various tenants.

A list of selected environmental risk sites identified within a 1,000-foot radius of the subject property is included in the **STANDARD ENVIRONMENTAL RECORDS SOURCES** section of this report.

SITE OBSERVATIONS

The western portion of the site (Parcel 52R) is a public parking lot. At the time of the preliminary reconnaissance the parking lot was partially occupied by vehicles. Scattered minor oil staining was observed on the pavement.

A planter is located along the north side of the parking lot. A sidewalk is located between the planter and the waterfront. A sewer manhole is located in the sidewalk. A boat dock is accessible from the sidewalk through locked gates.

The eastern portion of the site (Parcel GG) consists of the Marina Del Rey Sheriff's Station maintenance building, auto and boat maintenance shops, maintenance yard, and hazardous materials storage; five office trailers occupied by the Los Angeles County Department of Beaches and Harbors; and two L.A. County Fire Department rescue equipment storage containers.

General housekeeping of the interior and exterior of the subject property is good. Fifty-five-gallon drums observed in the maintenance yard/storage area were labeled but not in secondary containments. Five metal hazardous materials lockers are located along the north-east side of the maintenance yard. Paint containers were observed in one locker, the others were inaccessible at the time of the preliminary site visit.

An outdoor auto service bay is located at the east end of the Sheriff's Department maintenance building. An aboveground waste oil storage tank, an air compressor, a hydraulic lift, and a storm drain catch basin are located in the service bay. A parts cleaner was observed in the maintenance yard adjacent to the service bay. Stains were observed on the pavement near the parts cleaner.

A patched area of pavement south of the service bay corresponds to the location of the former underground fuel storage tanks.

A metal building north of the Sheriff's maintenance building is occupied by a boat repair shop. Boat engines are stored in a shed north of the auto service bay. Several boats were present in the yard between the Sheriff's building and the boat repair shop. According to County employees at the subject property, boat-hull washing has not been conducted at the subject property.

Small (5-gallons or less) containers of hazardous materials, including paint, lubricants, cleaners, and similar maintenance products were observed in the maintenance shop and storage areas. No evidence of significant releases of hazardous materials was observed.

VEGETATION

The subject property is entirely paved except for decorative planters. No evidence of distressed vegetation was observed.

TOPOGRAPHY AND DRAINAGE

The topography of the site is generally flat, sloping gradually to the north with an elevation of seven to fifteen feet above sea level. A seawall separates the site from the marina basin to the north.

Drainage from the site is via sheetflow to Fiji Way to the south and to storm drains located on the site. It is currently unknown whether the storm drains connect to the sanitary sewer or drain to the marina basin.

HYDROGEOLOGY

The subject site is located approximately 0.3 miles north of Ballona Creek, in the Ballona Gap, in the southern portion of the Santa Monica Basin. The site is underlain by artificial fill and Quaternary alluvium consisting of clay and sandy clay.

Borings excavated at the site by Shaw Environmental in 2002 encountered groundwater at depths of 4.5 to 6.5 feet beneath the ground surface. Groundwater beneath the site is likely to be brackish and tidal.

PREVIOUS WORK

Two previous reports on the subject property were obtained at the Los Angeles County Department of Public Works Environmental Programs Division on July 23, 2007. The reports are listed below. Selected portions of each report are attached in **Appendix II**.

- *<u>UST Removal Report, Los Angeles County Sheriff's Station, 13483 Fiji Way, Dock 52, Marina Del Rey, California</u>, by TAIT Environmental Management, Inc., February 18, 1999.* This report summarizes the removal of two 1,000-gallon USTs (underground storage tanks) conducted on December 28, 1998. The results of the soil samples taken for the tank removals reported TPH-G, Benzene and MTBE at or above laboratory detection limits. The report recommended additional assessment to characterize the extent of soil and possible groundwater contamination.

- *<u>Environmental Site Assessment Report and Remedial Action Plan, Marina Del Rey Sheriff's Station, 13483 and 13851 Fiji Way, Marina Del Rey, CA 90292</u>, by Shaw Environmental, Inc., March, 2003.* This report summarizes the environmental site assessment activities that took place at the Marina Del Ray Sheriff's Station facilities at 13483 and 13851 Fiji Way. The subject site includes the 13483 Fiji Way address (referred to as Dock 52 in the report); the 13851 Fiji Way facility (referred to as the Sheriff's Station) is offsite. The report recommends that three groundwater-monitoring wells be installed at the subject site (Dock 52) to complete plume delineation and determine groundwater flow direction.

SITE UTILIZATION HISTORY

HISTORICAL FIRE INSURANCE MAPS

The EDR Company was contacted to obtain historical Sanborn Fire Insurance Maps for the subject property. EDR reported that no Sanborn maps were found for the area of the subject property.

LACDPW FILE REVIEW

The Los Angeles County Department of Public Works (LACDPW) Environmental Programs Division file records were reviewed on 7/23/07 for the purpose of researching underground storage tanks (USTs) and hazardous materials on the subject property. A summary of the file records research is included in **TABLE I**. Copies of selected permits and related documents are included in **APPENDIX II**. Pertinent reports from LACDPW files are summarized in **PREVIOUS WORK**, above.

TABLE I
LACDPW File Review

Date	Owner/Facility	Description
12/28/76	Boat Repair and Maintenance Center, Marina Del Rey	Letter to Los Angeles County Engineering Department with schematic plan for boat repair facility.
1/21/77	County Boat Repair and Maintenance Center	Letter from Los Angeles County Engineer (LACE): The schematic plans for proposed boat repair and maintenance center was reviewed. LACE recommends designs that will exclude or reduce storm water runoff.
12/14/77	Maintenance Center Dept for Small Craft Harbors 13483 Fiji Way	Request for I-Number.
10/19/78	County Boat Repair and Maintenance Center	Memo: The proposal to construct a boat repair and maintenance yard has been abandoned due to lack of funds.
8/8/80	13483 Fiji way	Building Permit: Note on permit that project proposed (boat repair and maintenance center) never constructed and new project is not intended to discharge to sewer.
7/29/98	LA Co Small Craft Maintenance Yard Dock 52 13483 Fiji Way	LACDPW Fire Inspection: Activities Assessment Checklist, see **Appendix II** for details; Hazardous Materials System, IW Inspection Job Order: No. I000216320 -determine if IWDP required also perform storm water survey w/bubble form. -Current maintenance operation doesn't require an IWDP. No Vehicle washing done in maintenance area. Waste oil from vehicle maintenance is stored is 55-gallon drums located inside storage shed. Drum storage area not bermed for containment.
12/28/98	LA Co Sheriff Marine Dock 13483 Fiji Way	Documentation of leak discovered during tank removal.
2/18/99	Dock 52 13483 Fiji Way	UST Removal Report for subject property by TAIT Environmental Management, Inc. (see **PREVIOUS WORK**)
11/2/00	13483 Fiji Way	Letter from LACDPW informing that UST closure report was reviewed and that additional closure requirements are required including, vertical and lateral extent of contamination, remedial action plan to mitigate contamination and documentation as to depth of groundwater.
3/31/03	13483 and 13851 Fiji Way	Environmental Site Assessment Report (ESAR) and Remedial Action Plan by Shaw Environmental, Inc. (see **PREVIOUS WORK**)
7/17/03	13483 Fiji Way	Letter from LACDPW informing that the Shaw ESAR was reviewed and is being referred to the California Regional Water Quality Control Board (LARWQCB)
11/12/03	13483 Fiji Way	Letter from LARWQCB informing that Shaw ESAR was reviewed and requiring the installation of three groundwater-monitoring wells per the Shaw ESAR as well as other recommendations (see **Appendix II**).

SCAQMD FILE REVIEW

A Public Records Request form was submitted to the South Coast Air Quality Management District (SCAQMD) on 7/19/07 for the subject property for the purpose of review of permits, inspections, violations, compliance and any other information. A summary of the records review is included in **TABLE II.** Copies of the records are included in **APPENDIX III.**

TABLE II
SCAQMD File Review

Date	Permit/ NOV No.	Facility Name/Address	Description
3/1/83	908491	LA Co. Maintenance, 13483 Fiji Way	Permit to Operate: Amine (or DEA) Regeneration; Serv. Stat. Storage & Dispensing Gasoline
10/4/89	D10379	LA Co. Internal Services Department 13837-51 Fiji Way	Permit to Operate: Storage Tank Fuel Oil
10/22/93	N00633	LA Co. Sheriff's Dept. Dock 52 13483 Fiji Way	Permit to Operate: Storage Tank Gasoline; Amine Treating
8/8/94	488105	LA Co. Sheriff's Dept. 13483 Fiji Way	Violation; Compliance Required: a) Apply for p/o for gas equip. b) Install R461 Compliant fill tube c) Post R461 Compliant signs on dispensing station.
2/8/95	N02133	LA Co. Sheriff's Dept. Dock 52 13483 Fiji Way	Permit to Operate: Storage Tank Gasoline

BUILDING PERMIT RESEARCH

The Los Angeles County Building and Safety Department file records were reviewed by Permits Etc. for the purpose of researching building permits and certificates of occupancy for the subject property. A summary of the permit research is included in **TABLE III.** Copies of selected permits are included in **APPENDIX III.**

TABLE III
BUILDING PERMITS

Date	Permit No.	Owner	Description
8/23/85	Coastal Permit 5-85-523	Dept. of Harbors	Pier foundation-ramp-steps-installation of state approved trailer.
12/16/98	BL 1200 9812160060	Los Angeles Co.	Underground tank removal (2)
2/19/02	BL 1200 0110310058	Los Angeles Co DPW	Install canopy over recycling center. Note: Expired by time 8/18/03.

HISTORICAL CITY DIRECTORY RESEARCH

EDR Company was contacted to research historical city directories for the subject property and adjacent sites. The sources researched included the Los Angeles Directory Company, Kaasen Directory Company Publishers, R.L. Polk & Company, Pacific Directory Company, Pacific Telephone Company, Luskey Brothers & Company, GTE Directories, B&G Publications, Pacific Bell Telephone, and Haines & Company. The city directories were reviewed at approximately one-year intervals spanning from

1920 to 2006. A summary of city directories reviewed for the subject property and adjacent properties are included in **TABLE IV**. The EDR city directory report is attached in **APPENDIX IV**.

TABLE IV
CITY DIRECTORIES

Subject Property 13483 Fiji Way		
Year	**Listing**	**Source**
1920 – 1972	Address Not Listed in Research Source	Los Angeles Directory Company, Kaasen Directory Company Publishers, R.L. Polk & Company, Pacific Directory Company, Pacific Telephone Company, Luskey Brothers & Company, GTE, B&G Publications
1975	New Age Builders, Inc. (13483)	Pacific Telephone
1976-2006	Address Not Listed in Research Source	R.L. Polk & Company, Pacific Telephone Company, Pacific Bell Telephone, GTE, Haines & Company

Adjoining Properties Selected Addresses		
Year	**Listing & Address**	**Source**
1920-1964	Address Not Listed in Research Source	Los Angeles Directory Company, Kaasen Directory Company Publishers, R.L. Polk & Company, Pacific Directory Company, Pacific Telephone, Luskey Brothers & Company
1965	**Fiji Way** Multi-Family Residency (13900) Multi-Family Residency (13902)	GTE
1966	**Fiji Way** Los Angeles County of Small Craft Harbors Dept of Marina Del (13837)	Pacific Telephone
1967-69	Address Not Listed in Research Source	R.L. Polk & Company, Pacific Telephone

Adjoining Properties
Selected Addresses

Year	Listing & Address	Source
1970	**Admiralty Way** International Jewelry Bazaar (4750) Security Pacific National Bank (4754) Compucenters Inc (4756) Laikin Optical Corp (4756) Cabana Fashions (4760) Paraphernalia Womens Apprl (4762) Captains Locker Marina Del Rey (4766) Marina Interiors (4770) House of Sight & Sound (4774) Sight & Sound House of (4774) House of Novey Lighting Fxtrs (4786) Admiralty Gourmet Liquor The (4790) **Fiji Way** Chris-Craft Corp (13555)	R.L. Polk & Company
1971-1972	Address Not Listed in Research Source	B&G Publications, R.L. Polk & Company
1975	**Fiji Way** Los Angeles County of Marina Del Rey Administrative Ofcs & Harbor Patrol (13837) **Admiralty Way** Pier One Imports (4750) Natural Harvesters Inc (4756) Cabana Fashions (4760) Marina Travel (4762) Captains Locker Marina Del Rey (4766) Marina Interiors (4770) House of Sight & Sound (4774) Marina Del Rey Theatre (4786) Admiralty Gourmet Liquor The (4790) Marina Del Rey Liquormarts (4790)	Pacific Telephone
1976	**Admiralty Way** Marina Travel (4762)	R.L. Polk & Company

Adjoining Properties Selected Addresses		
Year	**Listing & Address**	**Source**
1980	**Admiralty Way** Checking & Savings Accounts Balances & Credit Ratings (4754) Checking & Savings Accounts Customer Service (4754) Checking & Savings Accounts New Account (4754) Checking & Savings Accounts Statements (4754) Exchange & Collections (4754) Loans Loans Balances & Credit Ratings (4754) Loans Master Charge & Ready Reserve (4754) Loans New Loan Applications (4754) Other Departments (4754) Security Pacific National Bank marina Del Rey Marina Del Rey (4754) Natural Harvesters Health Food (4756) Cabana Fashions (4760) LT Graphics (4762) Marina Travel (4762) Captains Locker Marina Del Rey (4766) Captains Locker Stores (4766) House of Sight & Sound (4774) Sight & Sound House of (4774) Admiralty Gourmet Liquor The (4790) **Fiji Way** Pieces of Eight Restrnts (13813) L.A. County of Small Craft Harbors (13837) Marina Del Rey Harbor Adminlstrtluea Ofs H Navbsr Ptrotl (13837) Marina Del Rey Harbor Los Angeles County Administrative Ofcs (13837) Stations Marina Del Rey (13837) Multi-Family Residency – Vil Los Angeles Venetia Apts (13900) Multi-Family Residency (13902) Multi-Family Residency (13904) Multi-Family Residency (13906) Multi-Family Residency (13908) Multi-Family Residency (13910) UCLA Student Extension/Programs Department (14001) L.A. County of Marina Del Rey (13837)	Pacific Telephone
1981	Address Not Listed in Research Source	Pacific Telephone Co.

Adjoining Properties Selected Addresses		
Year	**Listing & Address**	**Source**
1985	**<u>Admiralty Way</u>** Miller S outpost For Levis (4750) Pier One Imports (4750) Security Pacific National Bank (4754) Natural Vitamin Quota (4756) Marina Center Cleaners (4760) Marina Travel (4762) West Marine Products (4766) Christine Valmy Marina Del Rey Skin Care (4770) Valmy Christine Marina Del Rey (4770) Crown Books (4774) Admiralty Gourmet Liquor The (4790)	Pacific Bell
1986	Address Not Listed in Research Source	Pacific Bell
1990	**<u>Fiji Way</u>** Admin Ofc (13837) Animal (13837) L.A. County of Beaches Harbors Dept Admin Hdqtrs (13837) L.A. County of Board of Supervisors Board Action Info (13837) L.A. County of Board of Supervisors Board Agenda Info (13837) After Hours Weekends & Holidays (13851) L.A. County of Harbor Patrol (13851) UCLA Cultural & Recreational Affairs (14001)	Pacific Bell
1996	Address Not Listed in Research Source	GTE
1999	Address Not Listed in Research Source	Haines & Company
2000	Fiji Way Shanghai Reds (13813) L.A. Co. Bchs Hrbrs Adm Ofc (13837) L.A. Co. Bd Sprvsrs Fld Ofcs (13837) L.A. Co. Harbor Patrol (13851) Multi-Family Residency – Villa Venetia (13900) Multi-Family Residency (13902) Multi-Family Residency (13904) Multi-Family Residency (13906) Multi-Family Residency (13908) Multi-Family Residency (13910) UCLA Cultural & Recreational Affairs (14001)	Pacific Bell Telephone
2001	Address Not Listed in Research Source	Haines & Company
2003	Address Not Listed in Research Source	Haines & Company
2004	Address Not Listed in Research Source	Haines & Company
2006	Address Not Listed in Research Source	Haines & Company

HISTORICAL TOPOGRAPHIC MAP RESEARCH

The EDR Company was contacted to research topographic maps for the subject property and the surrounding area. The summaries of the results are in **TABLE V**. The topographic maps are attached in **APPENDIX IV**.

TABLE V
TOPOGRAPHIC MAPS

Year	Quadrangle	Description
1896	Redondo 15'	Subject property and surrounding area are shown as being part of Ballona Lagoon. Port Ballona is at the south entrance of the Lagoon. Santa Monica Branch railroad is built to the north of the Lagoon.
1901	Southern CA Sheet 1 60'	Subject property and surrounding area are shown as being part of Ballona Lagoon. More roads north and south of Port Ballona have been constructed.
1934	Venice 6'	Subject property and surrounding area are shown as being part of Ballona Lagoon. The Lagoon is now shown as a marsh. Culver Blvd. has been built east of the Lagoon and Washington St. has been built north of the Lagoon. Port Ballona is now Playa Del Rey, and there is development along the beach between the Lagoon and the water.
1948	Redondo 15'	Subject property and surrounding area are shown as being part of Ballona Marsh. There are oil wells south of the subject property. Roads have been built through parts of the marsh area, and Lincoln Blvd. has been built across the area. There is more development north and south of the Marsh.
1950	Venice 7.5'	Subject property and surrounding area are shown as part of the marsh area. Los Angeles Lake is north of the marsh, with oil tanks east of the Lake. Pacific Ave. runs along the development on the beach.
1964	Venice 7.5'	The harbor of Marina Del Rey is developed in the former marsh, with 8 basins. The subject property and surrounding area situated at end of Basin H. Fiji Way, Mindanao Way, and Admiralty Way are all developed, along with roads along the other basins. The surrounding area is developed more.
1972	Venice 7.5' Photo revised from 1964	Subject property shown vacant and undeveloped. There are buildings on some surrounding properties. Boat slips have been built in Basin H. Entire marina is developed with more properties.
1981	Venice 7.5' Photo revised from 1964	No changes from above.

HISTORICAL AERIAL PHOTOGRAPH RESEARCH

The EDR Company was contacted to obtain aerial photographs for the subject property and the surrounding area. A summary of the aerial photo observations is presented in **TABLE VI.** The aerial photographs are attached in **APPENDIX IV.**

TABLE VI
AERIAL PHOTOGRAPHS

Year	Photo I.D.	Description
1928	Fairchild	Subject property shown as vacant and unimproved farmland. There are no developed areas shown except for what appears to be a road northeast of the property where Lincoln Blvd. is today.
1938	Laval	The subject property remains vacant and unimproved. There are what appear to be two ponds just west of the property. The road to the northeast is bigger. Ballona Creek is present southeast of the property, with a bridge crossing it.
1947	Fairchild	The subject property remains vacant and unimproved. Ponds west of the property appear dried up. No other changes in adjacent properties.
1956	Fairchild	The subject property remains vacant and unimproved. The ponds appear dried up. No other changes in adjacent properties.
1965	Fairchild	Subject property remains vacant and unimproved. Marina Del Rey has been developed. Marina is full of water, some boat slips have been built, and some properties along the marina are developed. Adjacent property has boat slips and a building on it. South of the subject property is undeveloped.
1976	Teledyne	Parcel GG has a single building corresponding to the Sheriff's maintenance building. Parcel 52R appears vacant and unimproved. There is a parking lot on the property northeast of the subject property. Marina is full of boat slips and development.
1989	USGS	Parcel GG has four additional buildings on it. Parcel 52R is a parking lot. The property directly east appears to be a boat storage lot. South of the property remains unchanged.
1994	USGS	No change in subject property or adjacent areas.
2002	USGS	No change in subject property or adjacent areas.

NEARBY CONTAMINATED SITES

LANDFILLS

The EDR Radius Map Report showed no landfills or transfer stations located within a 1-mile radius of the subject property.

OIL FIELD MAPS

California Division of Oil, Gas and Geothermal Resources (DOGGR) oil field maps were researched to determine whether oil production occurred on or near the subject property. Map 120 shows that the nearest active oil field is the Playa Del Rey Field, located less than a quarter mile south of the subject property. The nearest oil well is the Marathon Oil Company No. 1 well, an uncompleted and abandoned well located less than a quarter mile north-west of the subject property.

STANDARD ENVIRONMENTAL RECORDS SOURCES

In addition to the above records, agency database lists were reviewed by EDR in the Radius Report for known or suspected contaminated sites and for sites that store, generate or use hazardous materials near the subject property. The subject property is listed on several of the standard environmental databases researched for this report. A list of selected environmental risk sites found to exist within a 1,000-foot radius of the property is listed in **TABLE VII**. The EDR Radius Report is attached in **APPENDIX V**.

TABLE VII
STANDARD ENVIRONMENTAL RECORD SOURCES

Subject Property 13483 Fiji Way	
Name	**Source(s)**
LA Co FMD Beach & Harbor Maintenance	CA FID SWEEPS UST
Beaches & Harbor Maintenance Center	Historical UST
LA Co Sheriff Dept.	HAZNET
LA Co Beaches & Harbor Maintenance	LA Co HMS
LA Co Sheriff Marine Dock	LUST LA Co HMS
LA Co Beach & Harbor Referrals	LA Co HMS
Johnson Control	HAZNET
LA Co Dept. Public Works/Used Oil Collect	HAZNET
LA Co Sheriff Dept./MDR Trailer	HAZNET

Properties within 1,000 foot Radius of Subject Property			
Name	**Address**	**Distance from Subject Property**	**Source(s)**
The Boat Yard.com	13555 Fiji Way	Adjacent WSW	HAZNET
Yamaha Marina Del Rey	13555 Fiji Way	Adjacent WSW	HAZNET LA Co HMS
Aggie Cat Yacht/Schuler Casey Aggie Chris Craft	13555 Fiji Way	Adjacent WSW	CA FID UST HAZNET SWEEPS UST LA Co HMS
CC Marine Services Inc.	13645 Fiji way	350 ft. SSW	Cleaners SWEEPS UST
Windward Yacht Center	13645 Fiji Way	350 ft. SSW	HAZNET RCRA FINDS HAZNET CA WDS
LA Co DPW	13477 Fiji Way	550 ft. E	HAZNET LA Co HMS
Unocal Corp	13701 Fiji Way	600 ft. SW	LA Co HMS HAZNET CA FID UST SWEEPS UST Historical UST HAZNET LUST Cortese ERNS
GE Telephone Corp.	13426 Fiji Way	600 ft. E	SWEEPS UST
Robert Scheer	13457 Fiji Way	650 ft. ENE	HAZNET
Bella Cleaner Marina Center Cleaners	4760 Admiralty Way	950 ft. NE	Cleaners HAZNET EMI

Note: A search of public information databases may omit some nearby contaminated sites due to missing or inaccurate information in the public record.

INTERVIEWS

A Environmental Field Reconnaissance Questionnaire was submitted to the property owner. The completed questionnaire has not yet been received.

CONCLUSIONS AND RECOMMENDATIONS

Methane Specialists (MS) has performed a Phase I Preliminary Environmental Site Assessment (ESA) in accordance with ASTM Standard E1527-05 for the subject property at 13483 Fiji Way in Marina Del Rey, California. The scope of work includes a site reconnaissance; an interview with the property owner; review of Los Angeles County Department of Public Works files; review of SCAQMD files; review of Los Angeles County Department of Building and Safety files; review of Sanborn fire insurance maps; review of historical city directories, topographic maps, and aerial photographs; review of oil field maps; and a database search for known environmental risk sites in the vicinity.

SITE UTILIZATION HISTORY

The property is currently developed with a public paved parking lot, the Marina Del Rey Sheriff's Station maintenance building, maintenance shop, maintenance yard and storage, and five office trailers occupied by the Los Angeles County Department of Beaches and Harbors.

Historical sources indicate that the subject property was farmland prior to the development of Marina del Rey. The subject site was developed in the 70's for a County boat repair and maintenance facility.

ONSITE ENVIRONMENTAL ISSUES

Historical research indicates that underground fuel storage tanks were installed on the site between 1976 and 1983. Research of Los Angeles County Department of Public Works Environmental Programs Division files revealed several previous reports on the subject property. A report on the closure of two 1,000-gallon underground storage tanks (USTs) removed on 12/28/1998 revealed a release of gasoline to soil at the subject site. The closure report recommended additional assessment in order to determine the extent of soil and or groundwater.

A Environmental Site Assessment (ESA) Report and Remedial Action Plan was issued in 3/2003 by Shaw Environmental. The ESA found BTEX and fuel oxygenates in soil and groundwater in the vicinity of the former USTs. Benzene and MtBE concentrations in groundwater significantly exceeded the drinking water Maximum Contaminant Levels (MCLs). The ESA recommended that three groundwater-monitoring wells be installed to complete plume delineation and determine groundwater flow direction. The report was reviewed by the Los Angeles Regional Water Quality Control Board (LARWQCB). The LARWQCB required that the three wells be installed as recommended in the ESA report, and that investigation of the contamination be continued. No records were found to indicate that the orders of the LARWQCB of 11/12/2003 have been carried out.

The subject property is listed in the Environmental Data Resources, Inc. (EDR) Radius Report as a hazardous waste generator and a leaking underground storage tank (LUST) site. The maintenance facility uses and stores hazardous materials including motor oil and petroleum solvents. The business generates hazardous waste in the form of waste oil and waste petroleum solvents. SCAQMD files indicate no outstanding violations or known releases of hazardous waste to soil or groundwater at the property.

The general housekeeping in the maintenance facility is good. Minor oil and solvent stains located at various locations around the maintenance yard on the paved asphalt create a potential for soil contamination by penetration through cracks in the pavement.

Standard government records sources, interviews and a site reconnaissance revealed no other onsite recognized environmental conditions associated with the subject property.

OFFSITE ENVIRONMENTAL ISSUES

Environmental Data Resources, Inc. (EDR) conducted a radius search of standard environmental records sources in accordance with ASTM E1527-05. The nearest listed environmental risk sites are the business located at 13555 Fiji Way, adjacent to the west side of the subject property, and the business located at 13645 Fiji Way, approximately 348 feet to the west of the subject property. These sites use hazardous materials and/or generate hazardous waste, but they are not listed as known contaminated sites.

The nearest listed contaminated site is a Unocal gas station located at 13701 Fiji Way, approximately 600 feet south-west of the subject property.

Soil and or groundwater contamination from the above mentioned nearby sites is considered unlikely due to the distance from the subject site.

RECOMMENDATIONS

The latest document in the LADPW UST file for the subject site is the LARWQCB letter requiring further investigation of contamination and the installation of three monitoring wells. No information was found to indicate that the LARWQCB order has been complied with. Methane Specialists recommends that the site be brought into compliance by responding to the outstanding LARWQCB order prior to development of the site.

Compliance with the LARWQCB order requires defining the lateral extent of groundwater contamination by installing a minimum of three groundwater monitoring wells, monitoring the wells over time, and proposing a remedial action plan. Because of the time which has elapsed since the last investigation, the extent of the plume in soil and groundwater may have changed significantly.

Auto and boat repair activities at the subject property create the potential for soil and/or groundwater contamination with solvents or petroleum products in areas other than the UST location.

Methane Specialists recommends a Phase II Subsurface Site Assessment with the purpose of assessing the potential for contamination from non-UST sources, evaluating the current extent of the UST release, initiating compliance with the RWQCB order, and estimating the scope and cost of remediation. The recommended scope of the Phase II study includes the sampling of 10 to 15 hydraulic push soil borings, collection of hydropunch water samples from the borings, and installation and sampling of 3 to 5 groundwater monitoring wells, depending on the results of the hydropunch sampling.

Methane Specialists has performed a Phase I Preliminary Environmental Site Assessment in accordance with ASTM E1527-05 for the subject property. A Phase II Subsurface Environmental Site Assessment is recommended to evaluate the potential for soil or groundwater contamination associated with the recognized environmental conditions and regulatory orders described in this report.

LIMITATIONS

This Phase I Preliminary Environmental Site Assessment and Phase II Subsurface Site Assessment is limited to the scope of work given in the **INTRODUCTION** to this report and does not purport to address issues not listed in the scope of work or in ASTM Standard E 1527-05. This report is intended to assist the user in conducting appropriate inquiry into the environmental condition of the property in order to meet the requirements for the innocent landowner defense under CERCLA (Superfund) regulations, as well as to identify any major business environmental risks associated with the property. No environmental site assessment can wholly eliminate uncertainty regarding the potential for environmental risks at a property. Determination of whether this study constitutes appropriate inquiry is the responsibility of the user.

The observations and conclusions given above are the professional opinions of Methane Specialists based on our observations and on reasonably ascertainable information supplied by government agencies, other records sources, and the client. This report was prepared in accordance with the standards of practice commonly used by environmental professionals in this area. No other warranty, expressed or implied, of any kind is made or intended in connection with this report, or by the fact you are being furnished this report, or by any other oral or written statement.

We appreciate the opportunity to be of service to you. If you have any questions please call Michael Tiffany or Chris Conohan at (805)987-5356.

Respectfully Submitted,

Michael R. Tiffany
Registered Environmental Assessor No. 5066
Professional Geologist No. 6750

Willow Brohmer
Environmental Technician

REGISTERED GEOLOGIST
MICHAEL R. TIFFANY
No. 6750
STATE OF CALIFORNIA

REGISTERED ENVIRONMENTAL ASSESSOR
MICHAEL R. TIFFANY
No. 01064
Expires: 6-30-08
STATE OF CALIFORNIA

ILLUSTRATIONS

PLOT PLAN

31. If hazardous or special wastes are generated at the property, how are they stored?	Yes, in 55-Gallon Drums.
32. Are pesticides or herbicides stored, mixed, or disposed of on the property?	No
33. Are there any transformers, capacitors, or hydraulic equipment on the property that are known or suspected of containing PCBs?	No
34. Are there any building materials on the property known or suspected to contain asbestos? Please describe:	Unknown
ENVIRONMENTAL COMPLIANCE	
35. Does the property or any occupant of or facility on the property have any licenses, permits, registrations, or notifications for tanks, pipelines, industrial waste, wastewater treatment, wastewater discharge, stormwater discharge, waste disposal, waste storage or treatment, air emissions, chemical use, or chemical storage?	Yes, inactive permits. -To operate fuel oil storage tank -To operate amine (or DEA) regeneration -To operate gasoline dispenser and service station storage -To operate storage tank gasoline
36. Is there visible evidence of any spills, leaks, or other releases or threatened releases of any hazardous substances or petroleum products from the property to soil, groundwater, or surface water?	Yes -Oil and solvent on asphalt.
37. Is there visible evidence of any release or threatened release of any hazardous substances or petroleum products from another location to soil, groundwater, or surface water at the property?	No
38. Is there visible evidence of the current or past existence of environmental violations on the property or in any facility located on the property?	Yes
39. Does the property discharge waste water, other than storm water runoff, into a storm drain or onto adjacent properties or streets?	No

40. Does the property discharge waste water, other than storm water, into a sanitary sewer system?	No
41. Is there visible evidence that hazardous substances, petroleum products, unidentified waste materials, tires, batteries, or any other waste materials have been dumped, buried, or burned on the property?	No

ENVIRONMENTAL FIELD RECONNAISSANCE QUESTIONNAIRE (PART B) BY PROPERTY OWNER

(Questionnaire not returned)

Completed By: ______________________ Title: ______________

Property Address: ______________________ Date: ______________

USES OF THE PROPERTY	
1. Name of present owner of the property:	
2. Name of present occupants of the property (include business names and addresses or unit numbers):	
3. Describe the present use(s) of the property:	
4. Describe the past use(s) of the property:	
5. Describe the present and past use(s) of adjacent properties:	
6. Is the property used for an industrial use?	
7. Is any adjoining property used for an industrial use?	
8. Did you observe evidence or do you have any knowledge that the property or any adjoining property has been used for an industrial use in the past?	
9. Is the property used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard? If so, identify which and give the name of the business(es):	

10. Is the property used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility?	
11. Is any adjoining property used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard? If so, identify which and give the name of the business(es):	
12. Is any adjoining property used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility?	
13. Did you observe evidence or do you have any knowledge that the property has been used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard in the past? If so, identify which and give the name of the business(es):	
14. Did you observe evidence or do you have any knowledge that the property has been used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility in the past?	
15. Did you observe evidence or do you have any knowledge that any adjoining property has been used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard in the past? If so, identify which and give the name of the business(es):	
16. Did you observe evidence or do you have any knowledge that any adjoining property has been used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility in the past?	
17. Is the property used for agricultural purposes, or has it been used for agricultural purposes in the past?	
PROPERTY CONDITIONS	
18. Are there or have there been any damaged or discarded industrial or automotive batteries on the property?	

19. Are there currently any solvents, paints, fuels, pesticides, herbicides, or other chemicals, in individual containers larger than 5 gallons or totaling more than 50 gallons, used on or stored at the property?	
20. Did you observe evidence or do you have any knowledge that there have been any solvents, paints, fuels, pesticides, herbicides, or other chemicals, in individual containers larger than 5 gallons or totaling more than 50 gallons, used on or stored at the property in the past?	
21. Are there currently any industrial drums (typically 55 gallons) or sacks of chemicals located on the property?	
22. Did you observe evidence or do you have any knowledge that there have been any industrial drums (typically 55 gallons) or sacks of chemicals located on the property in the past?	
23. Did you observe evidence or do you have any knowledge that fill dirt has been brought onto the property from a contaminated site?	
24. Did you observe evidence or do you have any knowledge that fill dirt has been brought onto the property from an unknown site?	
25. Are there currently or have there been any waste treatment or waste disposal ponds, pits or lagoons on the property?	
26. Is there currently or has there been any stained soil, or soil emitting unusual odors, on the property?	
27. Are there, or have there been in the past, any evidence of leaks, spills or staining by substances other than water or foul odors associated with any flooring, drains, walls, ceilings or exposed grounds on the property?	
28. Are there currently or have there been any registered or unregistered storage tanks (underground or aboveground) at the property?	

29. Are there currently or have there been any vent pipes, fill pipes, fill ports, or surface covers indicating possible fill ports on the property or adjacent to any building located on the property?	
30. Are there currently or have there been any oil wells, drilling sumps, mud pits, or oil pipelines on or adjacent to the property?	
31. Are there currently or have there been any pipelines on, beneath, or adjacent to the property, other than water, sewer, and natural gas utilities serving the property?	
32. Is the property known to be located in a methane hazard area due to oil fields, natural seepage, or landfill gas?	
33. Does the property or any facility at the property produce wastewater other than domestic sewage and storm water runoff?	
34. Are there any wastewater treatment systems (clarifiers, oil/water separators, grease traps, filtration systems, etc.) at the property?	
35. How is wastewater from the property disposed of? Sanitary sewer. Septic system. Surface water. Pond, pit, sump, or well. Other (describe).	
36. Does the property or any facility at the property produce solid waste other than domestic trash and greenwaste?	
37. How is solid waste from the property disposed of? Municipal or private trash service. Recycling. Onsite dumping or burial. Other (describe).	
38. How is solid waste stored at the property?	
39. Does the property or any facility at the property generate hazardous or special waste in the course of normal operation? Examples include spent solvents, photo processing waste, waste oil, used filters, etc. Provide copies of generator notification or waste manifests.	

40. Has the property or any facility at the property generated hazardous or special waste due to occasional or one-time events such as asbestos abatement, soil or groundwater cleanup, or accidental events such as spills? Provide copies of waste manifests.	
41. If hazardous or special wastes are generated at the property, how are they stored?	
42. Have pesticides or herbicides been stored, mixed, or disposed of on the property?	
43. Are there any transformers, capacitors, or hydraulic equipment on the property that are known or suspected of containing PCBs?	
44. Are there any building materials on the property known or suspected to contain asbestos? Please describe:	
45. Have any asbestos surveys been performed at the property? Please provide copies of survey reports.	
46. Have any asbestos removal or other abatement projects taken place at the property? Please describe and provide documentation.	
47. Is there any known or suspected lead-based paint in buildings located at the property? Please provide copies of survey reports.	
48. Has radon testing ever been conducted at the property? Please provide test reports.	
ENVIRONMENTAL COMPLIANCE	
49. Has the property ever been the subject of an environmental site assessment or environmental audit, with respect to soil, groundwater, surface water, air, or site facilities and processes? Has any environmental site assessment of the property indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further	

assessment of the property? Please provide a copy of such reports and describe the manner in which any recognized environmental conditions have been addressed.	
50. Does the property or any occupant of or facility on the property have any licenses, permits, registrations, or notifications for tanks, pipelines, industrial waste, wastewater treatment, wastewater discharge, stormwater discharge, waste disposal, waste storage or treatment, air emissions, chemical use, or chemical storage? Please provide copies of such documents.	
51. Have you been informed of the current or past existence of hazardous substances or petroleum products on the property or in any facility located on the property?	
52. Do you have knowledge of any spills, leaks, or other releases or threatened releases of any hazardous substances or petroleum products from the property to soil, groundwater, or surface water?	
53. Do you have knowledge of any release or threatened release of any hazardous substances or petroleum products from another location to soil, groundwater, or surface water at the property?	
54. Have you been informed of the current or past existence of environmental violations on the property or in any facility located on the property?	
55. Do you have any knowledge of environmental liens or governmental notifications relating to violations of environmental laws with respect to the property or any facility located on the property?	
56. Do you have knowledge of any past, threatened, or pending lawsuits, enforcement actions, or administrative proceedings concerning a release or threatened release of any hazardous substances or petroleum products involving the property by any owner or occupant of the property?	

57. If the property is served by a private well or a non-public water system, do you have any knowledge that contaminants exceeding applicable guidelines have been identified in the well or water system, or has the well or system been designated as contaminated by any governmental agency?	
58. Does the property discharge waste water, other than storm water runoff, into a storm drain or onto adjacent properties or streets?	
59. Does the property discharge waste water, other than storm water, into a sanitary sewer system?	
60. Do you have any knowledge that hazardous substances, petroleum products, unidentified waste materials, tires, batteries, or any other waste materials have been dumped, buried, or burned on the property?	

APPENDIX II

LACDPW File Records

APPENDIX I

PRELIMINARY ENVIRONMENTAL FIELD RECONNAISSANCE QUESTIONNAIRE BY FIELD TECHNICIAN (PART A)

ENVIRONMENTAL FIELD RECONNAISSANCE QUESTIONNAIRE FOR PROPERTY OWNER (PART B)

PRELIMINARY ENVIRONMENTAL FIELD RECONNAISSANCE QUESTIONNAIRE (PART A) BY FIELD TECHNICIAN

Completed By: Willow Brohmer Title: J1841

Property Address: 13483 Fiji Way, Marina Del Rey, CA Date: 7/23/07

USES OF THE PROPERTY	
1. Name of present occupants of the property (include business names and addresses or unit numbers):	-Los Angeles County Department of Beaches and Harbors (LACDBH) -Marina Del Rey Sheriff's Station
2. Describe the present use(s) of the property:	-LACDBH offices -Marina Del Rey Sheriff Station Maintenance Facility
3. Describe the present use(s) of the adjacent properties:	N-Marina and Boat Docking S-Ballona Creek and Wetlands W-Marine businesses E-Driveway to public boat docking, boat storage and used oil recycling facility.
4. Is the property used for an industrial use?	Yes
5. Is any adjoining property used for an industrial use?	Yes
6. Is the property used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard? If so, identify which and give the name of the business (es):	Yes -Auto/Boat Repair
7. Is the property used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility?	No
8. Is any adjoining property used as a gasoline station, auto repair facility, commercial printing facility, dry cleaners, photo developing laboratory, or junkyard? If so, identify which and give the name of the business(es):	Yes W-Boat Repair

9. Is any adjoining property used as a landfill or a waste treatment, storage, processing, recycling, or disposal facility?	Yes -Public oil recycling waste
10. Is the property used for agricultural purposes?	No
PROPERTY CONDITIONS	
11. Are there or have there been any damaged or discarded industrial or automotive batteries on the property?	Unknown
12. Are there currently any solvents, paints, fuels, pesticides, herbicides, or other chemicals, in individual containers larger than 5 gallons or totaling more than 50 gallons, used on or stored at the property?	Yes -Parts Cleaning Solvent, paint containers, lubricants, cleaners and similar maintenance products.
13. Are there currently any industrial drums (typically 55 gallons) or sacks of chemicals located on the property?	Yes -Waste Oil, Motor Oil and Parts Cleaning Solvent.
14. Is there any visible evidence fill dirt has been brought onto the property from a contaminated site?	No
15. Is there any visible evidence fill dirt has been brought onto the property from an unknown site?	No
16. Are there any waste treatment or waste disposal ponds, pits or lagoons on the property?	No
17. Is there any stained soil, or soil emitting unusual odors, on the property?	No
18. Are there any flooring, drains, or walls in the facility that are stained by substances other than water or have emitted unusual odors?	Yes
19. Is there any visible evidence of storage tanks (underground or aboveground) at the property?	Yes
20. Are there currently or have there been any vent pipes, fill pipes, fill ports, or surface covers indicating possible fill ports on the property or	Yes -Environmental records indicate two former USTs.

adjacent to any building located on the property?	
21. Are there any oil wells, drilling sumps, mud pits, or oil pipelines on or adjacent to the property?	No, per DOGGR records.
22. Are there any pipelines on, beneath, or adjacent to the property, other than water, sewer, and natural gas utilities serving the property?	No
23. Is the property known to be located in a methane hazard area due to oil fields, natural seepage, or landfill gas?	No
24. Does the property or any facility at the property produce wastewater other than domestic sewage and storm water runoff?	Yes -Oily waste water.
25. Are there any wastewater treatment systems (clarifiers, oil/water separators, grease traps, filtration systems, etc.) at the property?	No
26. How is wastewater from the property disposed of? Sanitary sewer. Septic system. Surface water. Pond, pit, sump, or well. Other (describe).	Sanitary Sewer
27. Does the property or any facility at the property produce solid waste other than domestic trash and green waste?	Yes -Auto/Boat Parts
28. How is solid waste from the property disposed of? Municipal or private trash service. Recycling. Onsite dumping or burial. Other (describe).	Private/Municipal Trash
29. How is solid waste stored at the property?	Dumpster & Trash Bins
30. Does the property or any facility at the property generate hazardous or special waste in the course of normal operation? Examples include spent solvents, photo processing waste, waste oil, used filters, etc. Provide copies of generator notification or waste manifests.	Yes -Spent Solvent, Waste Oil and Oil Filters

HARRY W. STONE, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100

ADDRESS ALL CORRESPONDENCE TO
P O BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

November 2, 2000

IN REPLY PLEASE REFER TO FILE. EP-1
002575-0021278

Mr. Randy Klauk
Los Angeles County
Sheriff's Department
4700 Ramona Bl.
Monterey Park, CA 91754-2169

Dear Mr. Klauk:

**HAZARDOUS MATERIAL UNDERGROUND STORAGE
CLOSURE/SITE ASSESSMENT REPORT
CLOSURE PERMIT NUMBER: 242555
FACILITY LOCATION: 13483 FIJI WAY, MARINA DEL REY**

This office has reviewed the closure report dated February 18, 1999, for the subject facility.

In order to better evaluate the report, the information indicated on the enclosed Additional Closure Requirements sheet must be submitted to this office by December 30, 2000.

If you have any questions regarding this matter, please contact Mr. John Awujo of this office at (626) 458-3507, Monday through Thursday, 7:00 a.m. to 5:30 p.m.

Very truly yours,

HARRY W. STONE
Director of Public Works

By John Awujo
Environmental Programs Division

JA:nh
ADIS\K\KLAUK
C301388

Enc.

cc: Tait Environmental (Richard Coffman)

bc: Construction Division (Jolene Guerrero)

ADDITIONAL CLOSURE REQUIREMENTS

The additional information or requirements checked below must be submitted to the Los Angeles County Department of Public Works, Environmental Programs Division, P.O. Box 1460, Alhambra, CA 91802-1460, in order to complete evaluation of Closure Permit No. 242555 .

[ ] Plot plan to scale showing locations of tanks, sampling points, buildings, adjacent streets, and north arrow.

[ ] Insufficient number of samples were obtained. Additional samples required in accordance with attached Closure Permit Requirements.

[ ] Describe method of obtaining, handling, and/or transporting samples.

[ ] Indicate time and date samples were obtained.

[ ] Submit logs certified by a CA registered geologist, CA certified engineering geologist, or CA registered civil engineer with sufficient experience in soils for all borings.

[ ] Submit chain-of-custody documentation initiated by person obtaining sample through person at Department of Health Services certified laboratory.

[ ] Disposal destination of tanks and evidence of legal disposal.

[ ] Analysis results by a State certified laboratory shall be submitted on laboratory letterhead showing analysis date, methods of extraction and methods of analysis.

[X] Documentation as to depth of groundwater at facility.

[ ] Manifests to document hazardous waste disposal of removed soil/tank rinsate with the signature of the disposal facility owner/operator.

[ ] Evidence of legal disposal of soils designated as nonhazardous.

[ ] Signature on the report is required of CA registered geologist, CA certified engineering geologist, or CA registered civil engineer with sufficient experience in soils. The report must clearly indicate that all soil sampling was done under the supervision of the registered professional.

[X] Define the vertical and lateral extent of contamination.

[X] Propose a remedial action plan to mitigate contamination.

[ ] Proposed future uses or improvements for the area related to the contamination.

[ ] Other: ______________________________

CL207 Rev. 6/97

COUNTY OF LOS ANGELES / DEPARTMENT OF SMALL CRAFT HARBORS
Administration Building, Fiji Way, Marina del Rey, California 90291 / 823-4571 / 870-6782

RECEIVED
JAN 13 1977
PROJECT PLANNING AND POLLUTION CONTROL DIVISION

VICTOR ADORIAN
Director

December 28, 1976

REPLY ACTN INFO
REFD TO
DEC 29 1976
2:30 P.M
REPT TO PREP REPLY
HTB RKW
JTR RJR IHA

Mr. Harvey T. Brandt
County Engineer
Department of County Engineer
108 W. Second Street
Los Angeles, California 90012

Attention: Mr. Ruben Garcia
Sanitation Division

Dear Sir:

BOAT REPAIR AND MAINTENANCE CENTER - MARINA DEL REY

Enclosed for your review is a schematic plan of the proposed boat repair facilities to be constructed at Marina del Rey.

There are about 20 Lifeguard and Harbor Patrol boats which will be maintained at this facility and require hull cleaning twice a year. As now proposed, the hulls will probably be cleaned by steam in the uncovered area so designated on the plan, along with engine parts. The material being cleaned will be sea growth, heavy metal bottom paint, and grease.

Please let us know at your earliest convenience, what type of drain interceptor would be appropriate.

Very truly yours,

Victor Adorian
Director

Leonard W. Shortland
Associate Harbor Development Coordinator

VA:LWS:bb

Enclosure

January 21, 1977

Mr. Victor Adorian, Director
Department of Small Craft Harbors
County of Los Angeles

Attention Mr. Leonard W. Shortland

Dear Sir:

BOAT REPAIR AND MAINTENANCE CENTER
MARINA DEL REY

The schematic plans of the subject center and the proposed operations described in your letter of December 28, 1976, have been reviewed by this office with respect to the disposal of wastewater from hull cleaning.

There are currently two boat maintenance yards in Marina del Rey generating hull cleaning wastes. Both yards have obtained permits from this office and the State Water Quality Control Board to discharge treated wastewater not exceeding the attached effluent limitations for Basin H. These yards have not been able to meet the low maximum permissible concentrations consistently and, therefore, are attempting by various means to eliminate all their wastewater discharge to the basin.

Because it is practically impossible to meet the discharge limitations for ocean disposal by treatment through gravity separators only, this office recommends that disposal of treated wastewater from the prcposed center be made to the sanitary sewer.

Although there are limitations on heavy metals and oil and grease contaminants in wastewater effluents discharged to the sanitary sewer, these are less stringent and readily achievable through treatment by gravity separation alone.

The open steam cleaning rack should be designed to exclude storm runoff from adjacent areas and the drain connected to discharge to the sewer through a sand and grease interceptor. The pipe connecting the drain to the interceptor should be provided with a gate valve to permit closing during inclement weather.

Enclosed for your use is an application for Industrial Waste Permit and a detail of the County of Los Angeles Standard Sand and Grease Interceptor. It is recommended that the 1,260-gallon size be used for this project.

If you have any further questions, please contact Mr. Ruben Garcia at 974-7251.

Very truly yours,

Stephen J. Koonce
ACTING COUNTY ENGINEER

Original Signed

C. G. Brisley, Jr.
Division Engineer

CGB:RG:dj 8

Enclosures

dc: CGB, SI, GM, RG, FILE

I-NUMBER [✓] DATA CHANGE [ ]

When requesting a new I-No., fill in B and C only.

When requesting a Data Change, fill in A completely and fill in only items to be changed in B.

A: (Fill in data as it appears on I.B.M. list now.)

I-No. 2661

Name ______

Address ______ Zip Code ______

B: (Fill in new data as you want it to appear on the next I.B.M. list.)

Name MAINTENANCE CTR, DEPT OF SMALL CRAFT HARBORS

Address 13483 FIJI WAY MARINA DEL REY Zip Code ______

Region-City ~~3~~ 25 Status ~~[illegible]~~ S Permit No. PNR

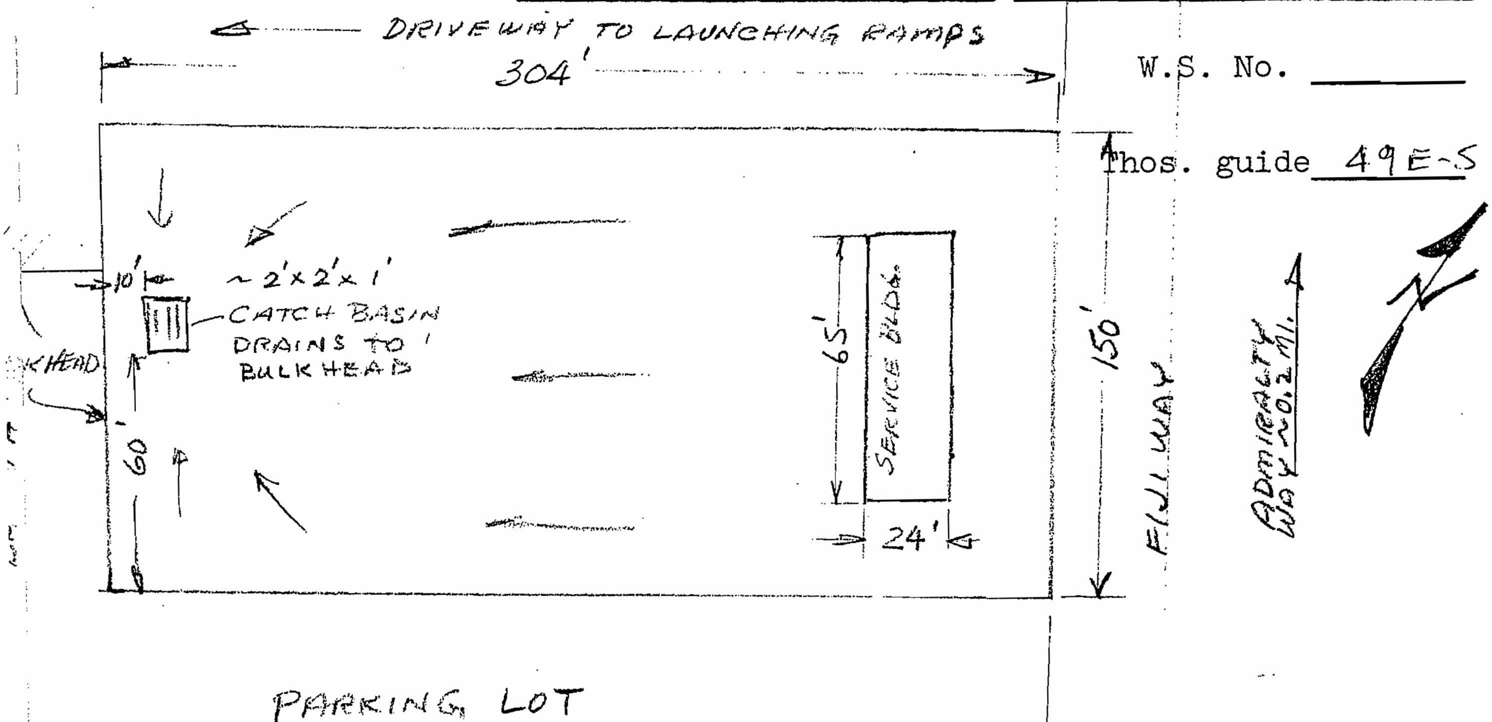
Classif. 311 SMD — Disp. Code 3

C: Show plot or sketch showing dimensions of the property and ties to cross streets.

Located between streets ADMIRALTY WAY & PAC. OCEAN

W.S. No. ______

Thos. guide 49E-5



By [signature] Date 12-14-77

PROCESSING

File folder & indexing by GWS ______

Plotted by ______

City or unincorporated

I-2661

Marina Del Rey

County Boat Repair and Maintenance Center

The proposal to construct a boat repair and maintenance center has been abandoned because of a lack of funds per Mr. [illegible] of Small Craft and Harbors

10-19-78

[illegible]

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES — BUILDING AND SAFETY

I certify that ... certificate of Workers' Compensation insurance or a certified copy thereof (Sec. 3800 Lab. C.)

Policy ... Company ...

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the county building inspection department

Date ______ Applicant ______

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date ______ Applicant ______

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number ______ Lic. Class ______

Contractor ______ Date ______

☐ I am exempt from the licensing requirements as I am a licensed architect or a registered professional engineer acting in my professional capacity (Section 7051, Business and Professions Code).

Lic. or Reg. No ______ Date ______

OWNER BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name ______

Lender's Address ______

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

Signature of Applicant or Agent ______ Date ______

FOR APPLICANT TO FILL IN

BUILDING ADDRESS	13483 Fiji Way
CITY	Marina del Rey
SIZE OF LOT	33,400 Sq. ft. — NO. OF BLDGS. NOW ON LOT: 1
TRACT	BLOCK — LOT NO.
OWNER	L.A. County — TEL. NO. 738-2201
ADDRESS	550 So. Vermont Ave
CITY	Los Angeles — ZIP 90020
ARCHITECT OR ENGINEER	— TEL. NO. 738-2201
ADDRESS	[illegible]
CONTRACTOR	— TEL. NO.
ADDRESS	— LIC. NO.
CITY	— LIC. CLASS
SQ. FT. SIZE 1440	NO. OF STORIES 1 — NO. OF FAMILIES N/A
DESCRIPTION OF WORK	[illegible] Maintenance Bldg
USE OF EXISTING BLDG	Maintenance Bldg
APPLICANT (PRINT)	R.L. Rinker — TEL. NO. 738-2231
ADDRESS	550 S. Vermont Ave

CHECK ONE: NEW ☒ ADD ☐ ALTER ☐ REPAIR ☐ DEMOL ☐

PRESENT BUILDING ADDRESS	
LOCALITY	
MOVING CONTRACTOR	TEL. NO.
ADDRESS	

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP. LINE	EXIST. WIDTH
FRONT				
SIDE P.L.				

I.C. Fee $ N/F	Permit Fee
#5750	Issuance Fee
Investigation Fee	Total Fee

8-8-80

SEE REVERSE FOR EXPLANATORY LANGUAGE

BUILDING ADDRESS	13483 Fiji Way
LOCALITY	Marina Del Rey
NEAREST CROSS ST.	
ASSESSOR MAP BOOK	PAGE — PARCEL
USE ZONE M-1	MAP NO. 099H149 — SPECIAL CONDITIONS
DISTRICT 99-7	GROUP H-3 — TYPE CONST. IV — FIRE ZONE 3 — PROCESSED BY bc
STATISTICAL CLASSIFICATION CLASS NO. 10 DWELL UNITS	APT. — CONDO

SEWER MAP BK. PG.

VALUATION $ 200,000

$

FINAL DATE

FINAL By

VALIDATION

DEPT. OF COUNTY ENGINEER—FACILITIES
COUNTY OF LOS ANGELES

CLEARANCE
FOR INDUSTRIAL WASTES

~~Facilities for the collection and disposal of liquid industrial wastes including any floor drains, floor sinks and interceptors or other pretreatment facilities shall be installed as shown on this plan with the traps, vents or other appurtenances required by the Plumbing Code. No additions or alterations of these facilities shall be made without the written permission of the County Engineer. This clearance does not permit or approve the violations of the provisions of any ordinance of statute.~~

By M. Carson ______ Date 8/20/80

Sanitation Division

approved for domestic waste only per conversation w/ Bob Rinker on 8/20/79. Per Rinker project proposed per I-2661 was never constructed and the new project is not intended to have discharge sewer...

COUNTY OF LOS ANGELES • DEPARTMENT OF PUBLIC WORKS
ENVIRONMENTAL PROGRAMS DIVISION
Storm Water Facility Inspection Report Form

Site/File 2575-I02661
Date 7-29-98
Inspection Work Order (I) 216320

☒ First Inspection ☐ Routine Inspection ☐ Response to Complaint ☐ Facility has closed or new Facility Information (see attached)

Facility Name: DOCK 52
Site Address: 13483 FIJI WAY MARINA DEL REY
Area (R/C) Code: 25

Contact Name: DANNY CRAWFORD
Phone: (310) 578-9840
Business Type/Activity: MAINT YARD
SIC: 4493

Is the facility covered under any other permits? (Check all that apply)
☒ Air Quality ☐ Hazmat business plan ☐ None ☐ Industrial Waste
☐ Fire Dept. (Storage) ☐ Hazardous waste generator ☒ Underground Storage Tanks ☐ Aboveground storage tanks
☐ Other:

Is the facility covered under a storm water permit? ☒ Does not need coverage ☐ No, but may need to (Refer to Regional Board)
☐ Individual NPDES ☐ General (filed NOI) Does the facility have a SWPPP? ☐ Yes ☒ No

ACTIVITIES ASSESSMENT CHECKLIST

ACTIVITIES - Check each activity present at the site and evaluate its **potential (PPD)** for pollutant discharge: 1 = low potential, 2 = medium potential, 3 = high potential
→ Circled BMPs require your immediate attention - see back of this report.

Activity	Yes	No	PPD	Effectiveness Rating*
A. MINIMUM BMPs - APPLICABLE TO ALL FACILITIES BMPs employed: 1, 2, 3, 4, 6, 7, 8, 9, 10	✓		2	4
B. VEHICLE AND EQUIPMENT FUELING BMPs employed: 1, 3, 7, 8, 9	✓		2	3
C. VEHICLE AND EQUIPMENT WASHING/STEAM CLEANING BMPs employed: 1	✓		2	3
D. VEHICLE AND EQUIPMENT MAINTENANCE AND REPAIR BMPs employed: 1, 2, 4, 6, 9	✓		2	3
E. OUTDOOR LOADING/UNLOADING OF MATERIALS BMPs employed:		✓		
F. OUTDOOR PROCESS EQUIPMENT OPERATIONS AND MAINTENANCE BMPs employed: 6	✓		2	3
G. OUTDOOR STORAGE OF RAW MATERIALS/PRODUCTS/CONTAINERS BMPs employed: 1, 2, 4, 5, 7	✓		2	3
H. WASTE HANDLING AND DISPOSAL BMPs employed: 1, 3, 6, 7, 8, 9	✓		2	3
I. CONTAMINATED OR ERODIBLE SURFACE AREAS BMPs employed:		✓		
J. BUILDING AND GROUNDS MAINTENANCE BMPs employed: 4	✓		2	3
K. ROOFTOP EQUIPMENT BMPs employed:		✓		
L. OUTDOOR DRAINAGE FROM INDOOR AREAS BMPs employed:		✓		
M. OTHER (describe):		✓		

*① No BMPs used and stormwater pollution likely ② Some BMPs used but not effective ③ Some BMPs used and moderately effective ④ Source control BMPs used and very effective/structural BMPs needed ⑤ All necessary BMPs used and very effective

This report is **not a citation.** It is furnished to the facility representative to assist in designing and evaluating Best Management Practices to prevent the runoff of pollutants to the storm drainage system. A reinspection of your facility (☒ is required)(☐ is not required) to review correction of deficiencies noted above. Please call (310) 534-4862 by 8-31-98 between 8:00 a.m. to 9:30 a.m. to arrange for a reinspection.

Facility Representative Signature: D Crawford Date: 7-29-98

Print name of Facility Representative: DANNY CRAWFORD Inspector: [signature]

EPD/insbmp - 2/97

A. COUNTY DPW HAZARDOUS MATERIALS SYSTEM REPORT: HMR050.001

DATE COMPILED: 05/25/93 IW INSPECTION JOB ORDER INSP#: I000216320

JN DATE: 04/09/98 10:18:39 SURVEY REQUEST ASSC#:

PAGE: 1

FILE #: 002575-I02661 NAME: LA CO SMALL CRAFT MAINT Y
ADD: 13483 FIJI WAY
MARINA DEL REY, CA 90292 AREA: 25 SMD: 23
XSTREET: ADMIRALTY WAY THOMAS GUIDE: 0049-E5
CONTACT: TEL:

PROC: SURVEY SAMPLE REQUIRED? N SAMPLE #: ___________

INSP INFO: DETERMINE IF IWDP REQUIRED ALSO PERFORM STORMWATER SURVEY W/BUBBLE FORM.

ASSGN TO: LENNOX FIELD OFFICE SECT: FIELD INSPECTION UNIT

==

RESULTS: THE CURRENT MAINTENANCE OPERATION DOES NOT REQUIRE AN IWDP. THERE IS NO VEHICLE WASHING DONE IN THE MAINTENANCE AREA. WASTE OIL FROM VEHICLE MAINT. IS STORED IN 55 GAL. DRUMS LOCATED INSIDE A STORAGE SHED. THE DRUM STORAGE AREA IS NOT BERMED FOR CONTAINMENT.

REMARKS: THE MAINTENANCE COMPLEX IS TO BE TORN DOWN AND THE OPERATION MOVED TO A NEW LOCATION BY THE END OF THE YEAR ACCORDING TO DEPUTY FRED PAUCA OF SHERIFF-HARBOR OPERATIONS.

NSPECTOR: [signature] INSPECTION DATE: 7-29-98

DISP: [initials]

RECEIVED
JAN 13 1977
PROJECT PLANNING AND POLLUTION CONTROL DIVISION

COUNTY OF LOS ANGELES / DEPARTMENT OF SMALL CRAFT HARBORS
Administration Building, Fiji Way, Marina del Rey, California 90291 / 823-4571 / 870-6782

VICTOR ADORIAN
Director

December 28, 1976

REPLY......ACTN......INFO.........
REFD TO
DEC 29 1976
2:30 P.M
REPT TO...... PREP REPLY......
HTB.................. RKW..................
JTR.......... RJR.......... IHA

Mr. Harvey T. Brandt
County Engineer
Department of County Engineer
108 W. Second Street
Los Angeles, California 90012

Attention: Mr. Ruben Garcia
Sanitation Division

Dear Sir:

BOAT REPAIR AND MAINTENANCE CENTER - MARINA DEL REY

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Please let us know at your earliest convenience, what type of drain interceptor would be appropriate.

Very truly yours,

Victor Adorian
Director

Leonard W. Shortland
Associate Harbor Development
Coordinator

VA:LWS:bb

Enclosure

January 21, 1977

Mr. Victor Adorian, Director
Department of Small Craft Harbors
County of Los Angeles

Attention Mr. Leonard W. Shortland

Dear Sir:

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MARINA DEL REY

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Very truly yours,

Stephen J. Koonce
ACTING COUNTY ENGINEER

Original Signed

C. G. Brisley, Jr.
Division Engineer

CGB:RG:dj 8

Enclosures

dc: CGB, SI, GM, RG, FILE

REQUEST FOR: I-NUMBER [X] DATA CHANGE [ ]

hen requesting a new I-No., fill in B and C only.

When requesting a Data Change, fill in A completely and fill in only items to be changed in B.

A: (Fill in data as it appears on I.B.M. list now.)

I-No. 2661

Name ______

Address ______ Zip Code ______

: (Fill in new data as you want it to appear on the next I.B.M. list.)

Name MAINTENANCE CTR, DEPT OF SMALL CRAFT HARBORS

Address 13483 FIJI WAY MARINA DEL REY Zip Code ______

Region-City ~~38~~ 25 Status ~~___~~ S Permit No. PNR

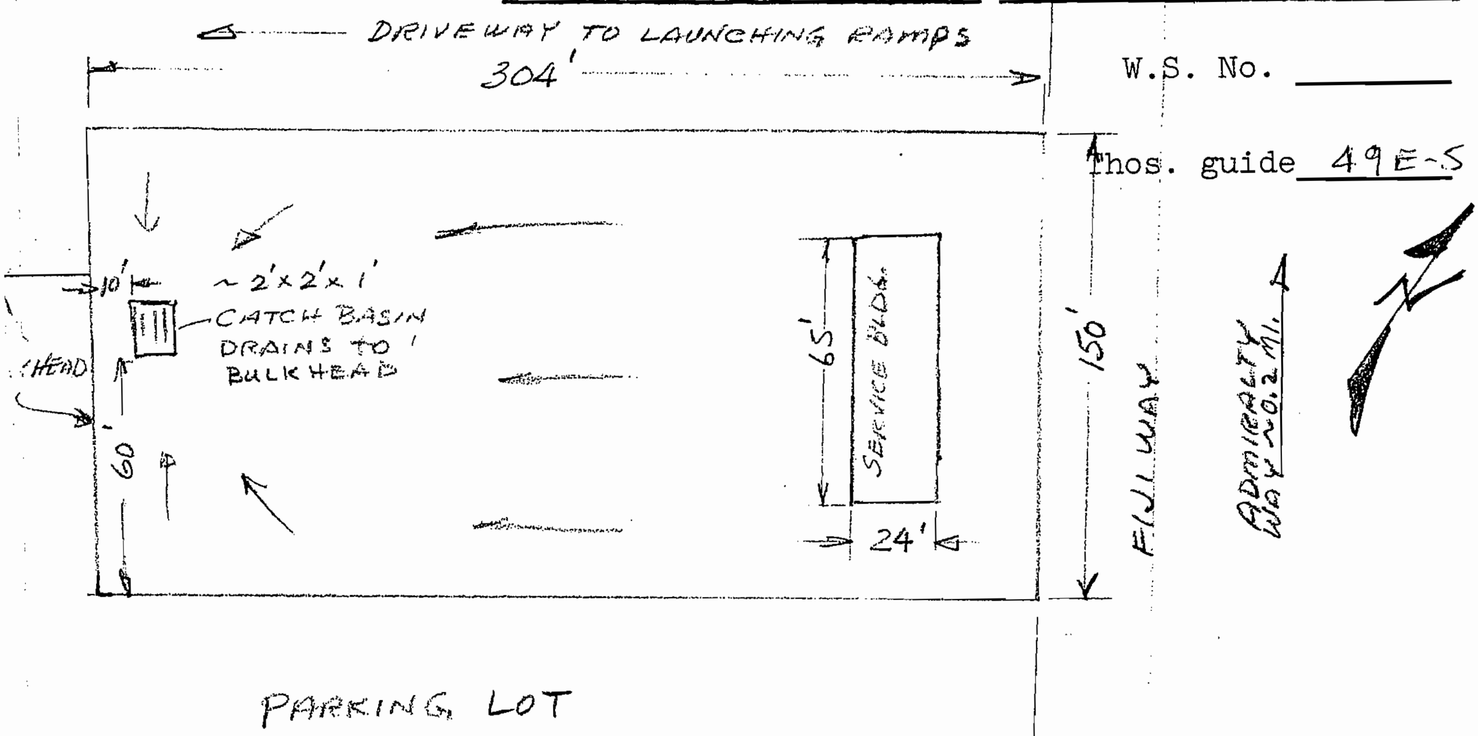
Classif. 311 SMD — Disp. Code 3

': Show plot or sketch showing dimensions of the property and ties to cross streets.

Located between streets ADMIRALTY WAY & PAC. OCEAN

W.S. No. ______

Thos. guide 49E-5



By [signature] Date 12-14-77

PROCESSING

lle folder & indexing by gus ______

otted by ______

I-7661

Marina Del Rey

County Boat Repair and Maintenance Center

The proposal to construct a boat repair and maintenance center has been abandoned because of a lack of funds per Mr. [illegible] of [illegible] Craft and Harbors

10-19-78

76 A638A CE803A (REV. 1 80)

... insure ... certificate ... Workers' Compensation insurance ... a certified ... thereof (Sec. 3800 Lab. C.)

Policy ... Company ...

- [ ] Certified copy is hereby furnished
- [ ] Certified copy is filed with the county building inspection department

Date ____ Applicant ____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date ____ Applicant ____

NOTICE TO APPLICANT: If after making this Certificate of Exemption you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number ____ Lic. Class ____

Contractor ____ Date ____

- [ ] I am exempt from the licensing requirements as I am a licensed architect or a registered professional engineer acting in my professional capacity (Section 7051, Business and Professions Code).

Lic. or Reg. No ____ Date ____

OWNER BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

- [ ] I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).
- [ ] I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name ____

Lender's Address ____

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

____ Signature of Applicant or Agent

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES — BUILDING AND SAFETY

FOR APPLICANT TO FILL IN

BUILDING ADDRESS	13483 Fiji Way
CITY	Marina Del Rey
SIZE OF LOT	13,416 Sq. ft. — NO. OF BLDGS. NOW ON LOT: 1
TRACT / BLOCK / LOT NO	[illegible]
OWNER	[illegible] — TEL. NO. 738-2771
ADDRESS	[illegible] Vermont Ave
CITY	Los Angeles — ZIP 900[illegible]
ARCHITECT OR ENGINEER	[illegible] — TEL. NO. 732-[illegible]
ADDRESS	Same as Above
CONTRACTOR	[illegible] — TEL. NO.
ADDRESS	[illegible] — LIC. NO.
CITY	— LIC. CLASS
SQ. FT. SIZE	14,[illegible] — NO. OF STORIES: 1 — NO. OF FAMILIES: N/A
DESCRIPTION OF WORK	[illegible]
USE OF EXISTING BLDG	Maintenance Bldg
APPLICANT (PRINT)	[illegible] — TEL. NO. 738-2731
ADDRESS	[illegible]

CHECK ONE: NEW ☒ ADD ☐ ALTER ☐ REPAIR ☐ DEMOL ☐

PRESENT BUILDING ADDRESS	
LOCALITY	
MOVING CONTRACTOR	TEL. NO.
ADDRESS	

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP. LINE	EXIST. WIDTH
FRONT				
SIDE / P.L.				

I.C. Fee $ N/A	Permit Fee
#5750	Issuance Fee
Investigation Fee	Total Fee

8/20/80
M Rawson
Sanitation Division

8-8-80

SEE REVERSE FOR EXPLANATORY LANGUAGE

-26

BUILDING ADDRESS	13483 Fiji Way
LOCALITY	Marina Del Rey
NEAREST CROSS ST.	
ASSESSOR MAP BOOK / PAGE / PARCEL	
USE ZONE	M-1
MAP NO	099H149
SPECIAL CONDITIONS	
DISTRICT	99-7
GROUP	H-3
TYPE CONST.	IV
FIRE ZONE	3
PROCESSED BY	bc
STATISTICAL CLASSIFICATION — CLASS NO	10
DWELL UNITS / APT. / CONDO	
SEWER MAP BK. PG.	
VALUATION	$ 200,000
$	
FINAL DATE	
FINAL By	

VALIDATION

DEPT. OF COUNTY ENGINEER—FACILITIES
COUNTY OF LOS ANGELES

CLEARANCE
FOR INDUSTRIAL WASTES

~~Facilities for the collection and disposal of liquid industrial wastes including any floor drains, floor sinks and interceptors or other pretreatment facilities shall be installed as shown on this plan with the traps, vents or other appurtenances required by the Plumbing Code. No additions or alterations of these facilities shall be made without the written permission of the County Engineer. This clearance does not permit or approve the violations of the provisions of any ordinance or statute.~~

By ____ Date ____
Sanitation Division

approved for domestic waste only per conversation w/ Bob Rinker on 8/20/79. Per Rinker project proposed per I-2661 was never constructed and the new project is not intended to

COUNTY OF LOS ANGELES • DEPARTMENT OF PUBLIC WORKS
ENVIRONMENTAL PROGRAMS DIVISION
Storm Water Facility Inspection Report Form

Site/File 2575-I02661
Date 7-29-98
Inspection Work Order (I) 216320

☒ First Inspection ☐ Routine Inspection ☐ Response to Complaint ☐ Facility has closed or new Facility Information (see attached)

Facility Name: DOCK 52
Site Address: 13483 FIJI WAY MARINA DEL REY
Area (R/C) Code: 25

Contact Name: DANNY CRAWFORD
Phone: (310) 578-9848
Business Type/Activity: MAINT YARD
SIC: 4493

Is the facility covered under any other permits? (Check all that apply)
☐ None ☐ Industrial Waste
☒ Air Quality ☐ Hazmat business plan ☒ Underground Storage Tanks ☐ Aboveground storage tanks
☐ Fire Dept. (Storage) ☐ Hazardous waste generator ☐ Other:

Is the facility covered under a storm water permit? ☒ Does not need coverage ☐ No, but may need to (Refer to Regional Board)
☐ Individual NPDES ☐ General (filed NOI) Does the facility have a SWPPP? ☐ Yes ☒ No

ACTIVITIES ASSESSMENT CHECKLIST

ACTIVITIES - Check each activity present at the site and evaluate its potential (PPD) for pollutant discharge: 1 = low potential, 2 = medium potential, 3 = high potential ➔ Circled BMPs require your immediate attention - see back of this report.	APPLICABLE ACTIVITY Yes	No	PPD	EFFECTIVENESS RATING*
A. MINIMUM BMPs - APPLICABLE TO ALL FACILITIES BMPs employed: 1, 2, 3, 4, 6, 7, 8, 9, 10	[✔]	[ ]	[2]	① ② ③ ● ⑤ (4)
B. VEHICLE AND EQUIPMENT FUELING BMPs employed: 1, 3, 7, 8, 9	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
C. VEHICLE AND EQUIPMENT WASHING/STEAM CLEANING BMPs employed: 1	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
D. VEHICLE AND EQUIPMENT MAINTENANCE AND REPAIR BMPs employed: 1, 2, 4, 6, 9	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
E. OUTDOOR LOADING/UNLOADING OF MATERIALS BMPs employed:	[ ]	[✔]	[ ]	① ② ③ ④ ⑤
F. OUTDOOR PROCESS EQUIPMENT OPERATIONS AND MAINTENANCE BMPs employed: 6	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
G. OUTDOOR STORAGE OF RAW MATERIALS/PRODUCTS/CONTAINERS BMPs employed: 1, 2, 4, 5, 7	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
H. WASTE HANDLING AND DISPOSAL BMPs employed: 1, 3, 6, 7, 8, 9	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
I. CONTAMINATED OR ERODIBLE SURFACE AREAS BMPs employed:	[ ]	[✔]	[ ]	① ② ③ ④ ⑤
J. BUILDING AND GROUNDS MAINTENANCE BMPs employed: 4	[✔]	[ ]	[2]	① ② ● ④ ⑤ (3)
K. ROOFTOP EQUIPMENT BMPs employed:	[ ]	[✔]	[ ]	① ② ③ ④ ⑤
L. OUTDOOR DRAINAGE FROM INDOOR AREAS BMPs employed:	[ ]	[✔]	[ ]	① ② ③ ④ ⑤
M. OTHER (describe):	[ ]	[✔]	[ ]	① ② ③ ④ ⑤

*① No BMPs used and stormwater pollution likely ② Some BMPs used but not effective ③ Some BMPs used and moderately effective
④ Source control BMPs used and very effective/structural BMPs needed ⑤ All necessary BMPs used and very effective

This report is not a citation. It is furnished to the facility representative to assist in designing and evaluating Best Management Practices to prevent the runoff of pollutants to the storm drainage system. A reinspection of your facility (☒ is required)(☐ is not required) to review correction of deficiencies noted above. Please call (310) 534-4862 by 8-31-98 between 8:00 a.m. to 9:30 a.m. to arrange for a reinspection.

Facility Representative Signature: D Crawford Date: 7-29-98

Print name of Facility Representative: DANNY CRAWFORD Inspector: [signature]

EPD/insbmp - 2/97

A. COUNTY DPW | HAZARDOUS MATERIALS SYSTEM | REPORT: HMRU30.001

DATE COMPILED: 05/25/93 | IW INSPECTION JOB ORDER | INSP#: I000216320

IN DATE: 04/09/98 10:18:39 | SURVEY REQUEST | ASSC#:

PAGE: 1

FILE #: 002575-I02661 NAME: LA CO SMALL CRAFT MAINT Y

ADD: 13483 FIJI WAY

MARINA DEL REY, CA 90292 AREA: 25 SMD: 23

XSTREET: ADMIRALTY WAY THOMAS GUIDE: 0049-E5

CONTACT: TEL:

PROC: SURVEY SAMPLE REQUIRED? N SAMPLE #: ____________

INSP INFO: DETERMINE IF IWDP REQUIRED ALSO PERFORM STORMWATER SURVEY W/BUBBLE FORM.

ASSGN TO: LENNOX FIELD OFFICE SECT: FIELD INSPECTION UNIT

==

RESULTS: THE CURRENT MAINTENANCE OPERATION DOES NOT REQUIRE AN IWDP. THERE IS NO VEHICLE WASHING DONE IN THE MAINTENANCE AREA. WASTE OIL FROM VEHICLE MAINT. IS STORED IN 55 GAL. DRUMS LOCATED INSIDE A STORAGE SHED. THE DRUM STORAGE AREA IS NOT BERMED FOR CONTAINMENT.

REMARKS: THE MAINTENANCE COMPLEX IS TO BE TORN DOWN AND THE OPERATION MOVED TO A NEW LOCATION BY THE END OF THE YEAR ACCORDING TO DEPUTY FRED PAUCA OF SHERIFF-HARBOR OPERATIONS.

INSPECTOR: ______________ INSPECTION DATE: 7-29-98

DISP: ______________

FEBRUARY 18, 1999

UST REMOVAL REPORT
LOS ANGELES COUNTY SHERIFF'S STATION
13483 FIJI WAY, DOCK 52
MARINA DEL REY, CALIFORNIA

PREPARED FOR:
JOLENE FARRENS
DEPARTMENT OF PUBLIC WORKS
900 SOUTH FREMONT AVENUE
ALHAMBRA, CA 91802-1460

PREPARED BY:

Scott E. Ek
Staff Geologist

Richard L. Coffman, Ph.D., R.G.
Senior Project Geologist

REGISTERED GEOLOGIST
RICHARD L. COFFMAN
No. 6614
Exp. 07/00
STATE OF CALIFORNIA

Edward A. Batlle
Director

TAIT ENVIRONMENTAL MANAGEMENT, INC.
701 NORTH PARKCENTER DRIVE
SANTA ANA, CALIFORNIA 92705

PROJECT NO. EM-2188

TABLE OF CONTENTS

TAIT Environmental Management, Inc.
Environmental · Engineering · Compliance

UST REMOVAL REPORT
LOS ANGELES COUNTY SHERIFF'S STATION
13483 FIJI WAY, DOCK 52
MARINA DEL REY, CALIFORNIA

1.0 INTRODUCTION

This report summarizes the results of the removal of two (2) 1,000-gallon gasoline underground storage tanks (USTs), at the Los Angeles County Sheriff's Station (SITE), located at 13483 Fiji Way, Dock 52 in the city of Marina Del Rey, California (Figure 1). The work was conducted for the Los Angeles County Sheriff's Department (LACSD), by Tait Environmental Systems (TES) in association with Tait Environmental Management, Inc. (TEM), and in accordance with the Los Angeles Department of Public Works (LADPW) and the Los Angeles County Fire Department (LACFD) UST removal guidelines.

2.0 SITE DESCRIPTION

The SITE is an active Los Angeles County Sheriff's Maintenance Station. Fuel storage and dispensing equipment consists of two (2) 1,000-gallon spherical fiberglass gasoline UST's, and one (1) product dispenser and the associated product piping (Figure 2).

3.0 OBJECTIVE

The objective of the scope of work was to:

- Obtain closure for the removal of two (2) 1,000-gallon spherical, fiberglass gasoline USTs.

4.0 SCOPE OF WORK

The scope of work that TEM developed to meet the objective included the following tasks:

- Prepare a health and safety plan;
- Perform air monitoring per South Coast Air Quality Management District (SCAQMD);
- Collect soil samples as directed by LADPW; and
- Prepare this report summarizing field activities.

701 North Parkcenter Drive · Santa Ana, California 92705 · (714) 560-8200 · (714) 560-8235 fax
Regional Offices: San Diego · Concord · Sacramento · Phoenix · Tucson

5.0 REGIONAL GEOLOGY AND HYDROGEOLOGIC SETTING

The SITE is located approximately 0.3 mile north of the Ballona Creek, in the Ballona Gap, located in the southern portion of the Santa Monica Basin. The elevation of the SITE is approximately fifteen feet above mean sea level (MSL). The SITE is underlain by recent alluvium consisting of clay and sandy clay, which inturn is underlain by the Pleistocene age San Pedro formation, and Pliocene age sediments of the Pico Formation (DWR 1961).

Groundwater in the Santa Monica Basin flows mainly south towards the direction of the Ballona Gap. Replenishment of groundwater in the Santa Monica Basin is accomplished mainly by percolation of precipitation and surface runoff in the northern portion of the basin (DWR 1961).

6.0 FIELD ACTIVITIES

The field activities were conducted by a TEM geologist, trained and supervised by a California Registered Geologist.

The locations of the USTs, in relation to the Sheriff's Station maintenance building and property boundary, are presented in Figure 2. The scope of work consisted of the removal of two (2) 1,000-gallon spherical, fiberglass gasoline USTs.

Prior to the removal activities, Underground Service Alert (USA) was notified for the demarcation of all underground utilities. The required permits were obtained and the LACFD and the LADPW were notified. Copies of the permits are presented in Appendix A.

Throughout the excavation process, monitoring for volatile organic compounds (VOCs), in accordance with the SCAQMD Rule 1166, was performed by TEM personnel with a Mini Rae Plus photoionization detector (PID). Copies of all Rule 1166 field monitoring records are presented in Appendix B.

6.1 Soil Excavation and UST Removal

On December 23, 1998, following the break up and removal of the asphalt surface, a backhoe was used to remove soil and expose the two (2) USTs. The excavated soil exhibited VOC concentrations as high as 997.9 parts per million (ppm). The excavated soil was stockpiled on-SITE, and covered with plastic until waste characterization could be completed.

On December 28, 1998, the interiors of the two (2) USTs were degassed by drawing potentially explosive vapors from the interior of the USTs through a portable carbon filter system. Degassing continued until the lower explosive limit (LEL), as registered on an explosimeter, was detected to be less than 10 percent.

When LELs were measured at zero, the USTs were certified by a Marine Chemist and permission to remove the two (2) USTs was granted by the LACFD representative.

The two (2) USTs appeared to be in good condition with no evidence of leakage. The USTs were loaded onto flat-bed trucks and removed from the SITE. Transportation and disposal was provided by Able Environmental Services of Huntington Beach, California. Copies of the UST disposal documentation are presented in Appendix C.

6.2 Soil Sampling

On December 28, 1998, soil samples were collected from beneath the two (2) removed USTs, and one removed (1) dispenser and the associated product piping. The LACDPW Inspector was not present to direct the collection of soil samples. TEM was instructed to begin collecting soil samples per permit requirements, if the Inspector had not arrived within fifteen minutes of the scheduled appointment.

Soil samples from below the UST's were collected from the bucket of a backhoe. Soil samples from beneath the dispenser and product piping were collected using a hand auger and slide hammer assembly. All soil samples were collected in 2-inch by 6-inch brass sleeves sealed with teflon-lined polyvinyl chloride (PVC) end-caps, labeled, and delivered under proper chain-of-custody protocol to Calscience Environmental Laboratories Inc. of Garden Grove, a California State-Certified laboratory. Soil sample locations are shown in Figure 2.

A total of four (4) soil samples were collected as follows:

- Two (2) soil samples (1A and 2A) were collected approximately two (2) feet below each tank invert, a total of twelve (12) feet below ground surface (bgs).
- One (1) soil sample (D1) was collected approximately three (3) feet below the removed dispenser.
- One (1) soil sample (P1) was collected approximately three (3) feet beneath product piping lines.

6.2.1 Stockpile Samples

On December 28, two (2) soil stockpile samples were collected from one (1) onsite stockpile generated during the UST excavation. Soil samples S1 and S2 were collected in 2-inch by 6-inch brass sleeves sealed with teflon-lined polyvinyl chlorine (PVC) end caps by TEM personnel using a shovel and digging into each stockpile. The stockpile samples were delivered under proper chain-of-custody protocol to Calscience Environmental Laboratories for analyses. The location of the stockpile samples are presented in Figure 2.

7.0 WASTE DISPOSAL

7.1 Soil Disposal

On January 6, 1999, approximately 38.79 tons of hydrocarbon-impacted soil generated during UST removal activities was loaded into plastic-lined end-dump trucks and transported to the TPS Technologies facility located in Adelanto, California for recycling. Copies of the soil disposal manifests are presented in Appendix C.

7.2 Rinsate Disposal

On December 24, 1998, prior to their removal, the two (2) USTs were triple rinsed and pumped dry by Able Environmental Services. Approximately 50 gallons of rinsate were manifested and transported to Crosby and Overton in Long Beach, California for disposal. A copy of the waste manifest is presented in Appendix C.

8.0 LABORATORY ANALYSES

8.1 Soil Laboratory Analyses

A total of six (6) soil samples were collected for analyses during the UST removal activities The soil samples were analyzed for the gasoline range of total petroleum hydrocarbons (TPH-G), organic lead, and BTEX (benzene, toluene, ethylbenzene, total xylenes) and MTBE (methyl-tert-butyl ether) in accordance with EPA Method Number 8015M, the Department of Health Services LUFT Method, and EPA Method 8021B, respectively.

A summary of soil laboratory results is presented in Table 1. The laboratory reports and chain-of-custody forms are presented in Appendix D.

9.0 SUMMARY OF ACTIVITIES/FINDINGS

Based on the data presented in this report, current regulatory guidelines, and the professional judgment of TEM, the following summary of activities/findings is presented:

- Two (2) sphere-shaped fiberglass 1,000-gallon gasoline UST's were removed from the SITE in good condition;

- Groundwater was encountered during UST removal activities at approximately 5 to 6 feet bgs;

- Two (2) soil samples (1A and 2A) were collected approximately two (2) feet beneath each excavated USTs at a depth of approximately 12 feet bgs. One (1) soil sample (D1) was collected approximately three (3) feet beneath the removed dispenser.

One (1) soil sample (P1) was collected approximately three (3) feet beneath the associated product piping and two (2) soil samples (S1 and S2) were collected from the soil stockpile associated with the UST removal activities;

- All six (6) soil samples were reported to contain TPH-G concentrations at or above laboratory detection limits. Sample D1 was reported to contain the highest TPH-G concentration at 1,060 milligrams per kilogram (mg/kg);

- Two (2) of the six (6) soil samples were reported to contain benzene concentrations at or above laboratory detection limits. Sample D1 was reported to contain the highest benzene concentration at 1.3 mg/kg;

- Five (5) of the six (6) soil samples were reported to contain MTBE concentrations at or above laboratory detection limits. Sample D1 was reported to contain the highest MTBE concentration at 8.6 mg/kg;

- None of the six (6) soil samples were reported to contain organic lead concentrations at or above laboratory detection limits; and

- The soil stockpile (38.79 tons) was removed from the SITE and transported to TPS technologies for disposal.

10.0 RECOMMENDATIONS

Based on the work conducted to date, the data obtained during the additional subsurface investigation, current regulatory guidelines, and the professional judgement of TEM, the following recommendation is presented for your consideration:

- Additional assessment should be conducted to characterize the extent of soil and possible groundwater contamination.

11.0 REFERENCES

California Code of Regulations (CCR). Title 22, Division 4, Chapter 30, *Minimum Standards for Management of Hazardous and Extremely Hazardous Waste.*

Los Angeles County Department of Public Works. Fall 1996. *Coastal Plain Deep Aquifer Groundwater Contour Map.*

State of California, Department of Water Resources. 1961, reprinted 1990. *Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County*, Bulletin No. 104.

State of California, State Water Resource Control Board. 1989. *Leaking Underground Fuel Tank Manual, Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure.*

12.0 LIMITATIONS

A UST Removal Report contains professional opinions with respect to environmental issues of concern and/or additional actions that may be addressed at the subject property. In rendering a professional opinion, we warrant that the services provided hereunder were performed within the limits described and in accordance with current generally accepted environmental consulting principles and practices. TEM represents that the services were performed in a manner consistent with industry standards. No other warranty, either expressed or implied, is intended by TEM. The following paragraphs discuss the assumptions and parameters under which such an opinion has been rendered.

No investigation is considered thorough enough to exclude the presence of hazardous materials at a given site. Therefore, if no hazardous materials have been identified during the conduct of the assessment, then such a finding should not be construed as a guarantee of the absence of such materials on the property, but rather an interpretation of the results of services performed within the scope, limitations, and cost of the work performed.

Any opinions and/or recommendations presented apply to site conditions existing at the time of the performance of services. TEM is unable to report on or accurately predict events which may impact the site following conduct of the described services, whether occurring naturally or caused by external forces. TEM assumes no responsibility for conditions we were not authorized to investigate, or conditions not generally recognized as environmentally unacceptable at the time services were performed.

TEM is not responsible for any potential impact of the property attributable to this document due to changes in applicable environmental standards, practices or regulations following performance of services. Services hereunder were performed in accordance with our agreement and understanding with, and solely for the use of, LADPW. Opinions and/or recommendations are intended for the client, purpose, site, location, time frame and project parameters indicated. We are not responsible for subsequent separation, detachment or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

The California Code of Regulations (CCR), Title 23, Chapter 16 was used as a basis for the procedures and guidelines where appropriate during the course of this project. In addition, CCR, Title 22, Division 4.5, Chapter 10, Minimum Standards for the Management of Hazardous and Extremely Hazardous Waste was used to determine what is a hazardous waste.

TABLE 1
SUMMARY OF SOIL LABORATORY ANALYSES

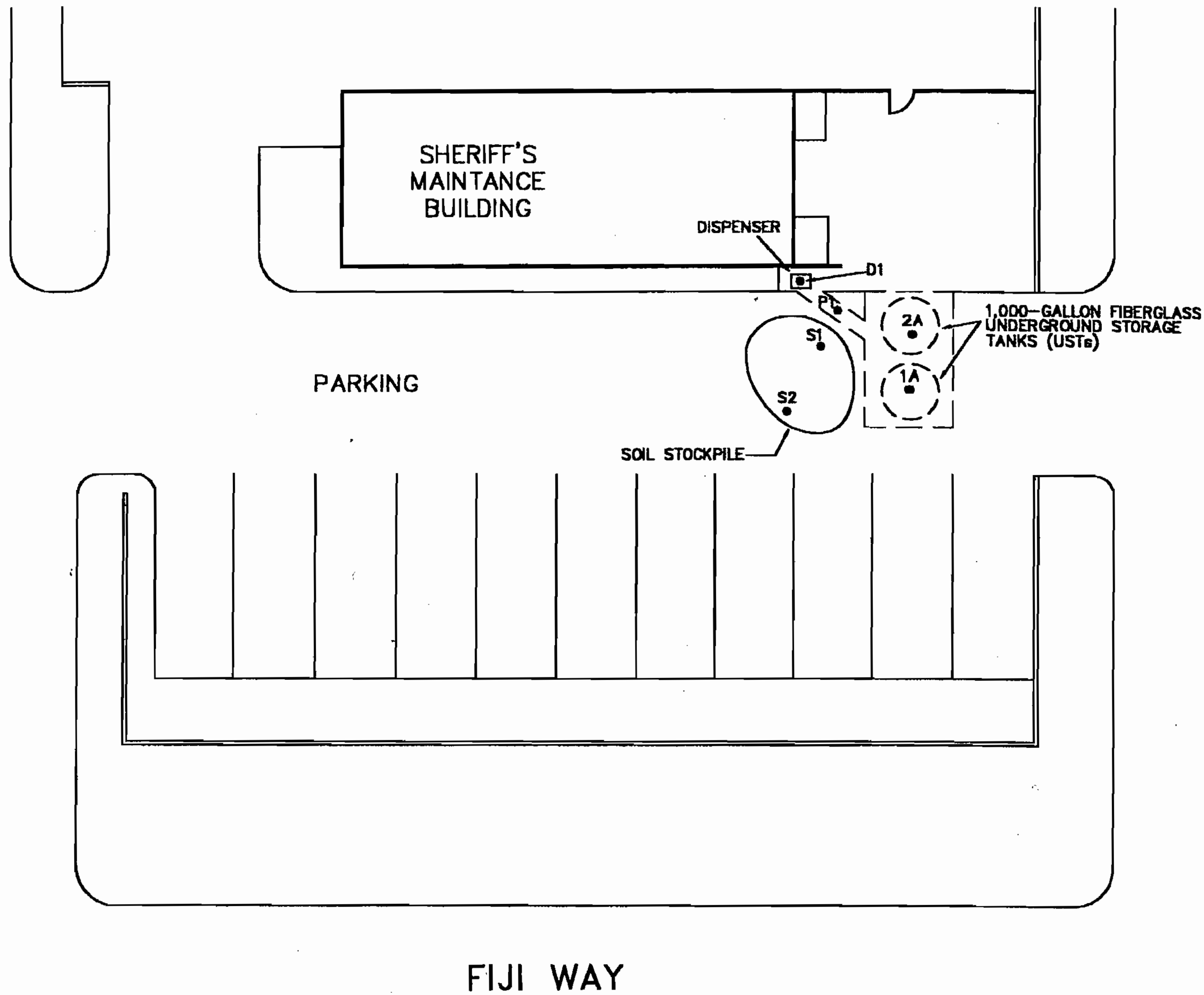
LOS ANGELES COUNTY SHERIFF'S STATION
13483 FIJI WAY, DOCK 52
MARINA DEL REY, CALIFORNIA

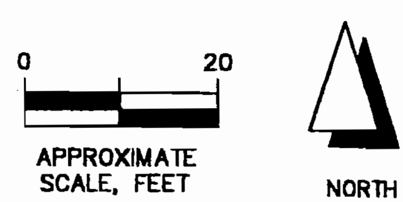
Sample ID	Sample Date	Sample Depth	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Organic Lead
1A	12/28/98	12'	8.8	0.026	0.030	0.172	0.576	0.421	ND<1.0
2A	12/28/98	12'	1.2	ND<0.005	ND<0.005	0.006	0.025	1.19	ND<1.0
D1	12/28/98	3'	1,060	1.3	27.5	16.3	116	8.6	ND<1.0
P1	12/28/98	3'	490	ND<0.5	1.0	7.0	41.1	ND<2.5	ND<1.0
S1	12/28/98	--	7.1	ND<0.005	ND<0.005	ND<0.005	0.318	0.043	ND<1.0
S2	12/28/98	--	2.6	ND<0.005	ND<0.005	ND<0.005	0.300	0.493	ND<1.0

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline
MTBE = Methyl-tertiary-butyl-ether
ND = Not detected at or above method detection limits

- Concentrations are reported in milligrams per kilogram (mg/kg).
- Sample depths are in feet below ground surface (bgs).
- Analyses for TPH-G, BTEX/MTBE, and Organic Lead were performed in accordance with the EPA Method No.8015M, EPA Method No. 8021B, and Department of Health Services LUFT Method, respectively.





NOTES:

ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE

BASE MAP TAKEN FROM TAIT & ASSOCIATES, INC.

EXPLANATION:

1A ● SOIL SAMPLE LOCATION AND DESIGNATION

— — — LIMITS OF EXCAVATION

TAIT ENVIRONMENTAL MANAGEMENT, INC.
1100 TOWN & COUNTRY ROAD
SUITE 1200
ORANGE, CA 92868
(714) 560-8200
(714) 560-8211 FAX

SITE PLAN

LOS ANGELES COUNTY SHERIFF'S STATION
13483 FIJI WAY, DOCK 52
MARINA DEL REY, CALIFORNIA

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	CAK000838460
Manifest Document No.	1 6 0 5 1
2. Page 1 of	1
3. Generator's Name and Mailing Address	LOS ANGELES CO. DOCK 52 / 13483 FIJI WY. / MARINA DEL REY, CA
4. Generator's Phone	(213) 881-3720
5. Transporter 1 Company Name	ABLE ENVIRONMENTAL
6. US EPA ID Number	CAR000009482B
7. Transporter 2 Company Name	
8. US EPA ID Number	
9. Designated Facility Name and Site Address	CROSBY AND OVERTON / 1630 W. 17TH ST / LONG BEACH, CA
10. US EPA ID Number	CAD028409019

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. R.Q. WASTE FLAMMABLE LIQUID, N.O.S. (GASOLINE AND WATER) 3, U.N. 1993 II (D001)	001	TT	00050	G
b.				
c.				
d.				

15. Special Handling Instructions and Additional Information

WEAR APPROPRIATE PROTECTIVE CLOTHING

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[signature]	1 2	2 4	9 8

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
MANNY DOMINGUEZ	Manuel Dominguez	1 2	2 4	9 8

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
JOE DIMAS	Joe Dimas	1 2	2 8	9 8

GENERATOR · TRANSPORTER · FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (4/97)
EPA 8700—22

Green: TRANSPORTER RETAINS

ID=

P. 01

SAN BERNARDINO COUNTY
SOLID WASTE MANAGEMENT DEPARTMENT
222 W. HOSPITALITY LANE, 2ND FLOOR
SAN BERNARDINO, CA 92415-0017

CONTROL NO 5925484

DATE

RECEIPT NO

WEIGHT RECEIPT

TRUCK DECAL SWM-01CASH	TRUCK NO	CONTAINER ID
CUSTOMER CASH CUSTOMER		ACCOUNT NO CASH
ORIGIN		REFUSE TYPE CMSH
TRANSACTION TYPE CASH	CASH	CREDIT
	AMOUNT DUE	
AMOUNT TENDERED		CHANGE DUE $73.00

TIME IN	TIME OUT	
SITE	OPERATOR	
GROSS LBS		
TARE LBS		
NET LBS	CUBIC YARDS	
NET TONS	RATE PER TON	RATE PER CUBIC YARD

EFFECTIVE [illegible] NO LONGER ACCEPT [illegible]

DRIVER: X

Printed on recycled paper

SEE REVERSE SIDE FOR RULES AND REGULATIONS

Soil Master (c) TPS Technologies, Inc.

Customer Job Report

ross & Tare Weight Codes: M=Manual; S=Scale; T=Trk File

Job Number Name	SiteAddress	SiteCity	State	ZipCode
A07 -- 11945 DOCK 52	13851 FIGI WAY	MARINA DEL REY	CA	90292

Load #	Date & Time Out	Transporter #	Truck & Trailer Number	Gross (lb)	Tare (lb)	Net (lb)	Net Wt (tons)
1	01/06/99 11:21	7000193	1298 -- 1298T	84,600S1	31,280S1	53,320	26.66
2	01/06/99 17:44	7000193	1298 -- 203	55,200S1	30,940S1	24,260	12.13

Completed Loads	Manifests Received	Completed Weight	Estimated Weight	TOTAL Net Wt:
66.70%	2	77.60%	50.00(tons)	38.79 (tons)

Manifest

TPS Technologies Soil Recycling

Non-Hazardous Soils

Date of Shipment:	Responsible for Payment: Consultant	Transporter Truck #: 1298	Facility #: A07	Given by TPS: 11945	Load # 001

Generator's Name and Billing Address: COUNTY OF L.A. DEPT. OF PUBLIC WORKS MATERIAL ENGINEERING DIVISION 900 S. FREEMONT AVE., 4TH. FLOOR ALHAMBRA, CA 91803 USA	Generator's Phone #: Person to Contact: FAX#: (818) 458-4925	Generator's US EPA ID No.: Customer Account Number with TPS: 7CLADPW
Consultant's Name and Billing Address: TAIT ENV. MANAGEMENT P.O. BOX 4429 1100 TOWN & COUNTRY RD., STE.1200 ORANGE, CA 92668 USA	Consultant's Phone #: (714) 560-8200 Person to Contact: EDWARD BATLLE FAX#: (714) 560-8211	Customer Account Number with TPS: 1000397
Generation Site (Transport from): (name & address) DOCK 52 13851 FIGI WAY MARINA DEL REY, CA 90292 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): (name & address) TPS TECHNOLOGIES INC. 12328 HIBISCUS AVE. Adelanto, CA 92301 USA	Facility Phone #: 800-862-8001 Person to Contact: DARREN R. BARTLETT FAX#: 760-246-8004	Facility Permit Numbers
Transporter Name and Mailing Address: B.E.S.I. 25422 TRABUCO RD. #105-269 EL TORO, CA 92630 USA	Transporter's Phone #: (949) 450-1010 Person to Contact: LARRY MOOTHART FAX#: (949) 450-1177	Transporter's US EPA ID No.: CAD983584681 Transporter's DOT No.: 450647 Customer Account Number with TPS: 7000193

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			84600	31280	53320
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					26.66

List any exception to items listed above: 37508

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Dean Dill Generator ☑ Consultant ☐ Signature and date: [signature] Month 1 Day 6 Year 99

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: ROBERTO GARCIA. Signature and date: Roberto Garcia Month 1 Day 6 Year 99

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: D. Bartlett/D. BENTON Signature and date: DB 1/6/99

Generator and/or Consultant — Transporter — Recycling Facility

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

Date of Shipment	Responsible for Payment	Transporter Truck #	Facility #	Given by TPS	Load #
	Consultant		A07	11945	002

Generator and/or Consultant

Generator's Name and Billing Address	Generator's Phone #	Generator's US EPA ID No.
COUNTY OF L.A. DEPT. OF PUBLIC WORKS MATERIAL ENGINEERING DIVISION 900 S. FREEMONT AVE., 4TH. FLOOR ALHAMBRA, CA 91803 USA	Person to Contact: FAX#: (818) 458-4925	Customer Account Number with TPS: 7CLADPW
Consultant's Name and Billing Address: TAIT ENV. MANAGEMENT P.O. BOX 4429 1100 TOWN & COUNTRY RD., STE.1200 ORANGE, CA 92668 USA	Consultant's Phone #: (714) 560-8200 Person to Contact: EDWARD BATLLE FAX#: (714) 560-8211	Customer Account Number with TPS: 1000397
Generation Site (Transport from): (name & address) DOCK 52 13851 FIGI WAY MARINA DEL REY, CA 90292 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): (name & address) TPS TECHNOLOGIES INC. 12328 HIBISCUS AVE. Adelanto, CA 92301 USA	Facility Phone #: 800-862-8001 Person to Contact: DARREN R. BARTLETT FAX#: 760-246-8004	Facility Permit Numbers
Transporter Name and Mailing Address: B.E.S.I. 25422 TRABUCO RD. #105-269 EL TORO, CA 92630 USA	Transporter's Phone #: (949) 450-1010 Person to Contact: LARRY MOOTHART FAX#: (949) 450-1177	Transporter's US EPA ID No.: CAD983584681 Transporter's DOT No.: 450647 Customer Account Number with TPS: 7000193

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		Clean up	55200	30940	24260
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		load			12.13

List any exception to items listed above: 37570

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: ERNESTO ARCE Generator ☐ Consultant ☐
Signature and date: Ernesto Arce Month 1 Day 6 Year 99

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: ROBERTO GARCIA
Signature and date: Roberto Garcia Month 1 Day 6 Year 99

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: D. Bartlett/D. BENTON
Signature and date: 1/8/99

002575-021278

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☐ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☐ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.

SIGNED: [signature] DATE: OCT 30 2000

REPORT DATE: M M D D Y Y

CASE #:

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: John Alonjo

PHONE: (626) 458 3507

SIGNATURE: John Alonjo

REPRESENTING: ☐ OWNER/OPERATOR ☐ REGIONAL BOARD ☒ LOCAL AGENCY ☐ OTHER

COMPANY OR AGENCY NAME: LA County Public Works

ADDRESS: 900 S. Fremont Ave. (STREET) Alhambra (CITY) CA (STATE) 91803 (ZIP)

RESPONSIBLE PARTY

NAME: LA Co. Sheriffs ☐ UNKNOWN

CONTACT PERSON: Randy Klank

PHONE: (810) 903 7525

ADDRESS: 4700 Ramona Blvd. (STREET) Monterey Park (CITY) CA (STATE) 91754 (ZIP)

SITE LOCATION

FACILITY NAME (IF APPLICABLE): LA Co. Sheriffs Marine Dock

OPERATOR: Randy Klank

PHONE: (810) 903 7525

ADDRESS: 13483 Fiji Way (STREET) Marina Del Rey (CITY) LA (COUNTY) 90292 (ZIP)

CROSS STREET: Admiralty Way

IMPLEMENTING AGENCIES

LOCAL AGENCY / AGENCY NAME: LA Co. Public Works

CONTACT PERSON: Carl Sjoberg

PHONE: (626) 458 3539

REGIONAL BOARD: CRWQCB

Dave Bacharowski

PHONE: (213) 576 6620

SUBSTANCES INVOLVED

NAME / QUANTITY LOST (GALLONS)

(1) TPH of 1060 ppm; BTEX 1.3/27/16/116 ppm ☐ UNKNOWN

(2) MTBE of 0.49 ppm, 1.19 ppm, 8.6 ppm ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: 12 28 98

HOW DISCOVERED: ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ TANK TEST ☒ TANK REMOVAL ☐ OTHER

DATE DISCHARGE BEGAN: M M D D Y Y ☒ UNKNOWN

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY): ☐ REMOVE CONTENTS ☐ REPLACE TANK ☒ CLOSE TANK ☐ REPAIR TANK ☐ REPAIR PIPING ☐ CHANGE PROCEDURE ☐ OTHER

HAS DISCHARGE BEEN STOPPED? ☒ YES ☐ NO IF YES, DATE M M D D Y Y

SOURCE/CAUSE

SOURCE OF DISCHARGE: ☒ TANK LEAK ☐ UNKNOWN ☒ PIPING LEAK ☐ OTHER

CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ SPILL ☐ CORROSION ☐ UNKNOWN ☐ OTHER

CASE TYPE

CHECK ONE ONLY: ☒ UNDETERMINED ☐ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY:
☐ NO ACTION TAKEN ☐ PRELIMINARY SITE ASSESSMENT WORKPLAN SUBMITTED ☐ POLLUTION CHARACTERIZATION
☒ LEAK BEING CONFIRMED ☐ PRELIMINARY SITE ASSESSMENT UNDERWAY ☐ POST CLEANUP MONITORING IN PROGRESS
☐ REMEDIATION PLAN ☐ CASE CLOSED (CLEANUP COMPLETED OR UNNECESSARY) ☐ CLEANUP UNDERWAY

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☐ CAP SITE (CD) ☐ EXCAVATE & DISPOSE (ED) ☐ REMOVE FREE PRODUCT (FP) ☐ ENHANCED BIO DEGRADATION (IT)
☐ CONTAINMENT BARRIER (CB) ☐ EXCAVATE & TREAT (ET) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ REPLACE SUPPLY (RS)
☐ VACUUM EXTRACT (VE) ☐ NO ACTION REQUIRED (NA) ☐ TREATMENT AT HOOKUP (HU) ☐ VENT SOIL (VS)
☒ OTHER (OT) Not specified.

COMMENTS

RL for MTBE 0.025 ppm

HSC 05 (11/89)

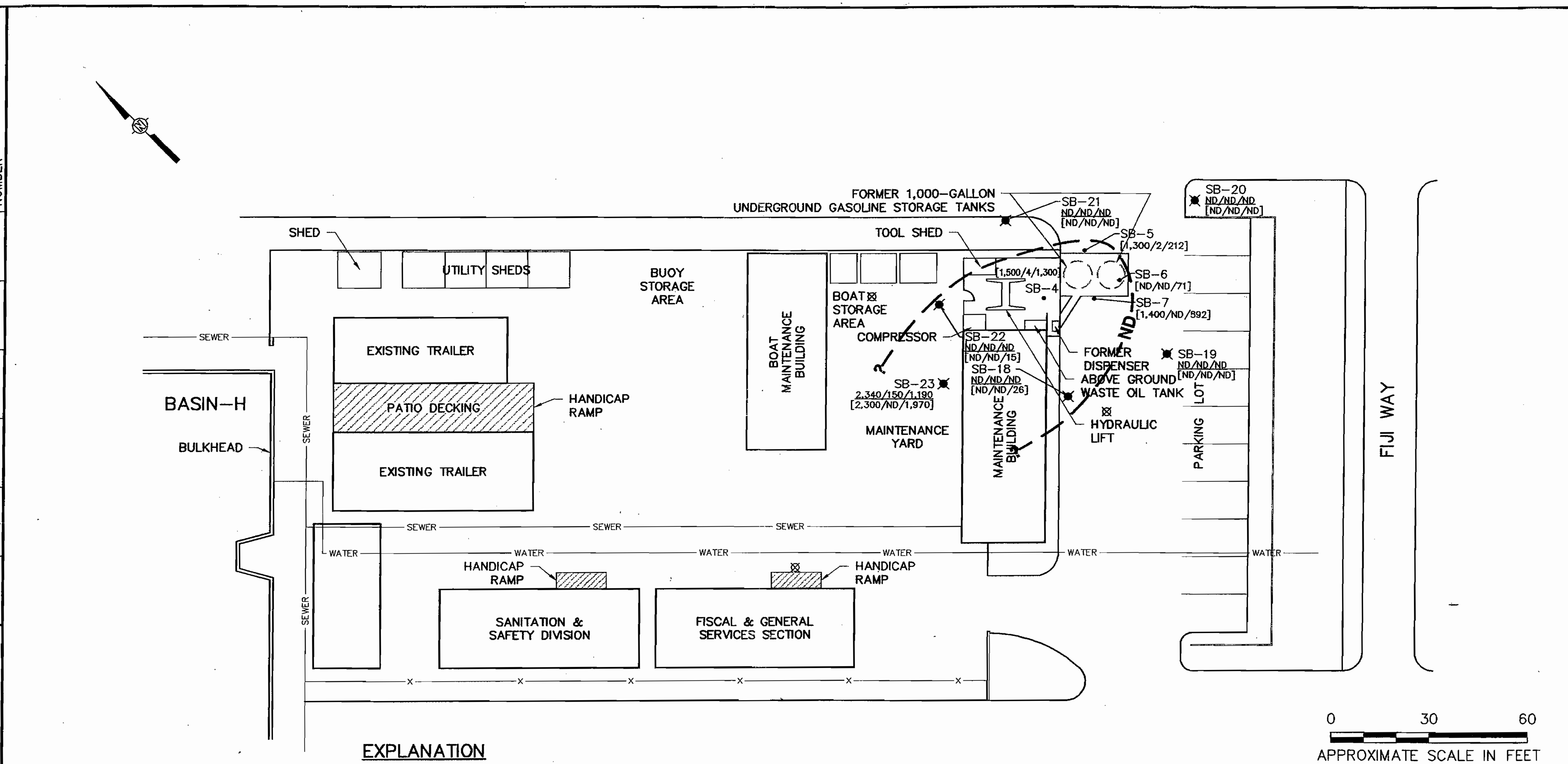
30-387

PROJECT NUMBER 831174

APPROVED BY

CHECKED BY

DRAWN BY MJS 09/01



EXPLANATION

SB–4 • SOIL BORING LOCATION

SB–23 HYDROPUNCH LOCATION

PROPOSED GROUNDWATER MONITORING WELL

2,340/150/1,190 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE/BENZENE/MTBE CONCENTRATIONS (μg/L) IN GROUNDWATER

[1,500/4/1,300] MAXIMUM TPHG/BENZENE/MTBE CONCENTRATION (μg/Kg) IN SATURATED SOIL

ND NOT DETECTED ABOVE REPORTING LIMITS

ND EXTENT OF SATURATED–ZONE SOIL AND GROUNDWATER CONTAINING DETECTABLE HYDROCARBON CONCENTRATIONS

LOCATIONS OF FEATURES ARE APPROXIMATE.

Shaw Environmental & Infrastructure, Inc.

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
ARCHITECTURAL ENGINEERING DIVISION

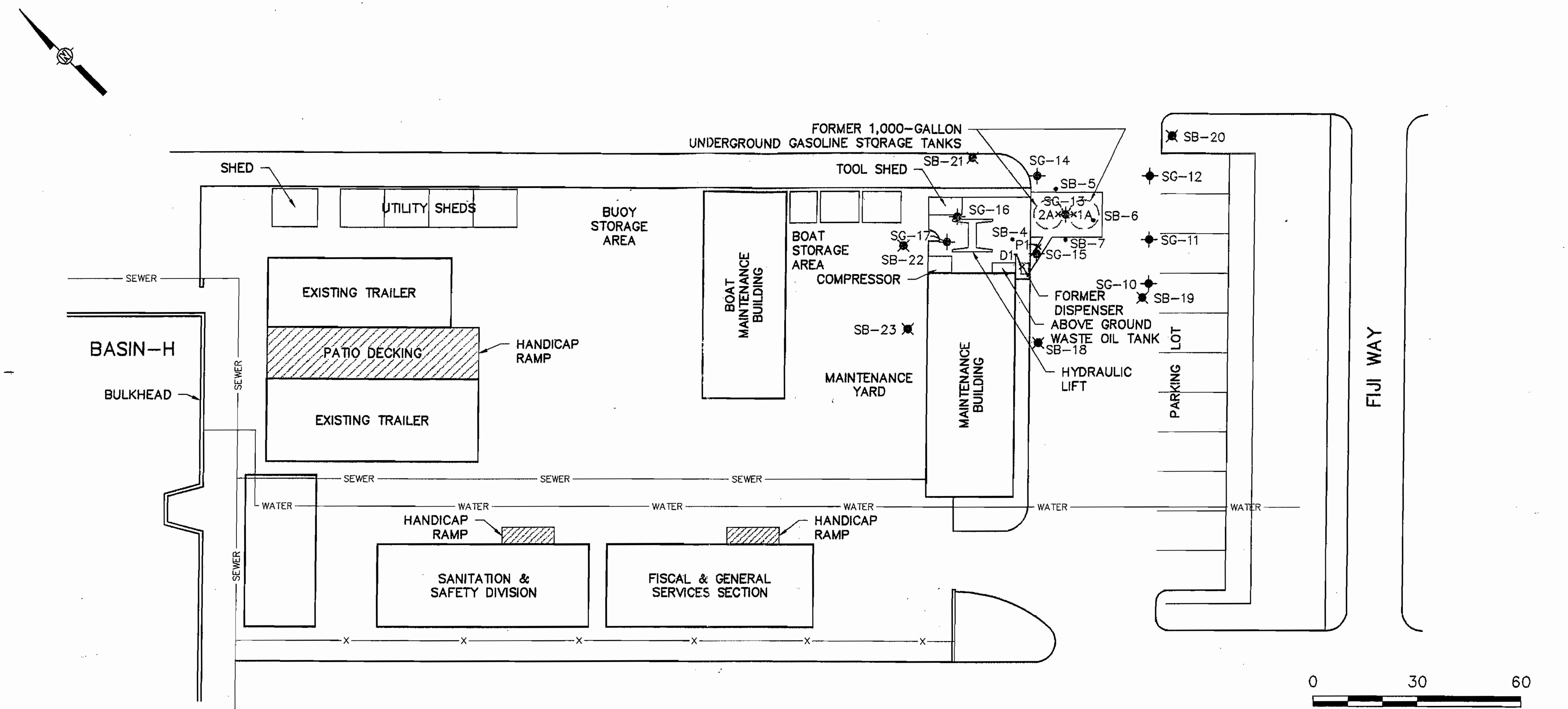
MARINA del REY SHERIFF'S STATION

FIGURE 5

ANALYTICAL DATA SUMMARY MAP, DOCK 52

13483 FIJI WAY
MARINA del REY, CALIFORNIA

N:\CAD\DWG\831174\MARINA del REY\20700000\PAMdRSSFG05.dwg Thu 20/Feb/03 08:49am kkistinger



0 30 60

APPROXIMATE SCALE IN FEET

EXPLANATION

2A × SOIL SAMPLE LOCATION, TANK REMOVAL ACTIVITIES

SG-10 ✦ SOIL-GAS LOCATION

SB-4 • SOIL BORING LOCATION

SB-23 ✖ HYDROPUNCH LOCATION

LOCATIONS OF FEATURES ARE APPROXIMATE.

PROJECT NUMBER 831174

APPROVED BY

CHECKED BY

DRAWN BY MJS 09/01

Shaw™

Shaw Environmental & Infrastructure, Inc.

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
ARCHITECTURAL ENGINEERING DIVISION

MARINA del REY SHERIFF'S STATION

FIGURE 2

SAMPLE LOCATION MAP,
DOCK 52

13483 FIJI WAY
MARINA del REY, CALIFORNIA

N:\CAD\DWG\831174\MARINA del REY\20700000\PAMdRSSFG02.DWG Wed. 26/Feb/03 01:28pm kkistinger

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 24, 2007

WILLOW BROHMER
ANALYTICAL CONSULTING GROUP
1746F VICTORIA AVE.# 366
VENTURA, CA 93003

Ref.: CONTROL NO. 54287
Received 7/20/2007

Re: P/O'S, EQL, NOV'S, N/C'S, COMPLAINTS, I/R'S & ASBESTOS NOTIFICATIONS/RECORDS FOR LA COUNTY DEPARTMENT OF BEACHES & HARBORS, 13483 & 13837 FIJI WAY, MARINA DEL REY, CA 90292.

After a thorough search of this agency's records, the following records were found:
INACTIVE P/O'S (AVAILABLE ON FIND), EQL, N/C'S (13483), & ASBESTOS NOTIFICATIONS/RECORDS FOR LA COUNTY DEPARTMENT OF BEACHES & HARBORS, 13483 & 13837 FIJI WAY, MARINA DEL REY, CA 90292.

The following records were not found:
NOV'S, COMPLAINTS & I/R'S FOR LA COUNTY DEPARTMENT OF BEACHES & HARBORS, 13483 & 13837 FIJI WAY, MARINA DEL REY, CA 90292.

These records total less than 10 pages,so there is no charge for the direct cost of duplication.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Linda L Koenig
Public Records Coordinator

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 99171 LA CO.,SHERIFF'S DEPT, DOCK 52
Last Inspection: 05/23/2002
SIC: 9221
Inspector: JH04 JEANETTE HOLTZMAN
Inspection Date: 05/23/2002
Location Address: 13483 FIJI WAY, MARINA DEL REY 90292 Sector:LF
Mailing Address: 1000 S FREMONT AVE, ALHAMBRA 91803 Sector:PE
Instruction:

MR:
TS: TS-09 Non-inspection: Potential I
Facility Status: Active
Assignment No. 706511
Disposition: Not Operating - Equipment Removed

Contact: H. DEAN STROUD (310) 9037525
Quarter: none - do not inspect
On Hold:
Facility Team: H1
Suspended:

RECLAIM: N TITLE V: N SIP: AIR:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
3rd	285964	N00633	10/22/1993	INACTIVE	248900	BCAT	STORAGE TANK GASOLINE	10/08/1993	PERMIT TO OPERATE GRANTED
3rd	285964	N00633	10/22/1993	INACTIVE	91	CCAT	AMINE TREATING	10/08/1993	PERMIT TO OPERATE GRANTED
3rd	299554	N02133	02/08/1995	INACTIVE	248900	BCAT	STORAGE TANK GASOLINE	01/03/1995	PERMIT TO OPERATE GRANTED

Report: On 05/23/02 I conducted a routine inspection of this marine dock and boat maintenance shop. I met with Mark. The gasoline tank was removed in 1996. I confirmed that there is no gasoline storage or dispensing equipment onsite. I believe the inspection report written on 6/10/99 is actually referring to the Sheriff's facility at 13851 Fiji Way.

Inspector: ______________ Date: __________ Reviewed By: ______________ Date: __________

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 69697 LA CO. INTERNAL SERVICES DEPT
Last Inspection: 01/01/1999
SIC: 9199
Inspector:
Inspection Date:
Location Address: 13837 FIJI WAY, LOS ANGELES 90291 Sector:LF
Mailing Address: 1100 N EASTERN AVE, LOS ANGELES 90063-3298 Sector:PF
Instruction:

MR:
TS: TS-09 Non-inspection: Potential I
Facility Status: Active
Assignment No.
Disposition:

Contact: REG XV (213) 0000000
Quarter: 0001 - inspect in 4th quarter, every year
On Hold:
Suspended:
Facility Team:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status

Report:

Inspector: ______ Date: ______ Reviewed By: ______ Date: ______

South Coast Air Quality Management District

NC A20085

Company

Facility: LA CO.,SHERIFF'S DEPT,SHERIFF'S STATION (ID: 99171)
Location Address: 13483 FIJI, WAY MARINA DEL REY
Mailing Address: 13483 FIJI, WAY, CA 90292
Representative:

Violation

Notice Issued Date: 8/8/1994
Violation Date: 8/8/1994
Serve To: LA CO.,SHERIFF'S DEPT,SHE RIFF'S STATION
Issue By: SHAILESH M PATEL (Team: B)
Assignment No.: 488105
Compliance Acheived Date:
Equipment Description: GASOLINE DISPENSING

Compliance Required: A)APPLY FOR P/O FOR GAS DISP EQUIP. B)INSTALL R461 COMPLIANTFILL TUBE (<6" FROM BOTTOM). C)POST R461 COMPLIANT SIGNS ON THE DISPENSING STATION. 4203a, R461, R461c3E

Disposition

Final Action Code:
Due Date:
Violation Days: 0

Rule/Comment

203 PERMIT OPERATE OR CONDITIONS
161 GASOLINE TRANSFER & DISPENSING

Emittent

Follow-Up

Status: Inspector ID: Inspection Date: Number:

Device IDs.

Inspector Comment

INSPECTOR: ______________________ DATE: ______________________
signature

UPERVISOR: ______________________ DATE: ______________________
signature

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 69698 LA COUNTY INTERNAL SERVICES DEPT.
Last Inspection: 05/13/2002
SIC: 9199
Inspector: JH04 JEANETTE HOLTZMAN
Inspection Date: 05/13/2002
Location Address: 13837-51 FIJI WAY, LOS ANGELES 90291 Sector:LF
Mailing Address: P.O. BOX 51111, LOS ANGELES 90051-0100 Sector:PL
Instruction:

MR:
TS: TS-12 Industrial Sources - Out of
Facility Status: Active
Assignment No. 815067
Disposition: Change of Ownership

Contact: REG XV (213) 0000000
Quarter: none - do not inspect
On Hold: Y
Facility Team:

Suspended: N

RECLAIM: N TITLE V: N SIP: AIR:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
3ind	194913	D10379	10/04/1989	INACT_NR	332900	BCAT	STORAGE TANK FUEL OIL	05/18/1989	PERMIT TO OPERATE GRANTED

Report: Inspection 5/13/2002. Equipment at this location is permitted under LA CO Beaches & Harbors, Sherrif's Department, ID# 70565. Delete this ID#.

Inspector: ____________ Date: ________ Reviewed By: ____________ Date: ________

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 28589 LA CO., MAINTENANCE
Last Inspection:
SIC:
Inspector:
Inspection Date:
Location Address: 13483 FIJI WAY, MARINA DEL REY 90291 Sector:LF
Mailing Address:
Instruction:

MR:
TS:
Facility Status: Out of Business
Assignment No.
Disposition:

Contact: UNKNOWN UNKNOWN (213) 8234571
Quarter: none - do not inspect
On Hold:
Suspended:
Facility Team:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
908491	908491	03/01/1983	INACTIVE	90	CCAT	AMINE (OR DEA) REGENERATION	01/01/1900	PERMIT TO OPERATE GRANTED
908491	908491	03/01/1983	INACTIVE	248915	BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	01/01/1900	PERMIT TO OPERATE GRANTED

Report:

Inspector: ____________ Date: ________ Reviewed By: ____________ Date: ________

NOTIFICATION INFORMATION:

Notification ID: 79532 | Resp. Agency: L | Received Date: 03/19/1996
Type of Notification: O | Target Rating: | Postmark Date: 03/15/1996
Type of Operation: E-N | Duplicate: | Submittal Date:

Comments: CK 3137 $75.90

FACILITY INFORMATION:

Is Asbestos Present? Y
Building Name: L A COUNTY INTERNAL SERVICES 305
Address: 13837 FIJI WAY

City: MARINA DEL REY State: CA Zip: 90292-
County: L State Air Quality Control Region: 9
Site Description: Public Access?
Building Size: 17500 (SQ FT) No. Floors: 3 Present Use: P
(LN FT) Building Age: 20 Prior Use : P

OWNER INFORMATION:

Owner Name:
Address:

City: State: Zip:
Contact: Telephone Number:

ASBESTOS INFORMATION:

Approximate Amount of Asbestos	RACM to be Removed	Nonfriable Asbestos Not to be Removed		Nonfriable Asbestos Removed		Unit
		CAT I	CAT II	CAT I	CAT II	
Pipes	0	0	0	0	0	
Surface Area	0	0	0	5000	0	
Vol. Off Fac. Comp.	0	0	0	0	0	

Removal Start Date: 03/16/1996 Removal Stop Date: 03/16/1996
Project Start Date: Project Stop Date:
Project Length:
Days Worked: Hours Worked:

Notification ID: 79532
Site Name: L A COUNTY INTERNAL SERVICES 305

TARGET INFORMATION:

Target ID	Target Name	Relation	Target City & State
090830	ENVIROTECH IND	Contractor	LOS ANGELES, CA
REC	Azusa Land Reclamation CO.	Landfill	Azusa, CA

ACTION INFORMATION:

Actn Date	Action Type	Action Target
03/19/1996	Notice Received	ENVIROTECH IND

PERMIT INFORMATION:

Permit #:
Start Date: 03/16/1996 Stop Date: 03/16/1996 Issue Date: 03/29/1996
Fee: $ 0.00 Issued By: Amended Permit? N
Check Info:

Permit Condition	Date Due	Date Met

ACTS 4.2P
SITE DETAIL REPORT

07/24/2007
PAGE 1

NOTIFICATION INFORMATION:

Notification ID: 79520 | Resp. Agency: L | Received Date: 03/22/1996
Type of Notification: O | Target Rating: | Postmark Date: 03/21/1996
Type of Operation: E-N | Duplicate: | Submittal Date:

Comments: CK 3143 $75.90

FACILITY INFORMATION:

Is Asbestos Present? Y
Building Name: L A COUNTY INTERNAL SERVICES 305
Address: 13837 FIJI WAY

City: MARINA DEL REY State: CA Zip: 90292-
County: L State Air Quality Control Region: 9
Site Description: ROOFING FROM DEPT OF BEACHES Public Access?
Building Size: 17500 (SQ FT) No. Floors: 3 Present Use: P
(LN FT) Building Age: 20 Prior Use : P

OWNER INFORMATION:

Owner Name:
Address:

City: State: Zip:
Contact: Telephone Number:

ASBESTOS INFORMATION:

Approximate Amount of Asbestos	RACM to be Removed	Nonfriable Asbestos Not to be Removed		Nonfriable Asbestos Removed		
		CAT I	CAT II	CAT I	CAT II	Unit
Pipes	0	0	0	0	0	
Surface Area	0	0	0	4500	0	
Vol. Off Fac. Comp.	0	0	0	0	0	

Removal Start Date: 03/22/1996 Removal Stop Date: 03/23/1996
Project Start Date: Project Stop Date:
Project Length:
Days Worked: Hours Worked:

Notification ID: 79520
Site Name: L A COUNTY INTERNAL SERVICES 305

TARGET INFORMATION:

Target ID	Target Name	Relation	Target City & State
090830	ENVIROTECH IND	Contractor	LOS ANGELES, CA
REC	Azusa Land Reclamation CO.	Landfill	Azusa, CA

ACTION INFORMATION:

Actn Date	Action Type	Action Target
03/22/1996	Notice Received	ENVIROTECH IND

PERMIT INFORMATION:

Permit #:
Start Date: 03/22/1996 Stop Date: 03/23/1996 Issue Date: 03/26/1996
Fee: $ 0.00 Issued By: Amended Permit? N
Check Info:

Permit Condition	Date Due	Date Met

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

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
Fax:(909) 396-3330

ACKNOWLEDGEMENT LETTER

July 20, 2007

WILLOW BROHMER
ANALYTICAL CONSULTING GROUP
1746F VICTORIA AVE., # 366
VENTURA, CA 93003

Re: Request for Records
Control # 54287
Request: P/O'S, EQL, NOV'S, N/C'S, COMPLAINTS, I/R'S & ASBESTOS NOTIFICATIONS/RECORDS FOR LA COUNTY DEPARTMENT OF BEACHES & HARBORS, 13483 & 13837 FIJI WAY, MARINA DEL REY, CA 90292.

Your request for records has been received by the Public Records Unit has been assigned for proccessing.

When your request is completed, an appointment will be made with you for your review of the records, or copies of the requested records will be mailed to you along with an invoice for the direct cost of duplication at $ .15/page over 10 pages, $8.00/microfiche or $10.00/diskette.

Should you have any questions or need additional information regarding your request, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.** Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

LISA RAMOS x3211
For Linda L Koenig
Public Records Coordinator

:lr

AQMD

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
FAX: (909) 396-3330

PUBLIC RECORDS REQUEST FORM

PRU Office Use Only
CONTROL NUMBER

ATTENTION REQUESTOR: To expedite your request for District records, please fill out this form completely, and identify specifically the type of records you are requesting. Please limit your request to one facility or one site address for each request form filed, and three requested items per form. Additional forms or pages can be used if requesting information for more than one facility or for records not identified on this form. Requests should reasonably describe identifiable records prepared, owned, used, or retained by the District. Public Records Unit staff is available to assist you in identifying those records in the District's possession. The District is not required by law to create a new record or list from an existing record.

REQUESTOR INFORMATION

NAME: Willow Brohmer		DATE: 7/19/07
COMPANY: Analytical Consulting Group, Inc.		
MAILING ADDRESS: 1746 F Victoria Ave., #366		
CITY: Ventura	STATE: CA	ZIP CODE: 93003
PHONE NUMBER: (805) 642-8180	FAX NUMBER: (805) 642-8190	

REQUESTED RECORDS (*3 items per form*)

☐ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
☑ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☑ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☑ Notices of Violation (NOV)	☐ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

TIME PERIOD OF DOCUMENTS REQUESTED From: Earliest Records To: Present

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Los Angeles County Department of Beaches and Harbors		
FACILITY ADDRESS: 13483/13837 Fiji Way		
CITY: Marina Del Rey	STATE: CA	ZIP CODE: 90292
FACILITY I.D. NO. (if known):	APPL. AND/OR PERMIT NO. (if known):	

Direct cost of duplication: *\$.15 per page for paper copies (first 10 pages free) and \$5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs \$10.00 each, but costs will vary (see Instructions for Requesting Records).*

☑ I wish to inspect the requested records, where applicable, and do not want copies produced at this time.
☐ I request that the SCAQMD contact me prior to copying the requested records if the cost exceeds \$20.00.
☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplicating the requested records in accordance with Gov. Code Sec. 6253(b).

Signature of Requestor

Note: After a preliminary estimate, advance payment <u>may</u> be required.

(Rev. 05/06/2005-lkoenig)

AQMD

Information Management
Public Records Unit

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Signature of Requestor

Note: After a preliminary estimate, advance payment may be required.

(Rev. 05/06/2005-lkoenig)

JOA
5/1/12

2575-21278

Shaw™

Shaw Environmental & Infrastructure, Inc.

ENVIRONMENTAL SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN

MARINA DEL REY SHERIFF'S STATION
13483 AND 13851 FIJI WAY
MARINA DEL REY, CALIFORNIA 90292
PROJECT NO. 831174

RECEIVED

MAR 3 1 2003

DEPARTMENT OF PUBLIC WORKS
ENVIRONMENTAL PROGRAMS DIVISION

Prepared for:

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
ARCHITECTURAL ENGINEERING DIVISION
900 SOUTH FREEMONT AVENUE
ALHAMBRA, CALIFORNIA 91803

Prepared by:

SHAW ENVIRONMENTAL, INC.
3452 FOOTHILL BLVD., 9TH FLOOR
PASADENA, CALIFORNIA 91107

MARCH 2003

CERTIFICATION

This report was prepared under the supervision and direction of the undersigned in a manner consistent with widely accepted environmental consulting principles and meets current standards of professional care and performance.

Shaw Environmental, Inc.

REGISTERED GEOLOGIST
Diana L. Buchanan
No 6297
Exp. 8/31/4
STATE OF CALIFORNIA

Basem Aweinat	Diana Buchanan, R.G. No. 6297
Project Engineer	Project Manager

Table 1
Soil Analytical Results, Tank Removal Activities
Marina Del Rey Sheriff's Station – Dock 52

Sample ID	Sample Date	Sample Depth (feet)	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Organic Lead
			8015M	8021B					LUFT
1A	12/28/98	12	8.8	0.026	0.030	0.172	0.576	0.421	ND<1.0
2A	12/28/98	12	1.2	ND<0.005	ND<0.005	0.006	0.025	1.19	ND<1.0
D1	12/28/98	3	1,060	1.3	27.5	16.3	116	8.6	ND<1.0
P1	12/28/98	3	490	ND<0.5	1.0	7.0	41.1	ND<2.5	ND<1.0

Notes:
Results are in mg/kg
ND: Not detected at or above method detection limits
P1: pipeline
D1: dispenser

TABLE 4
Summary of Soil Analytical Results
13483 and 13851 Fiji Way, Marina Del Rey

Date	Sample I.D.	Sample Depth (ft.)	TPH DRO (C13-C22) Diesel (mg/kg)	TPH ORO (C22+) Oil (mg/kg)	TPH as Gasoline (C4-C12) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	o-Xylene (mg/kg)	m- & p-Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)
Practical Quantitation Limit (PQL):			0.01	0.05	0.005	0.002	0.002	0.002	0.002	0.004	0.005	0.005	0.005	0.020
Preliminary Remediation Goal (PRG):			NE	NE	NE	0.6	520	8.9	270	270	17	NE	NE	NE
Dock 52 (13483 Fiji Way)														
3/4/2002	SB-4	5	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		10	n/a	n/a	ND	**0.004**	ND	**0.043**	ND	ND	**0.846**	ND	**0.005**	**0.116**
		15	n/a	n/a	**1.5**	ND	ND	ND	ND	ND	**1.3**	ND	ND	**0.121**
		20	n/a	n/a	ND	ND	ND	ND	ND	ND	**0.016**	ND	ND	ND
3/4/2002	SB-5	5	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		10	n/a	n/a	**1.3**	**0.002**	ND	**0.011**	ND	ND	**0.212**	ND	ND	ND
		15	n/a	n/a	ND	ND	ND	**0.003**	ND	ND	**0.067**	ND	ND	ND
3/4/2002	SB-6	5	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		10	n/a	n/a	ND	ND	ND	ND	ND	ND	**0.071**	ND	ND	ND
		15	n/a	n/a	ND	ND	ND	ND	ND	ND	**0.005**	ND	ND	ND
		20	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SB-7	5	n/a	n/a	**493**	ND	ND	**6.36**	**0.232**	**6.1**	ND	ND	ND	ND
		10	n/a	n/a	ND	ND	ND	ND	ND	ND	**0.892**	ND	ND	ND
		15	n/a	n/a	**1.4**	ND	ND	ND	ND	ND	**0.008**	ND	ND	ND
		20	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-18	10	n/a	n/a	ND<1	ND	ND	ND	ND	ND	**0.026**	ND	ND	ND
9/27/2002	SB-19	10	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-20	10	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-21	10	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-22	10	n/a	n/a	ND<1	ND	ND	ND	ND	ND	**0.015**	ND	ND	ND
9/27/2002	SB-23	10	n/a	n/a	**2.3**	ND	ND	ND	ND	ND	**1.970**	ND	**0.008**	**0.242**

TABLE 2
Summary of Groundwater Data
13483 and 13851 Fiji Way, Marina Del Rey

Date	Well/Sample I.D.	TOC Elevation (ft MSL)	Depth to Water (ft)	Groundwater Elevation (ft MSL)	TPH as Diesel (C13-C22) (µg/L)	TPH as Oil (C22+) (µg/L)	TPH as Gasoline (C4-C12) (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	o-Xylene (µg/L)	m- & p-Xylenes (µg/L)	MTBE (µg/L)
PQL:					500	500	50	1	1	1	1	2	2
MCL:					NE	NE	NE	1	150	700	1,750	1,750	13
Dock 52 (13483 Fiji Way)													
9/27/2002	SB-18	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-19	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-20	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-21	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-22	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-23	n/a	n/a	n/a	n/a	n/a	**2,340**	**150**	ND<5	**375**	ND<5	ND<10	**1,190**
Sheriff's Station (13851 Fiji Way)													
3/27/2002	MW-1	9.91	3.04	6.87	ND	ND	**4,240**	**393**	**16**	**69**	ND<10	ND<20	**1,310**
3/27/2002	MW-2	12.05	7.30	4.75	ND	ND	**3,440**	ND<5	ND<5	ND<5	ND<5	ND<10	**1,990**
3/27/2002	MW-3	12.50	7.70	4.80	ND	ND	**35,700**	**4,050**	**140**	**1,390**	**335**	**1,140**	**3,620**
9/27/2002	SB-24	n/a	n/a	n/a	n/a	n/a	**97**	ND	ND	ND	ND	ND	**92.5**
9/27/2002	SB-25	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	**4.5**
9/27/2002	SB-27	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	**17.0**
9/27/2002	SB-28	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-29	n/a	n/a	n/a	n/a	n/a	ND	ND	ND	ND	ND	ND	ND

PQL = Practical Quantitation Limit
MCL = Maximum Contaminant Level
ND = Not detected at or above the PQL.
n/a = Not analyzed

TABLE 3
Summary of Soil Vapor Analytical Results
13483 and 13851 Fiji Way, Marina Del Rey

Date	Sample I.D.	Sample Depth (ft.)	Benzene (ug/L)	Ethyl-benzene (ug/L)	Toluene (ug/L)	o-Xylene (ug/L)	m- & p-Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)
Reporting Limit (RL):			1.0	1.0	2.0	1.0	2.0	5.0	5.0	5.0
Dock 52 (13483 Fiji Way)										
3/4/2002	SG-10	5	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SG-11	4	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SG-12	5	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SG-13	4	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SG-14	5	**4.8**	**1.7**	**3.1**	ND	**4.1**	**22**	ND	ND
3/4/2002	SG-15*	5	ND<10	**110**	ND<20	ND<10	**57**	ND<50	ND<50	ND<50
3/4/2002	SG-16	5	ND	**7.1**	ND	ND	**4.0**	ND	ND	ND
3/4/2002	SG-17	3	ND	**1.9**	ND	ND	ND	ND	ND	ND
Sheriff's Station (13851 Fiji Way)										
12/17/2001	SG-1	5	ND	ND	ND	ND	ND	ND	ND	ND
12/17/2001	SG-2	5	ND	ND	ND	ND	ND	ND	ND	ND
12/17/2001	SG-3	5	ND	ND	ND	ND	ND	ND	ND	ND
12/17/2001	SG-4	5	ND	ND	ND	ND	ND	ND	ND	ND
12/17/2001	SG-5	3	**1.5**	ND	ND	ND	ND	ND	ND	ND
12/17/2001	SG-6	3	ND	ND	ND	ND	ND	**14**	ND	ND
12/17/2001	SG-7	3	ND	ND	ND	ND	ND	ND	ND	ND
3/4/2002	SG-8	3	**59**	**1.4**	**27**	ND	ND	**28**	ND	ND
3/4/2002	SG-9	3	**6.8**	ND	**5.5**	ND	ND	**62**	ND	ND

ND = Not detected at or above the Reporting Limit (RL).
* = Sample diluted due to hydrocarbon interference, resulting in elevated RL. ND<10 = Not detected at an elevated RL of 10 ug/L

TABLE 4
Summary of Soil Analytical Results
13483 and 13851 Fiji Way, Marina Del Rey

Date	Sample I.D.	Sample Depth (ft.)	TPH DRO (C13-C22) Diesel (mg/kg)	TPH ORO (C22+) Oil (mg/kg)	TPH as Gasoline (C4-C12) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	o-Xylene (mg/kg)	m- & p-Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)
Practical Quantitation Limit (PQL):			0.01	0.05	0.005	0.002	0.002	0.002	0.002	0.004	0.005	0.005	0.005	0.020
Preliminary Remediation Goal (PRG):			NE	NE	NE	0.6	520	8.9	270	270	17	NE	NE	NE
Sheriff's Station (13851 Fiji Way)														
3/4/2002	SB-1	5	n/a	n/a	**11**	**0.412**	ND	**0.158**	**0.104**	**0.316**	**0.432**	ND	ND	ND
		10	n/a	n/a	**13**	**2.32**	ND	ND	ND	ND	**2**	ND	ND	ND
		15	n/a	n/a	**1.1**	**0.007**	**0.007**	**0.009**	**0.006**	**0.018**	**1.51**	ND	ND	**0.104**
3/4/2002	SB-2	5	n/a	n/a	**4.8**	**0.118**	ND	**0.077**	**0.002**	**0.016**	**1.16**	ND	**0.006**	**0.18**
		10	n/a	n/a	**129**	**1.90**	ND	**2.6**	ND	**0.05**	**0.72**	ND	ND	ND
		15	n/a	n/a	**24**	**1.19**	ND	**0.995**	ND	**0.045**	**0.975**	ND	ND	ND
3/4/2002	SB-3	5	ND	ND	n/a	**0.006**	ND	**0.003**	ND	ND	**0.014**	ND	ND	ND
		10	ND	ND	n/a	**1.53**	ND	ND	ND	ND	**1.9**	ND	ND	ND
		15	ND	ND	n/a	ND	ND	ND	ND	ND	**0.01**	ND	ND	ND
		20	ND	ND	n/a	ND	ND	ND	ND	ND	**0.009**	ND	ND	ND
3/5/2002	MW-1	5	n/a	n/a	**54**	**3.83**	**0.12**	**1.15**	**0.210**	**0.785**	**7.1**	ND	ND	ND
		10	n/a	n/a	**6.1**	**0.13**	ND	ND	ND	ND	**1.58**	ND	ND	ND
		15	n/a	n/a	**5.5**	**0.095**	ND	ND	ND	ND	**2.02**	ND	ND	ND
		20	n/a	n/a	ND	**0.005**	ND	ND	ND	ND	**0.854**	**0.046**	ND	ND
3/5/2002	MW-2	5	ND	ND	n/a	ND	ND	ND	ND	ND	**0.08**	ND	ND	ND
		10	ND	ND	n/a	ND	ND	ND	ND	ND	**0.104**	ND	ND	ND
		15	ND	ND	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND
		20	ND	ND	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/5/2002	MW-3	5	n/a	n/a	ND	**0.073**	ND	**0.004**	ND	ND	**0.662**	ND	ND	ND
		10	n/a	n/a	**407**	**6.7**	ND	**15.4**	ND	**0.2**	**2.14**	ND	ND	ND
		15	n/a	n/a	ND	ND	ND	**0.003**	ND	ND	ND	ND	ND	ND
		20	n/a	n/a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-24	12	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-25	12	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-26	7	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-27	7	n/a	n/a	**1.7**	**0.043**	ND	**0.006**	**0.011**	ND	**0.167**	ND	ND	**0.229**

TABLE 4
Summary of Soil Analytical Results
13483 and 13851 Fiji Way, Marina Del Rey

Date	Sample I.D.	Sample Depth (ft.)	TPH DRO (C13-C22) Diesel (mg/kg)	TPH ORO (C22+) Oil (mg/kg)	TPH as Gasoline (C4-C12) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	o-Xylene (mg/kg)	m- & p-Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)
Practical Quantitation Limit (PQL):			0.01	0.05	0.005	0.002	0.002	0.002	0.002	0.004	0.005	0.005	0.005	0.020
Preliminary Remediation Goal (PRG):			NE	NE	NE	0.6	520	8.9	270	270	17	NE	NE	NE
13851 Fiji Way, Marina Del Rey (cont.)														
9/27/2002	SB-28	12	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/27/2002	SB-29	12	n/a	n/a	ND<1	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not detected at or above the PQL unless otherwise noted.
n/a = Not analyzed

ABBREVIATIONS AND ACRONYMS

ASTM	American Society for Testing and Materials
AST	above ground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
Cal-EPA	California Environmental Protection Agency
cfm	cubic feet per minute
DIPE	diisopropyl ether
DHS	California Department of Health Services
DOT	Department of Transportation
DWR	California Department of Water Resources
ETBE	ethyl tert-butyl ether
IDW	investigation-derived waste
IT	IT Corporation
LACDPW	Los Angeles County Department of Public Works
msl	mean sea level
MTBE	methyl tert-butyl ether
mV	millivolts
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
PRG	Preliminary Remediation Goal
psi	pounds per square inch
PVC	polyvinyl chloride
RAP	Remedial Action Plan
RWQCB	California Regional Water Quality Control Board
SVE	Soil vapor extraction
TAME	tert-amyl methyl ether
TBA	tert-butyl alcohol
TPH	total petroleum hydrocarbons
USA	Underground Service Alert
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
mg/kg	milligrams per kilogram
ppm	parts per million
ppmv	parts per million by volume
µg/L	micrograms per liter
"wc	inches of water column

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EXECUTIVE SUMMARY

Shaw Environmental, Inc. (Shaw, formerly IT Corporation [IT]) was retained by the Los Angeles County Department of Public Works (LACDPW) to perform an environmental site assessment at two County properties located in Marina Del Rey, California. The properties consist of a Los Angeles County Sheriff's Station at 13851 Fiji Way, and an associated maintenance and office facility located at 13483 Fiji Way (Dock 52). The purpose of the site assessment was to evaluate the magnitude and extent of impact to soil and groundwater in the vicinity of the former USTs and determine if remedial action is warranted. Evidence of soil impact was discovered during the removal of five gasoline underground storage tanks (USTs) and one diesel UST from the subject properties in December 1998.

The site assessment was performed in two phases. The first phase consisted of a soil vapor survey and drilling and sampling of soil borings at both properties, and installation and sampling of three groundwater monitoring wells at the Sheriff's Station. The soil borings, soil vapor survey, and well installations were completed between December 2001 and March 2002. The newly-installed wells were sampled on March 27, 2002. Based on the results collected during the first assessment phase, a second assessment phase was performed in September 2002 to delineate the extent of impact. The second phase consisted of collecting additional soil and groundwater samples at both properties using HydroPunch equipment.

Moderate to low concentrations of petroleum hydrocarbons and fuel oxygenates were found in each of the soil borings drilled as part of the first phase of assessment in March 2002. Total petroleum hydrocarbons as gasoline (TPHG) concentrations in soil ranged from non-detectable to 493 milligrams per kilogram (mg/kg). Benzene concentrations in soil ranged from non-detectable to 6.7 mg/kg, and methyl *tert*-butyl ether (MTBE) concentrations in soil ranged from non-detectable to 7.1 mg/kg.

Groundwater samples collected from the three groundwater monitoring wells installed as part of the March 2002 site assessment contained maximum concentrations of 35,700, 4,050, and 3,620 micrograms per liter (µg/L) of TPHG, benzene, and MTBE, respectively.

Based on the analytical results for soil, soil vapor, and groundwater samples collected during the March 2002 site assessment activities, a second phase of assessment was warranted to delineate the vertical and lateral extent of residual hydrocarbon contamination beneath the site. Therefore, with the LACDPW's approval, Shaw supervised the drilling of twelve HydroPunch borings for the collection of additional soil and groundwater samples at both properties in September 2002. Only four of the twelve soil samples collected from the HydroPunch borings contained detectable concentrations of petroleum hydrocarbons and/or fuel oxygenates. These soil samples contained maximum concentrations of 2.3, 0.043, and 1.970 mg/kg of TPHG, benzene, and MTBE, respectively. Four of the HydroPunch groundwater samples (three from the Sheriff's Station and one from Dock 52) contained detectable concentrations of TPHG and/or fuel oxygenates. The three impacted HydroPunch groundwater samples collected from the Sheriff's Station property contained only low concentrations of MTBE and TPHG. The maximum concentrations of hydrocarbons and fuel oxygenates in the HydroPunch groundwater samples were detected in sample SB-23, collected from Dock 52. The TPHG, benzene, and MTBE concentrations in this sample were 2,340, 150, and 1,190 μg/L.

Since groundwater is impacted, the case will be referred to the Los Angeles Regional Water Quality Control Board (RWQCB) for regulatory oversight. Based on the assessment results, the RWQCB will likely require further assessment to delineate the extent of impacted soil and groundwater beneath both properties. To delineate the extent of impact, Shaw recommends that four groundwater monitoring wells be drilled and installed at the Sheriff's Station, and that three groundwater monitoring wells be drilled and installed at Dock 52.

Based on the hydrocarbon concentrations detected during this site assessment, remedial action may be required to mitigate hydrocarbon contamination in the subsurface before regulatory closure can be granted for this site. However, the site is located near Marina Del Rey Harbor, and groundwater at the site is probably brackish. Therefore, shallow groundwater at the site is not likely to be used as a source of drinking water. If it can be demonstrated that the impacted groundwater is brackish, then the clean up goals may be raised, and remediation may not be warranted. If remediation is required, Shaw recommends soil vapor extraction (SVE) combined with air sparging for mitigation of residual hydrocarbon concentrations in the subsurface. This is based on the geologic materials encountered at the site. The Remedial Action Plan (RAP) includes installing air sparge wells and SVE/observation wells, and performing SVE and air sparging field tests at both properties.

1.0 INTRODUCTION

This report summarizes the environmental site assessment activities that took place at the Marina Del Rey Sheriff's Station at 13483 and 13851 Fiji Way in Marina Del Rey, California (Figure 1). The site is located in the southwest part of the Los Angeles metropolitan area, approximately 2.3 miles southwest of the San Diego Freeway (Highway 405) and 0.3 mile southwest of the Marina Freeway (Highway 90).

A total of six underground storage tanks (USTs) had been present at the two properties until 1998. The USTs were removed in December 1998 as a part of the Los Angeles County Department of Public Works (LACDPW) UST Compliance Program. In January and March 2002, Shaw performed a soil vapor survey and drilled and sampled four soil borings in the area adjacent to two former 1,000–gallon spherical fiberglass gasoline USTs at 13483 Fiji Way (Dock 52). As part of the same fieldwork, Shaw drilled and sampled six soil borings in the vicinity of three former 1,500-gallon gasoline USTs and one former 1,000–gallon diesel UST at 13851 Fiji Way (Sheriff's Station). Three of the borings were converted into groundwater monitoring wells (designated MW-1 through MW-3), which were sampled in March 2002. During the second phase of assessment at the properties, a total of 12 HydroPunch borings (6 at each property) were drilled to further delineate the hydrocarbon impacts. The sample points and well locations are shown on Figures 2 and 3.

This report, which was prepared by Shaw on behalf of the LACDPW, describes the environmental setting of the site, the available background information, the field activities performed, and the sampling strategy and methodology. Also presented herein are a discussion of analytical the results and recommendations for additional assessment and remediation, if required.

The site assessment was performed to meet the requirements outlined in the LACDPW's *Guidelines for Report Submittals* dated March 1991 and revised in June 1993. The guidance document sets forth the tasks, protocols, and background investigation that are required for site assessments. This Site Assessment Report and Remedial Action Plan is intended to meet these requirements.

2.0 BACKGROUND

2.1 Site Description

The Marina Del Rey Sheriff's Station, located in western Los Angeles County, provides police services for the surrounding unincorporated County area and operates six patrol boats in the harbor waters (Los Angeles County Sheriff's Department, 2001). The site, as discussed in this work plan, consists of two facilities: 13483 Fiji Way (Dock 52), which includes a maintenance building, several office trailers, and a maintenance and storage yard (Figure 2); and the Sheriff's Station facility at 13851 Fiji Way, which includes a dock, sheriff's station, and parking lot (Figure 3).

2.2 Site Setting

The facilities are located within Township 2 South, Range 15 West, Section 13, as shown on the Venice 7.5-minute quadrangle map (U.S. Geological Survey [USGS], 1964). The subject properties are situated on an east to west-trending spit of land separating the Marina Del Rey Harbor from Ballona Creek to the south. They have an average surface elevation of approximately 15 feet above mean sea level. The topography slopes gently northward toward the harbor.

2.2.1 Regional Geology

The facilities are located less than 0.5 mile north of the Ballona Creek. They are in the Ballona Gap, in the southern portion of the Santa Monica Basin. Surficial sediments at the site consist of Quaternary alluvium, which is composed of unconsolidated floodplain deposits of gravel, sand, silt, and clay. The El Segundo Sand Hills and Ballona Escarpment lie south of the site and the Ocean Park Plain lies to the north. The El Segundo Sand Hills are composed of fine to medium sand with silt and occasional gravel lenses (DWR, 1961).

2.2.2 Site Geology

The facilities are located on Quaternary alluvium, which consists primarily of stream-deposited gravel, sand, silt, and clay with some interbedded littoral and estuary or bay deposits near the ocean. Quaternary alluvium in the site vicinity reaches a maximum thickness of approximately 90 feet. The Quaternary alluvium is underlain by the Ballona aquifer, which consists of Recent to late Pleistocene coarse sand, rounded to sub-rounded gravel, and cobbles up to 5 inches in diameter that are of both granitic and metamorphic in origin. The Ballona aquifer is approximately 40 feet thick inland, but is thought to be less than 10 feet thick in the site vicinity. The Ballona aquifer is underlain by the Pleistocene San Pedro Formation and Pliocene age sediments of the Pico Formation (DWR, 1961).

2.2.3 Hydrogeology

The facilities are located in the Ballona Gap, a low-lying region in the southern portion of the Santa Monica Basin. Groundwater occurs in all sediments of the Santa Monica Basin from Quaternary alluvium to deposits of lower Pleistocene age. Groundwater in the Santa Monica Basin moves mainly toward the south. North of Ballona Creek, minor subsurface groundwater flow toward the ocean may occur (DWR, 1961).

During the tank removals in 1998, shallow groundwater was first encountered at 5 to 6 feet below ground surface (bgs) at both properties (TEM, 1999).

2.3 Site History

Limited environmental sampling was performed during the removal of the USTs at the subject properties. The areas of concern included the USTs that served the vehicle fueling stations at both properties.

2.3.1 Dock 52 (13843 Fiji Way)

In December 1998, two 1,000-gallon spherical, fiberglass gasoline USTs were removed as a part of the LACDPW UST Compliance Program (TEM, 1999). The piping and dispensers were also removed. At the time of the investigation, the USTs were reportedly in good condition and no obvious signs of leakage were noted.

Several soil samples (samples 1A, 2A, D1, and P1) were collected for analysis during the UST removal activities (Figure 2). The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHG); organic lead; benzene, toluene, ethyl benzene and total xylenes (BTEX); and methyl tert-butyl ether (MTBE) using United States Environmental Protection Agency (USEPA) Method 8015M, the Department of Health Services Leaking Underground Fuel Tank (DHS/LUFT) Method, and USEPA Method 8021B, respectively. Groundwater was encountered during the UST removal at approximately 5 to 6 feet bgs. Two soil samples (samples 1A and 2A) were collected approximately 2 feet below each tank invert, at a depth of 12 feet bgs. One soil sample (sample D1) that was collected 3 feet below the former dispenser, contained TPHG concentration of 1,060 mg/kg. Other detected compounds are shown in Table 1. The excavated soil was removed and disposed of off site.

2.3.2 Sheriff's Station (13851 Fiji Way)

In December 1998, four underground storage tanks were removed at the request of the LACDPW (CKY, 1999). The tanks included three 1,500-gallon steel gasoline tanks and one 1,000-gallon steel diesel fuel tank. The USTs were reportedly corroded and had visible holes. Some of the associated piping was removed, and the rest was abandoned in place. The excavation was backfilled with gravel and aggregate base, and repaved.

Soil samples were not collected from beneath the tank excavation because shallow groundwater was encountered and the area was presumed to be contaminated. The stockpiled soil was sampled and analyzed for total petroleum hydrocarbons (TPH) by USEPA Method 418.1, TPHG by Method 8015M, BTEX by Method 8020, and lead using Method 8021. The analytical results confirmed that the soil was contaminated with petroleum hydrocarbons. The excavated soil was transported to an off-site recycling facility.

3.0 SCOPE OF WORK

The primary objective of the site assessment was to determine the nature and extent of petroleum hydrocarbon contamination associated with the former diesel and gasoline USTs and to evaluate the need for further investigation or site clean up.

3.1 Work Performed

Field activities were performed on December 17, 2001; March 4, 5, and 27, 2002; and September 27, 2002. The work performed is described below.

3.1.1 Dock 52

The site assessment activities included collecting soil vapor samples from eight locations (SG-10 through SG-17) at depths ranging from 3 to 5 feet bgs, and drilling and sampling four soil borings (SB-4 through SB-7). All of the borings completed at Dock 52 were advanced using direct push (Geoprobe) techniques. The soil borings were drilled to depths ranging from 16 to 21 feet bgs in the immediate vicinity of the former gasoline USTs to determine the lateral and vertical extent of petroleum hydrocarbon impacts to soil in this potential source area (Figure 2). Soil samples were collected from the borings at depths of 5, 10, 15 and 20 feet bgs (SB-4, SB-6, and SB-7) and 5, 10, and 15 feet bgs (SB-5).

3.1.2 Sheriff's Station

The assessment activities at this property included collecting soil vapor samples from nine locations (SG-1 through SG-9) at depths ranging from 3 to 5 feet bgs, drilling and sampling six soil borings (SB-1 through SB-3 and MW-1 through MW-3), and converting borings MW-1 through MW-3 into groundwater monitoring wells. The six soil borings were drilled in and around the former UST locations as shown on Figure 3. Borings SB-1 through SB-3 were advanced using Geoprobe techniques, while borings MW-1 through MW-3 were advanced using hollow-stem auger equipment. The soil borings were drilled to depths ranging from 16 to 21.5 feet bgs in the immediate vicinity of the former gasoline and diesel USTs to determine the lateral and vertical extent of petroleum hydrocarbon impacts to soil in these potential source areas (Figure 3). Soil samples were collected from borings SB-1 and SB-2 at depths of 5, 10, 15 feet, and soil samples were collected from the remaining borings at depths of 5, 10, 15, and 20 feet bgs. Monitoring wells MW-1 through MW-3 were installed to evaluate groundwater impact beneath the site.

3.2 Deviations From Workplan

Whenever possible, the site assessment activities were performed consistent with the proposed scope of work. In a few instances, the scope of the workplan had to be altered due to site access issues, lithology, and the presence of shallow groundwater. The scopes of work as proposed in the Environmental Site Assessment Workplan (IT, November 2001) and the deviations from the workplan are discussed below.

3.2.1 Dock 52

As proposed in IT's Environmental Site Assessment Workplan, assessment of this property was to include the following activities:

- Collecting ten (10) soil vapor samples at five (5) feet bgs
- Drilling four (4) soil borings for the collection of soil samples

The direct push borings at this property (SB-4 through SB-7) were generally advanced to 1 foot below their target depth of 20 feet bgs to recover an adequate amount of soil for logging and analysis. However, due to difficult drilling at approximately 15 feet bgs, boring SB-5 was advanced and sampled to a depth of only 16 feet.

Ten soil vapor locations were proposed for this property. However, two of the ten proposed locations were not accessible with the drill rig due to space constraints and were not sampled. Additionally, the soil vapor samples were collected from depths ranging from 3 to 5 feet bgs (rather than the proposed depth of 5 feet bgs) due to the presence of shallow groundwater at some of the locations.

Most of the sample locations were changed because of above ground access constraints and underground utilities. The revised locations were selected to provide adequate coverage of the assessment area.

3.2.2 Sheriff's Station

As proposed in IT's Environmental Site Assessment Workplan, assessment of this property was to include the following activities:

- Collecting ten (10) soil vapor samples at five (5) feet bgs
- Drilling five (5) soil borings for the collection of soil samples
- Drilling one (1) slant soil boring for the collection of soil samples

- Converting three (3) of the six soil borings to groundwater monitoring wells

- Collecting groundwater samples from the newly-installed groundwater monitoring wells

The proposed slant boring was intended to assess soil beneath an existing 500-gallon diesel above-ground storage tank that replaced a 1,000-gallon diesel UST in approximately the same location. The slant boring was not completed due to the necessity for the drill rig to partially block the street at the marked location. Since a traffic control plan and additional permits would have been necessary to drill the slant boring as marked, and moving the boring to another location would have required additional utility clearances, a replacement vertical direct-push boring (SB-3) was drilled immediately adjacent to the above-ground storage tank (Figure 3).

Many of the sample locations were changed because of above ground access constraints and underground utilities. In addition, only nine of the twelve proposed soil vapor locations were sampled at this property because four of the proposed locations were inadvertently located in the dock area. One of the locations proposed for the dock was relocated to the vicinity of the three gasoline USTs, and the remaining dock locations were eliminated. All revised locations were selected to provide adequate coverage of the assessment area.

The completed soil vapor sample locations (SG-1 through SG-9) were drilled to depths ranging from 3 to 5 feet bgs rather than the proposed 5 feet bgs. This was due to shallow groundwater encountered at 3 to 5 feet bgs during drilling. All direct push borings at the Sheriff's Station were completed to 1 foot below their proposed depths to recover an adequate amount of soil for logging and analysis.

Before conducting field activities, a permit to operate was obtained from the Los Angeles County Department of Beaches and Harbors (LACDBH). This permit limited the use of noise-producing heavy equipment at 13851 Fiji Way due to the proximity of a known nesting area for Great Blue Herons. The herons nest in trees at the neighboring Via Venetia apartment complex, located approximately 200 feet south-southwest of the drilling site.

During drilling activities and well development and sampling activities, noise monitoring was conducted at three locations: adjacent to the work area, near the base of the trees that contained the heron nests, and at a location approximately halfway between the work area and the nests. A hand-held sound level meter was utilized to record noise levels at these locations. Additionally, a visual monitoring program was also conducted at the same three locations during the noise monitoring. The herons were watched for any signs of alarm or disturbance during on-site activities. Noise levels at the base of the nesting trees during drilling activities were similar to baseline levels taken before drilling activities, and the herons did not appear to be disturbed. Noise readings and visual monitoring observations recorded during drilling activities are provided in Appendix A.

3.2.3 Both Facilities

The original scope of work did not include the drilling of 12 additional soil borings at both properties for the collection of soil and groundwater samples using HydroPunch techniques. However, the soil and groundwater analytical results for borings SB-1 through SB-7 and wells MW-1 through MW-3 indicated the presence of hydrocarbon impact at both properties. Typically, regulatory agencies require the delineation of subsurface contamination at petroleum hydrocarbon-impacted sites. Therefore, Shaw proposed to drill 12 HydroPunch borings (6 at each site) and collect soil and groundwater samples to further delineate the extent of impact. The additional borings were completed following the approval of the LACDPW.

4.0 DRILLING AND SAMPLE COLLECTION

4.1 Utility Clearance

On November 26, 2001, a geophysical survey was conducted to determine if subsurface utilities or other substructures were present in the vicinity of the proposed drilling locations. The proposed sample locations were marked with paint, after which a utility locating subcontractor surveyed the locations using geophysical techniques including electromagnetic and other methods. In addition, Underground Service Alert (USA) was contacted to notify public utilities that may have buried lines in the area. The utility representatives performed their own utility surveys in the site vicinity. In addition to the geophysical utility clearance, all borings were carefully advanced by hand augering to an approximate depth of 5 feet before drilling commenced.

4.2 Soil Vapor Sampling

Soil vapor samples were collected from each of the two properties at the locations shown on Figures 2 and 3. A 1.75-inch-diameter hole was created at each sample location using a direct-push drill rig. The holes were advanced to a depth of approximately 3 to 5 feet below ground surface. A length of ¼-inch-diameter polyethylene tubing that was manually slotted to form a screened interval over the lowermost 8 to 10 inches was fed into the hole until it touched the bottom. A 1-inch metal screw was inserted into the bottom of the tubing before the tube was lowered into place. The top of the tubing was extended approximately 12 inches above ground surface. Once the tubing was emplaced, approximately 12 inches of medium-grained sand (#3) were placed down the hole to form a filter pack, and the overlying annular space was sealed with hydrated granular bentonite. The bentonite sealed the hole from the atmosphere, and sampling was initiated within a few minutes.

Before a sample was collected, a pump was connected to the exposed end of the tubing, and three tubing volumes of soil vapor were purged. The purge volume was determined based on the results of a site-specific purge test. Following purging, the samples were collected using a gas-tight syringe. The vapor samples were not allowed to contact brass or metal surfaces during the sample collection process. After each soil vapor sample was collected, it was immediately delivered to the on-site mobile laboratory for VOC analysis.

4.3 Soil Sampling

Soil samples were collected using either direct-push and split-spoon sampler equipment. These methods are described below, along with the sample preparation and handling methods.

4.3.1 Direct-Push Sampling

Soil samples from borings SB-1 through SB-7 and borings SB-18 through SB-29 were collected using truck-mounted, direct-push (Geoprobe) sampling equipment. Direct-push sampling often is more efficient than hollow-stem auger drilling, because it minimizes the amount of soil cuttings that are generated. The direct-push sampling system consisted of a 1.75-inch diameter sample barrel that was fitted with brass sample liners (borings SB-1 through SB-7) or a 1.25-inch diameter sample barrel fitted with acetate liners (SB-18 through SB-29) that were pushed or driven into the ground. Once the sample barrel was retrieved from the hole, soil from the sample liners was extruded for soil description and field screening for VOCs using a photoionization detector (PID) as described in Section 4.3.4 below. The soil remaining in the sample liners was retained for laboratory analysis. Soil was collected in plastic EnCore® samplers from the end of the sample liner. The liner ends were then covered with Teflon® sheets and secured with plastic caps, and the EnCore® samplers were also capped. The liners and EnCore® samplers were then labeled and placed on ice for transport to the laboratory.

4.3.2 Split-Spoon Sampling

The three soil borings at the Sheriff's Station that were converted into groundwater monitoring wells were drilled using hollow-stem auger equipment. Soil samples were collected for geologic logging and chemical analysis using a California-modified split-spoon sampler equipped with stainless steel liners. The sampler was driven into the undisturbed soil ahead of the lead auger, and then retracted from the borehole. Upon retrieval, the liners were removed from the sampler, and two of the liners were used for soil description and field screening for VOCs using a PID (Section 4.3.4). The soil in the remaining liner was retained for chemical analysis. Soil was collected in plastic EnCore® samplers from the end of the stainless steel sample liner. The liner ends were then covered with Teflon® sheets and secured with plastic caps, and the EnCore® samplers were also capped. The liners and EnCore® samplers were then labeled and placed on ice in a chilled container for transport to the laboratory.

4.3.3 Sample Intervals

Soil samples collected using hollow-stem auger and Geoprobe equipment were retained for chemical analysis at 5-foot depth intervals to the total depth of each boring (approximately 15 to 20 feet bgs). The depths of soil samples collected from the HydroPunch borings (SB-18 through SB-29) were selected based on the depths of the most impacted samples collected from borings SB-1 through SB-7 and MW-1 through MW-3. In general, the most impacted samples collected during the initial phase of assessment were collected from 10 feet bgs at both sites. However, at the Sheriff's Station, the HydroPunch boring soil sample depths had to be adjusted based on site topography. For instance, the ground surface at sample points SB-26 and SB-27 was approximately 3 feet lower than the ground surface at the driveway where the initial assessment borings were drilled; therefore, the soil samples at SB-26 and SB-27 were collected at a depth of approximately 7 feet bgs to account for the difference in elevation. Likewise, the ground surface at borings SB-28 and SB-29 was approximately 2 feet higher than the ground surface at the initial assessment boring locations, so the samples at borings SB-28 and SB-29 were collected from depths of approximately 12 feet bgs. Each of the HydroPunch boring soil samples collected at Dock 52 were collected at 10 feet bgs, since the ground surface at that property is relatively flat.

4.3.4 Geologic Logging and Field Screening

Soil samples that were not retained for chemical analysis were extruded from the sample liners for geologic logging and headspace analysis. A detailed log of each exploratory boring was recorded by a Shaw geologist. Soil samples were logged according to the Unified Soil Classification System (ASTM D 2488). Visual and olfactory observations were also noted on the boring logs. Copies of the boring logs are provided in Appendix B.

Representative soil from each sample interval was field-screened for VOCs by headspace analysis with a PID. For the headspace readings, approximately 200 grams of soil was sealed in a plastic bag. After the soil was allowed to stabilize for approximately 20 minutes, the tip of the PID probe was inserted through the bag. The measured concentrations of VOCs within the headspace were recorded on the boring log. The PID was calibrated at the beginning of each field day to 100 parts per million by volume (ppmv) isobutylene gas.

4.4 Boring Abandonment

The completed direct-push boreholes were backfilled with bentonite chips and hydrated. The surface at each boring location was repaired with quickset concrete or asphalt as appropriate. Borings MW-1 through MW-3 were converted into groundwater monitoring wells as described below.

4.5 Monitoring Well Installation, Development, and Survey

Hollow-stem auger borings MW-1 through MW-3 were converted into groundwater monitoring wells. These borings were terminated at a depth of 21.5 feet bgs, approximately 15 feet below the static water table. The final boring depth was determined based on the depth to water and the geologic materials encountered during drilling. The borings were converted into groundwater monitoring wells by installing 2-inch diameter, Schedule 40, flush-threaded polyvinyl chloride (PVC) casing with 0.020-inch factory slotted screen. The annular space surrounding the casing was filled to approximately 1 to 2 feet above the top of the screen with the filter pack material (Monterey #2/12 sand), and the filter pack was covered with a bentonite seal at least 1 foot thick. The remaining annular space was filled with a cement/bentonite grout. The top of the well casing was covered with a locking cap and enclosed by a flush-mount, water-tight, traffic-rated steel vault box set in concrete. A detailed groundwater monitoring well construction log is provided on each boring log in Appendix B.

On March 18, 2002, the three new wells were developed using a submersible pump. Before developing the wells, the depth to groundwater from the top of the well casing was measured to within 0.01 foot using an electronic water level indicator and recorded. During pumping, purged water was monitored for temperature, pH, and specific conductance. Once these parameters stabilized, development was considered complete and the water level was allowed to recover to static conditions. The well development logs are provided in Appendix C.

The locations and top-of-casing elevations of the three new wells were surveyed using Global Positioning System (GPS) equipment on March 18, 2002. The top-of-casing elevations were measured with respect to mean sea level (MSL). The casing elevations, measured depths to water, and groundwater elevations are summarized on Table 2.

4.6 Groundwater Sampling

Sampling of the new wells was performed on March 27, 2002. Prior to sampling, the wells were purged a minimum of three well volumes to ensure that the purged water was representative of aquifer conditions. A groundwater sample was collected from each well using a disposable Teflon® bailer. The samples were collected in volatile organic analysis vials (VOAs) with a hydrochloric acid preservative.

HydroPunch groundwater samples were collected from borings SB-18 through SB-25, and SB-27 through SB-29 on September 27, 2002. No groundwater sample was collected from boring SB-26 due to poor groundwater recovery from the geologic materials at that location. The HydroPunch groundwater samples were collected by attaching a steel check valve at the bottom of a length of ¼-inch diameter Teflon® tubing, and inserting the tubing into the borings after groundwater was encountered. The tube was then repeatedly raised and lowered incrementally, causing groundwater to flow up through the check valve and into the tubing. Once groundwater in the tubing reached the surface, the groundwater samples were collected in VOAs directly from the exposed end of the tubing.

After collection, each of the groundwater sample containers was labeled, placed on ice, and transported to a State-certified laboratory along with appropriate chain-of-custody documentation. The samples were collected in the manner prescribed by the *Guidelines for Report Submittals* (LACDPW, 1991).

4.7 Investigation Derived Waste

Investigation-derived waste (IDW) generated during the drilling and sampling of wells MW-1 through MW-3 included soil cuttings, equipment cleaning effluent, and purged groundwater. IDW was temporarily stored at a secure on-site location in 55-gallon U.S. Department of Transportation (DOT)-approved drums pending characterization for disposal. Once the appropriate disposal method was determined based on the analytical results, the IDW was transported off-site as non-hazardous waste. Soil cuttings were transported to American Remedial Technologies in Lynwood, California, and cleaning effluent and groundwater were transported to Crosby and Overton Environmental Services in Long Beach, California. Copies of the non-hazardous waste manifests are included in Appendix E. Descriptions of specific waste streams are provided in the following sections.

4.7.1 Soil Cuttings

Soil cuttings generated during the hollow-stem auger drilling and soil sampling activities were temporarily stored on site in 55-gallon DOT-approved drums. The drums were labeled to indicate the source of the soil (i.e., the boring number). The direct-push sampling method did not generate any soil cuttings. The soil was profiled for disposal using analytical data for samples collected from the borings and the drums.

4.7.2 Fluid Wastes

The need for equipment decontamination was minimized by the use of direct-push drilling techniques for soil matrix sampling. The direct-push rig used during this investigation was equipped with a self-contained decontamination system, which was used to decontaminate the sampling equipment. The hollow-stem auger rig used during this site assessment was equipped with a steam-cleaning trailer, where the augers and sampling equipment were decontaminated. Fluid waste generated during the decontamination activities and purge water generated during the development and sampling of wells MW-1 through MW-3 were placed in 55-gallon drums as previously discussed. The fluid wastes were profiled for disposal using analytical data for water samples collected from the drums and groundwater samples collected from well MW-1.

4.8 Sample Documentation and Shipment

Chain-of-custody protocol was followed for all soil and groundwater samples selected for laboratory analysis. The samples were collected in pre-cleaned containers (brass and acetate sleeves, EnCore® samplers, and VOAs), properly labeled, and placed in iced coolers for transport to the analytical laboratory. The sample labels contained the following information: project number, sample number, collection date, analytical parameter(s), and method of preservation. This information was also included on the chain-of-custody forms, which accompanied the samples from the site to the laboratory to provide a record of continuous possession. Copies of the chain-of-custody forms are provided in Appendix D.

5.0 FINDINGS

5.1 Soil

5.1.1 Dock 52

The geologic materials encountered during the investigation at this property consisted primarily of sand, sand with silt, and silty sand in the upper 7.5 to 13 feet of the soil column in each of the borings (SB-4 through SB-7 and SB-18 through SB-23). Below this unit, a silty clay unit was encountered to the total depth explored at this property (approximately 21 feet). Given the relatively homogeneous nature of the soil type, a geologic cross section was not prepared for this property.

A faint hydrocarbon odor was noted only in the 5-foot sample from boring SB-5. Odors were not noted in any of the other borings drilled at this property. The PID readings from the soil samples collected at this site were low, ranging from 0.0 ppmv to 33.5 ppmv in the 5-foot sample from SB-5. Boring logs for each of the borings drilled at this property are included in Appendix B.

5.1.2 Sheriff's Station

The geologic materials encountered at this property consisted primarily of silty clay to the total depth explored near the former UST locations (21.5 feet). Zones of silty sand were encountered at approximately 12.5 to 17.5 feet in boring MW-1, and at approximately 13 feet to the total depth of boring SB-1 (16 feet). Figure 4 is a geologic cross section showing the distribution of geologic materials between borings SB-24 and SB-26.

In the outlying HydroPunch borings (SB-24 through SB-29), the geological materials encountered were considerably more coarse-grained, consisting of sand with silt and silty sand to the total depth explored at these borings (approximately 20 feet bgs).

Hydrocarbon odors were noted in the 5- and 20-foot samples from boring MW-1, in the 5-foot samples from borings MW-1, MW-3, and SB-3, and in the 5- and 10-foot samples from SB-1 and SB-2. No odors were noted in the soil samples collected from boring SB-4 or the HydroPunch borings. The PID readings from soil collected at this property were low to moderate, ranging from 0.0 to 475 ppmv in the 5-foot sample from boring SB-1. Boring logs for each of the borings drilled at this property are included in Appendix B.

5.2 Groundwater

The static depths to groundwater measured in wells MW-1 through MW-3 on March 27, 2002 ranged from 3.04 feet in well MW-1 to 7.70 feet in well MW-3 (Table 2). The groundwater flow direction was to the east at a gradient of approximately 0.06 foot per foot (ft/ft, Figure 6). A conservative estimate of the groundwater flow velocity can be calculated by estimating the hydraulic conductivity and porosity of the most permeable geologic material encountered in the saturated zone. Based on the sand with silt and silty sand units encountered during drilling, an average porosity (n) of 35 percent and a hydraulic conductivity (K) of 10^{-3} centimeters per second can be estimated. Using the equation $V = Ki/n$, the groundwater gradient (i) of 0.06 ft/ft translates to a groundwater flow velocity (V) of approximately 180 feet per year.

The depths to first encountered groundwater at Dock 52 ranged from 4.5 feet bgs in borings SB-18 through SB-21 to 6.5 feet bgs in borings SB-22 and SB-23. Based on these measurements, the groundwater flow direction at Dock 52 appears to be to the east-northeast.

5.3 Analytical Results

The samples collected during this investigation were submitted to two different state-certified analytical laboratories. The soil vapor samples were analyzed on site using a Centrum Analytical Laboratories mobile laboratory. The soil and groundwater samples were submitted to American Scientific Laboratories, LLC in Los Angeles, California. All samples were submitted to the laboratories for analysis by USEPA methods using the method-specified handling, preservation, transportation, and chain-of-custody protocols described in Section 4.8. All laboratory analyses were performed according to Laboratory Requirements, Appendix D of *Guidelines for Report Submittals* (LACDPW, 1991). Groundwater, soil vapor, and soil analytical results are presented in Tables 2, 3, and 4, respectively, and the soil and groundwater analytical results are illustrated on Figures 5 and 6. The certified analytical reports and chain-of-custody documentation are included as Appendix D.

The soil vapor samples were analyzed for VOCs using USEPA Method 8260B. All soil samples were analyzed for BTEX, MTBE, and other fuel oxygenates using USEPA Method 8260B/5035. Soil samples collected from the borings nearest the former diesel UST (SB-3 and MW-2) were analyzed for TPHD and total petroleum hydrocarbons as oil (TPHO) using USEPA Method 8015M. All other soil samples were analyzed for TPHG by Method 8015M. Groundwater samples were analyzed for TPHG by Method 8015M and VOCs by USEPA Method 8260B. Additionally, the groundwater samples from wells MW-1 through MW-3 were analyzed for TPHD and TPHO using USEPA Method 8015M.

5.3.1 Soil Vapor

5.3.1.1 13483 Fiji Way (Dock 52)

As shown on Table 3, four of the eight soil vapor samples collected from this property contained fuel hydrocarbon vapors above their respective method detection limits (MDLs). BTEX and MTBE were detected in one or more samples. The four impacted samples (SG-14 through SG-17) were collected in the northeastern portion of the investigated area.

5.3.1.2 13851 Fiji Way (Sheriff's Station)

Only the samples collected from probes SG-5, SG-6, SG-8, and SG-9 at this property contained VOCs at concentrations above the MDLs (Table 3). Benzene, toluene, ethylbenzene, and MTBE were detected in one or more samples. The four impacted samples were collected in the western portion of the former gasoline UST area.

No other fuel hydrocarbons or VOCs were detected in soil vapor at either property.

5.3.2 Soil

5.3.2.1 Dock 52

A total of four direct-push soil borings (SB-4 through SB-7) and six HydroPunch borings (SB-18 through SB-23) were completed at Dock 52. Each soil sample collected from these borings was analyzed for TPHG using USEPA Method 8015M, and for BTEX and fuel oxygenates using USEPA Method 8260B/5035. The soil analytical results are summarized in Table 4, and the analytical results for saturated zone soil at this property are presented on Figure 5.

TPHG was detected in a total of five soil samples at this property. The maximum TPHG concentration was 493 mg/kg, measured in the 5-foot sample from boring SB-7. Benzene was detected in two soil samples, with a maximum concentration of 0.004 mg/kg (SB-4 at 10 feet). MTBE was present in samples from borings SB-4 through SB-7, and in the soil samples collected from HydroPunch borings SB-18, SB-22, and SB-23. The detected MTBE concentrations ranged from 0.005 mg/kg in the 15-foot sample from SB-6 to 1.970 mg/kg in the 10-foot sample from SB-23.

The other constituents detected in soil at Dock 52 and their maximum concentrations are summarized as follows:

- Ethylbenzene: 6.36 mg/kg (SB-7 at 5 feet).

- O-xylene: 0.232 mg/kg (SB-7 at 5 feet)

- M- and p-xylenes: 6.1 mg/kg (SB-7 at 5 feet)

- TBA: 0.242 mg/kg (SB-23 at 10 feet)

- TAME: 0.008 mg/kg (SB-23 at 10 feet)

No other fuel hydrocarbons or oxygenates were present in the soil samples collected at this property.

5.3.2.2 Sheriff's Station

A total of three direct-push soil borings (SB-1 through SB-3), three hollow-stem auger borings (MW-1 through MW-3), and six HydroPunch borings (SB-24 through SB-29) were completed at the Sheriff's Station. With the exception of borings MW-2 and SB-3, each soil sample collected from these borings was analyzed for TPHG using USEPA Method 8015M. The soil samples collected from borings MW-2 and SB-3 were analyzed for TPHD and TPHO by Method 8015M. In addition, all of the soil samples collected at this property were analyzed for BTEX and fuel oxygenates using USEPA Method 8260B/5035. The soil analytical results are summarized in Table 4, and the analytical results for saturated zone soil at this property are presented on Figure 6.

TPHD and TPHO were not detected in any of the soil samples from borings MW-2 and SB-3, drilled adjacent to the former diesel UST (Figure 6). TPHG was present in samples from borings SB-1, SB-2, SB-27, MW-1, and MW-3 at concentrations ranging from 1.1 mg/kg (SB-1 at 15 feet) to 407 mg/kg (MW-3 at 10 feet).

Benzene was detected in samples from borings SB-1, SB-2, SB-3, SB-27, MW-1, and MW-3 at concentrations ranging from 0.005 mg/kg (MW-1 at 20 feet) to 6.7 mg/kg (MW-3 at 10 feet). MTBE was present in samples from borings SB-1 through SB-3 and MW-1 through MW-3, and in the soil sample collected from HydroPunch boring SB-27. The detected MTBE concentrations ranged from 0.009 mg/kg (SB-3 at 20 feet) to 7.1 mg/kg (MW-1 at 5 feet).

The other constituents detected in soil collected at the Sheriff's Station and their maximum concentrations are summarized on Table 4 and as follows:

- Ethylbenzene: 15.4 mg/kg (MW-3 at 10 feet)

- Toluene: 0.12 mg/kg (MW-1 at 5 feet)

- O-xylene: 0.210 mg/kg (MW-1 at 5 feet)

- M- and p-xylenes: 0.785 mg/kg (MW-1 at 5 feet)

- TBA: 0.229 mg/kg (SB-27 at 7 feet)
- DIPE: 0.046 mg/kg (MW-1 at 20 feet)
- TAME: 0.006 mg/kg (MW-1 at 20 feet)

5.3.3 Groundwater

Groundwater samples were collected from the newly installed monitoring wells on March 27, 2002, and from eleven of the twelve HydroPunch borings completed on September 27, 2002. Each groundwater sample was analyzed for TPHG by USEPA Method 8015M and VOCs by USEPA Method 8260B. The groundwater analytical results are summarized in Table 2, and on Figures 5 and 6.

5.3.4 Dock 52

Hydrocarbons were detected in only one groundwater sample collected at this property. The HydroPunch groundwater sample from boring SB-23 contained TPHG at a concentration of 2,340 µg/L. Benzene, ethylbenzene, and MTBE were also detected in this sample at respective concentrations of 150, 375, and 1,190 µg/L. No other fuel hydrocarbons were present in the groundwater samples collected at this property. The groundwater analytical results are presented on Table 2.

5.3.5 Sheriff's Station

Groundwater samples were collected from each of the monitoring wells (MW-1 through MW-3) and five HydroPunch borings (SB-24, SB-25, and SB-27 through SB-29) at this property. TPHG was detected in the groundwater samples from wells MW-1, MW-2, and MW-3 at respective concentrations of 4,240 µg/L, 3,440 µg/L, and 35,700 µg/L, and in the HydroPunch sample from SB-24 at a concentration of 97 µg/L. BTEX (one or more compounds) was present in the samples from wells MW-1 and MW-3. The benzene concentrations detected in groundwater were 393 µg/L (MW-1) and 4,050 µg/L (MW-3). Ethylbenzene and toluene were also detected in the samples from MW-1 and MW-3. The ethylbenzene concentrations were 69 µg/L (MW-1) and 1,390 µg/L (MW-3), and the toluene concentrations were 16 µg/L (MW-1) and 140 µg/L (MW-3). The sample from well MW-3 also contained o-xylene at a concentration of 335 µg/L and p-xylenes at a concentration of 1,140 µg/L. MTBE was detected in the groundwater samples from MW-1, MW-2, MW-3, SB-24, SB-25, and SB-27 at concentrations up to 3,620 µg/L (Table 2).

Several other VOCs were detected in the three groundwater samples collected from wells MW-1 through MW-3 during this site assessment. These detections are summarized below:

- Isopropylbenzene: MW-1 (18 µg/L), MW-2 (7.5 µg/L), and MW-3 (110 µg/L)
- Napthalene: MW-2 (6.0 µg/L) and MW-3 (155 µg/L)
- N-propylbenzene: MW-1 (48 µg/L), MW-2 (6.0 µg/L), and MW-3 (180 µg/L)
- Sec-butylbenzene: MW-1 (10 µg/L)
- 1,2,4-trimethylbenzene: MW-3 (775 µg/L)
- 1,3,5-trimethylbenzene: MW-3 (185 µg/L)

These six VOCs are common constituents of gasoline. Isopropylbenzene is added to fuel as an octane booster and is generally found only in higher octane gasoline.

6.0 DISCUSSION AND RECOMMENDATIONS

Based on the soil vapor, soil, and groundwater analytical results obtained during this investigation and observations made during drilling activities, soil and groundwater beneath the Sheriff's Station and Dock 52 have been significantly impacted as a result of leakage from the former gasoline UST systems. It should be noted that the soil vapor concentrations at both properties were generally non-detectable to low with a few exceptions. The soil vapor data likely provide only an estimate of the degree of impact at a given point rather than an accurate quantitative measure of impact.

6.1 Potential Source Areas

6.1.1 Former 1,000-Gallon Gasoline USTs – Dock 52

BTEX and/or fuel oxygenates were detected in 4 of the 8 soil vapor samples collected at this property. Overall, soil vapor sample SG-15 (collected at Dock 52) had the highest hydrocarbon concentrations. Given the location of the sample point (along the former product line leading from the fuel USTs to the dispenser [Figure 2]), this sample result may indicate a leak from the removed product piping at Dock 52.

The highest hydrocarbon concentrations in soil collected at Dock 52 were generally detected in boring SB-7, which was drilled immediately southwest of the former tank locations. As shown on Table 4, BTEX (one or more compounds) and/or MTBE were detected in 13 of the 21 soil samples collected at this property. Additionally, the fuel oxygenates DIPE, TAME, and/or TBA were detected in three of the soil samples collected from this facility. In general, the soil samples collected from the outlying areas (i.e., the HydroPunch samples) contained low or nondetectable hydrocarbon concentrations. Based on the assessment results, the extent of impacted soil has been adequately delineated.

Only HydroPunch groundwater sample SB-23 contained detectable concentrations of hydrocarbons. However, the benzene and MTBE concentrations in this sample (150 and 1,190 µg/L, respectively) were relatively high. Based on the assessment results, the extent of groundwater impact southwest of the former tank area has not been adequately delineated (Figure 5).

6.1.2 Former 1,500-Gallon Gasoline USTs – Sheriff's Station

The highest concentration of hydrocarbons in soil vapor at the Sheriff's Station was detected in soil vapor sample SG-8, which was collected at the former location of the westernmost UST. Samples SG-5, SG-6, and SG-9 also contained detectable concentrations of BTEX and/or MTBE. All of the impacted samples were collected in the western portion of the former tank complex. Since these sample points are located immediately above the former gasoline UST locations, these sample results may be indicative of a release from one or more of the western USTs.

TPHG was detected in one or more soil samples from each of the four borings located closest to the former gasoline USTs (SB-1, SB-2, MW-1, and MW-3). TPHG, BTEX, and MTBE concentrations in soil were generally highest in the upper 10 feet of soil, and decreased with depth. Overall, the highest concentrations in soil at the Sheriff's Station were detected in the samples from boring MW-3, which was drilled east of the former tank complex. In general, the soil samples collected from the outlying areas (i.e., the HydroPunch samples) contained low or nondetectable hydrocarbon concentrations. Based on the assessment results, the extent of impacted soil has been adequately delineated.

Groundwater samples collected from wells MW-1 through MW-3 indicate the presence of significant hydrocarbon impact in the vicinity of the former gasoline USTs at the Sheriff's Station. The sample from well MW-3 contained the highest concentrations of TPHG (35,700 μg/L), benzene (4,050 μg/L), and MTBE (3,620 μg/L). Hydrocarbon concentrations in outlying HydroPunch borings SB-24, SB-25, and SB-27 through SB-29 were generally low to non-detectable. Given the MTBE concentrations detected in HydroPunch borings SB-24 and SB-25, the extent of groundwater impact northeast of the former tank complex has not been adequately delineated.

6.1.3 Former 1,000-Gallon Diesel UST – Sheriff's Station

None of the groundwater or soil samples that were analyzed for TPHD contained detectable concentrations of TPHD. Therefore, it does not appear that this tank was a significant source of impact. No additional site assessment or remediation is recommended with respect to the former diesel tank.

6.2 Comparison to Regulatory Guidelines

6.2.1 Dock 52

None of the soil samples contained hydrocarbons at concentrations that exceeded their respective Preliminary Remediation Goals (PRGs) established by USEPA Region IX for residential soil.

The HydroPunch groundwater sample collected from SB-23 contained benzene and MTBE at concentrations that were approximately two orders of magnitude higher than their respective Maximum Contaminant Levels (MCLs) established for drinking water by the state of California (Table 2). Although these hydrocarbon concentrations exceeded the drinking water standards, groundwater at the site is probably brackish and is not likely to be used as drinking water.

6.2.2 Sheriff's Station

Benzene was detected in 15 of 26 soil samples collected from this property, and six of the detected concentrations exceeded the PRG of 0.6 mg/kg for benzene in residential soil (Table 4). Additionally, the ethylbenzene concentration in one sample (MW-3 at 10 feet) exceeded the residential soil PRG of 8.9 mg/kg. None of the soil samples collected at this property contained MTBE at concentrations that exceeded the California-modified PRG of 17 mg/kg for residential soil. No soil PRGs have been established for the other fuel oxygenates (DIPE, TAME, and TBA) detected during this assessment.

Each of the three detected benzene concentrations exceeded the California MCL of 1 µg/L. Additionally, the ethylbenzene concentration in the groundwater sample from MW-3 exceeded the ethylbenzene MCL of 700 µg/L, and five of the six detected MTBE concentrations in groundwater at this property exceeded the MCL of 13 µg/L for MTBE. Although these hydrocarbon concentrations exceeded the drinking water standards, groundwater at the site is probably brackish and is not likely to be used as drinking water.

6.3 Recommendations

Based on the field measurements and soil and groundwater analytical results obtained during this investigation, remediation of soil at the Sheriff's Station and groundwater at both properties may be required by the Regional Water Quality Control Board. However, if it can be demonstrated that the impacted groundwater is brackish, then the clean up goals may be raised, and remediation may not be required. At a minimum, additional assessment at both properties is warranted to delineate the extent of impact.

To complete plume delineation and determine the groundwater flow direction at Dock 52, Shaw recommends that three groundwater monitoring wells be installed at the locations shown on Figure 5. To complete plume delineation and confirm the HydroPunch results for groundwater samples at the Sheriff's Station, Shaw recommends that four groundwater monitoring wells be installed at the locations shown on Figure 6. The groundwater samples from both properties should be analyzed for TPHG, BTEX, and fuel oxygenates. In addition, the samples should be tested for salinity, total dissolved solids, and electrical conductivity to determine whether the water is brackish. A remedial action plan (RAP), if necessary, is included as Section 7.0 below.

7.0 REMEDIAL ACTION PLAN

This Remedial Action Plan (RAP) has been developed based on the results of the site assessment activities conducted at the site. The RAP was prepared to address the impacted soil and groundwater beneath the site and was designed to reduce residual and dissolved hydrocarbon concentrations to acceptable levels, if it is determined that the residual concentrations are above the RWQCB's clean up goals for the site.

The following sections present the RAP objectives, determination of clean up levels, remedial alternatives, field testing, conceptual remediation system design, remediation time frame, and implementation schedule.

The objectives of this RAP are to:

- Protect human health and the environment
- Control the migration of petroleum hydrocarbons to potential receptors
- Reduce the petroleum hydrocarbon concentrations in soil and groundwater to below established clean up levels
- Accomplish remediation in a timely and cost-effective manner and ultimately obtain site closure

7.1 Determination of Clean Up Levels

To protect current and future beneficial uses of groundwater in the vicinity of the site, soil and groundwater clean up goals will need to be established. If it is demonstrated that the groundwater is brackish, the RWQCB may approve elevated clean up goals for this site. Since groundwater samples from the site have not been analyzed for salinity, site-specific clean up goals are not being recommended at this time. However, the PRGs established by EPA Region 9 on October 1, 2002, can be used as a guideline for the minimum clean up levels for soil at this site, and the MCLs can be used as a guideline for the minimum groundwater clean up levels.

The residential soil PRGs, which are also presented on Table 4, are as follows:

Compound	Soil Concentration (mg/kg)
Total Petroleum Hydrocarbons	Not Established
Benzene	0.6
Toluene	520
Ethylbenzene	8.9
Xylenes	270
MTBE	17

The MCLs, which are also presented on Table 2, are as follows:

Compound	Groundwater Concentration (μg/L)
Total Petroleum Hydrocarbons	Not Established
Benzene	1.0
Toluene	150
Ethylbenzene	700
Xylenes	1,750
MTBE	13

Shaw recommends that the final clean up goals be established by the RWQCB following the collection of additional data to determine if the groundwater is brackish. In addition, if site remediation results in contaminant concentrations that reach asymptotic lows exceeding the clean up goals, then the RWQCB may issue a No Further Action Required letter.

7.2 Remediation Alternatives

Potential alternatives for soil and groundwater remediation were identified and screened against the remediation objectives for the site. The general alternatives and initial screening are presented below.

7.2.1 Soil

7.2.1.1 Dock 52

Soil remediation is not recommended at Dock 52. Although sample D1, which was collected during the tank removal activities in 1998, contained benzene and ethylbenzene at concentrations that exceeded the PRGs (Table 1), none of the soil samples collected during the 2002 assessment contained hydrocarbon concentrations above the PRGs. This indicates that soil impacts exceeding the PRGs are limited to the immediate vicinity of the former dispenser island location (Figure 2). Although soil remediation is not recommended, the proposed groundwater remediation method (see Section 7.2.2) will also reduce hydrocarbon concentrations in the shallow soil.

7.2.1.2 Sheriff's Station

Soil samples from five of the twelve soil sample locations at the Sheriff's Station contained benzene concentrations exceeding the PRG of 0.6 mg/kg. Therefore, the RWQCB may require soil remediation at this property. The following alternatives for soil remediation were evaluated:

- **No Action:** A "no-action" alternative would involve continued periodic sampling of soils and soil vapors. A no-action alternative is acceptable if petroleum concentrations in soil are below the clean up levels. *Implementation of the no-action alternative would not meet the remediation goals for site soils.*

- **Excavation and Off-Site Disposal:** Excavation and off-site disposal of petroleum-impacted soil followed by backfilling with clean material would meet the established clean up levels. Removal of all impacted soil would eliminate the risk of further hydrocarbon migration to groundwater and soil vapor. However, removal of petroleum-impacted soil may require removal of existing surface structures and the above ground tank. Impacted soil is also present at a depth of 10 feet across the majority of the site, and excavation of the deep impacted soil would require substantial shoring. Additionally, given the shallow depth to groundwater, management of groundwater flow into any excavation would likely be required. *Considering the potential disruption of removing the petroleum-dispensing structures and prohibitive costs, excavation and disposal of impacted soil is considered a less desirable alternative.*

- **Soil Vapor Extraction (SVE):** SVE is a widely used technology with a documented record of effectiveness in remediation of vadose zone soils. Due to the relatively low permeability in the soil nearest the former gasoline USTs (Figure 4), a large radius of influence (ROI) and high air flow rate for each SVE well is not expected. However, the ROI and air flow rate should be higher in the outlying SVE wells where the soils are significantly more coarse-grained. The installation and operation of an SVE system would have a minimal effect on site operations, compared to the excavation alternative. Based on Shaw's remediation experience at similar sites, the SVE system would be expected to achieve the clean up goals for soil in approximately 24 to 36 months. *Due to the proven success, relatively short treatment duration, and relatively lower costs, soil vapor extraction is the preferred soil remediation alternative for the Sheriff's Station.*

7.2.2 Groundwater

Both Dock 52 and the Sheriff's Station sites contained one or more dissolved hydrocarbon constituents above the MCLs (Table 2). Hydrocarbon impact in groundwater at Dock 52 was detected only in HydroPunch boring SB-23, but the extent of impact remains undetermined. At the Sheriff's Station, all three monitoring wells (MW-1, MW-2, and MW-3) contained hydrocarbon concentrations above the MCLs. The following alternatives for groundwater remediation, if necessary, were developed for both locations:

- **No Action:** A "no-action" alternative would involve continued periodic sampling of groundwater. The potential off-site migration of groundwater would not be controlled. *Implementation of the no-action alternative would not likely meet the remediation goals for site groundwater.*

- **Natural Attenuation:** Natural attenuation is a naturally occurring process that results in reducing dissolved contaminant concentrations primarily by natural biodegradation and other physical loss mechanisms, such as sorption, dilution, and dispersion. Natural bioremediation can occur in any environment that supports microbiological activity. The rate of biodegradation is site-specific and may be limited due to the lack of oxygen or inorganic nutrients, such as fixed nitrogen, an extreme pH, or limited contaminant bioavailability. *Natural attenuation is a cost effective alternative, however, due to the relatively high dissolved hydrocarbon concentrations at this site, this alternative, on its own, would not likely meet the remediation goal. This alternative will be implemented once dissolved concentrations have been substantially reduced using a more active remedial approach.*

- **Groundwater Pump and Treat:** A groundwater pumping system would recover dissolved-phase petroleum hydrocarbons from the groundwater and recover any free-phase hydrocarbons, if present. Recovered groundwater could be treated using a variety of methods, including air stripping, activated carbon, or direct treatment at a publicly owned treatment facility. The operating costs of a pump and treat system would be high relative to other remedial options, and the treatment time for the site could extend for several years. *A pump and treat system is a feasible, but less desirable, alternative due to the high cost and possible long-term operation.*

- **Air Sparging:** This technology involves the injection of atmospheric air into the groundwater, stripping volatile petroleum compounds from the groundwater, and releasing them as vapors into the vadose zone. Once in the vadose zone, the hydrocarbon vapors are removed through SVE. Air sparging also increases the dissolved oxygen in the impacted groundwater, increasing the oxygen available for aerobic bioremediation of petroleum hydrocarbons. Based on Shaw's experience with this technology at similar sites, the air sparging system should would be expected to achieve the clean up goals for groundwater within a 12- to

24-month period. *Due to the relatively short treatment duration and lower costs compared to a pump and treat system, air sparging is the preferred groundwater treatment alternative for both Dock 52 and the Sheriff's Station site. Although soil clean up at Dock 52 is not recommended, the SVE system will recover hydrocarbons from the soil as well as stripped volatile compounds generated as a result of air sparging. In addition, an SVE system would prevent stripped vapors from entering the maintenance building through the foundation of the building.*

7.3 Summary of Selected Remedial Alternatives

Soil: **13483 Fiji Way** – No Action
13851 Fiji Way – SVE

Groundwater: **13483 Fiji Way** – Air Sparging (combined with SVE)
13851 Fiji Way – Air Sparging (combined with SVE)

7.4 Field Testing

To implement the most effective remediation program possible, air sparging and SVE field design tests should be conducted at each of the facilities. The primary objective of the tests is to obtain site-specific data to design the air sparging/SVE system. Data from the tests would ultimately be used to determine the number and locations of remediation wells, extraction and injection equipment requirements, and selection of the proper vapor treatment system. The following sections provide description of these tests.

In order to conduct the proposed field tests, Shaw proposes to install one air sparge well and one SVE well within the hydrocarbon plume at each of the facilities. The sparge wells would be constructed of 1-inch Schedule 80 PVC pipe, installed to a total depth of 10 feet below the groundwater table (approximately 15 feet bgs). The bottom 2 feet of the sparge wells would consist of 0.010-inch, factory-slotted, PVC screen. The annular space would be filled with well-sorted sand from the bottom of the boring to approximately 2 feet above the top of the screened interval. A bentonite seal would be placed above the sand pack to within 1 foot of the ground surface. The sparge wells would be completed at the surface with a flush-mounted, traffic-rated vault box set in concrete.

The SVE wells would be constructed of 2-inch Schedule 40 PVC pipe installed at a depth of approximately 12 feet bgs. The bottom 10 feet (from 2 to 12 feet bgs) would be screened with a 0.010-inch, factory-slotted, PVC screen. Because no monitoring wells were installed at Dock 52, two monitoring points are proposed at this property to monitor the effects of air sparging and SVE during field testing. The monitoring points would be constructed similar to the proposed SVE wells. The locations of the proposed air sparge, SVE, and monitoring wells are shown on Figures 7 and 8.

7.5 Test Description

The field tests will be implemented in two phases: SVE-only and SVE with air sparging. The following is a brief description of the test procedure.

7.5.1 Phase 1 – SVE Only

The test consists of extracting soil vapors from an SVE well near the source area of the plume while monitoring the influence at nearby wells. Extracted vapors will be treated via an internal combustion engine or a thermal oxidizer and discharged to the atmosphere. During the SVE test, the following parameters will be measured and recorded:

- Vacuum at the extraction test well (recorded in inches of water column ["wc])
- Vacuum influence at nearby observation wells (recorded in "wc.)
- Flow rate of the extracted soil vapors (recorded in cubic feet per minute [cfm])
- Oxygen and carbon dioxide concentrations in the extracted soil vapors (recorded in percent by volume [%V])
- Hydrocarbon concentration in the extracted soil vapors (recorded in percentage parts per million by volume [ppmv])

During the SVE test, two samples of extracted vapors will be collected in Tedlar® bags for laboratory analysis. The first sample will be collected during the first 30 minutes of the test, and the second sample will be collected immediately prior to initiating air sparging. These samples will be submitted to a state-certified laboratory for analysis of BTEX, TPH, oxygen, methane, and carbon dioxide.

7.5.2 Phase 2 – SVE with Air Sparging

This phase of the test consists of injecting atmospheric air into the sparge well while extracting soil vapors from the vadose zone. Prior to air injection, depth to water, dissolved oxygen, and redox potential in the sparge and observation wells will be measured and recorded to establish baseline conditions. In addition to the field measurements described above, the following measurements will be collected during this phase:

- Pressure of injection (measured in pounds per square inch [psi])
- Flow rate of the injected air (cfm)
- Depth to water in saturated zone wells (measured in feet bgs)
- Pressure influence in the observation probes (measured in "wc)

- Dissolved oxygen concentration in groundwater at the observation wells (measured in milligrams per liter [mg/L])

- Redox potential in groundwater at the observation wells (measured in millivolts [mV])

During this phase of the test, one additional extracted soil vapor sample will be collected to monitor any increase in hydrocarbon concentrations due to air sparging. The sample will be submitted to a certified laboratory for analysis of BTEX, TPH, oxygen, methane, and carbon dioxide.

7.6 Conceptual Remediation System Design

The final remediation system design will primarily depend on the results of the proposed air sparge/SVE field tests. The following conceptual design of the proposed air sparge/SVE system is based previous assessment results, our experience with these technologies at other sites, and professional judgment.

As mentioned previously, a known nesting area for Great Blue Herons is present near the Sheriff's Station property. The herons nest in trees at the neighboring Via Venetia apartment complex, located approximately 200 feet south-southwest of the site. Given the sensitivity of the local community and their concern about adversely affecting the herons, it will likely be necessary to obtain a permit to operate from the LACDBH prior to installation of a treatment system at that site. The potential noise associated with such a treatment system may make such permitting difficult. In addition, it would likely be necessary to include supplementary noise-proofing to the treatment system design to obtain the necessary permit, if possible.

7.6.1 Number and Location of Remediation Wells

The number and locations of the air sparge and SVE wells will be primarily determined by the radius of influence and the extent of the hydrocarbon area of concern. The radius of influence for air sparging or SVE is site-specific and is determined by analyzing field test data. Based on the estimated extent of the hydrocarbon plume and our experience at other sites, we anticipate that a total of two air sparge wells and three SVE wells will be required at Dock 52, and that seven air sparge wells and eight SVE wells will be required at the Sheriff's Station. The anticipated locations of the remediation wells are shown on Figures 9 and 10.

7.6.2 Remediation Equipment

The remediation equipment will consist of an air compressor, a vacuum blower, and a vapor treatment system. The air compressor and vacuum blower will be designed based on field test data. The type of vapor treatment will depend on the hydrocarbon concentrations detected in the vapor samples collected during field testing. It is anticipated that vapor-phase carbon will be used at Dock 52. Due to higher hydrocarbon concentrations, a thermal/catalytic oxidation unit may be required for the Sheriff's Station.

7.6.3 Remediation Time

Based on Shaw's previous experience with air sparging at sites with similar saturated-soil conditions, petroleum hydrocarbon concentrations in site groundwater are anticipated to meet clean up goals in approximately 24 to 36 months.

7.6.4 System Operation and Maintenance

The air sparge/SVE remediation system will be checked periodically throughout the remediation process. Site visits will be conducted weekly during the first month of operation, every two weeks during the next two months, and monthly thereafter until the system is shut down. During each of the site visits, the following data will be collected:

- Injection pressure and flow rate in each air sparge well
- Groundwater parameters (dissolved oxygen, redox potential, and depth-to-water) in pre-selected monitoring points
- Vacuum, extraction flow rate, and hydrocarbon concentration at each SVE well
- Vacuum influence at the observation wells
- Flow rate and influent and effluent concentrations of the vapor treatment system
- Oxygen and carbon dioxide concentrations of the extracted soil vapors

7.6.5 Remediation Progress Evaluation and Reporting

Data collected during the site visits and groundwater monitoring and sampling results will be used to evaluate the progress of the remedial activities. Specific parameters that indicate the effectiveness of the remediation program include the following:

- Reduction in dissolved hydrocarbon concentrations in groundwater
- Increase in dissolved oxygen concentrations in groundwater
- Reduction in hydrocarbon concentrations in the extracted soil vapors

Field data analysis and groundwater sampling results will be incorporated into quarterly monitoring reports.

7.6.6 System Shutdown

Once petroleum hydrocarbon concentrations in groundwater have reached the clean up goals, the system will be turned off for one quarter and a round of confirmation groundwater sampling will be performed. If the hydrocarbon concentrations in the point-of-compliance samples are lower than the designated clean up goals, the system will be left off. If the samples exceed the clean up goals, the system will be operated for another quarter. Following the additional quarter of operation, the above closure methodology will be repeated.

Once the confirmation groundwater sample analytical results meet the clean up goals, four quarters of post-remediation groundwater sampling will be performed to confirm achievement of the clean up goals. A final report will then be prepared describing the final sampling results and recommending site closure.

7.6.7 Schedule for Implementation of the RAP

A schedule for implementing the proposed RAP is provided in the table below.

Task	Completion Schedule
Remedial Action Plan Approval	Week 0
Air Sparge and SVE Well Installation / Field Testing	Week 6
Final System Design	Week 12
Permitting	Week 16
Equipment Procurement	Week 18
System Installation	Week 20
System Startup	Week 24

The schedule specified above is based on certain time-sensitive assumptions, including permit approvals, contractor availability, and weather.

8.0 REFERENCES

American Society for Testing and Materials (ASTM), 1984. *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).* Designation D 2488-84. Approved October 3, 1984

California Department of Water Resources (DWR), 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A Ground Water Geology. Bulletin 104.* State of California Department of Water Resources, Southern District.

CKY Inc., 1999. *Report on an Underground Storage Tank Removal at Los Angeles Count Sheriff's Station – Marina Del Rey Station.* Prepared for Los Angeles County Department of Public Works. CKY Incorporated. June 1999.

Los Angeles County Department of Public Works (LACDPW), 1991. *Underground Storage Tank Local Oversight Program, Guidelines for Report Submittals.* County of Los Angeles, Department of Public Works, Waste Management Division. March 1991, revised June 1993.

Los Angeles County Sheriff's Department. *Los Angeles County Sheriff Station-Marina Del Rey.* Information retrieved October 2, 2001 from the web site: http://www.lasd.org/stations/lennox/index.html.

Tait Environmental Management, Inc. (TEM), 1999. *UST Removal Report*, Los Angeles County Sheriff's Station. Prepared for Los Angeles County Department of Public Works (LACDPW). February, 1999.

U.S. Geological Survey, 1964. 7.5–Minute Topographic Map of the Venice Quadrangle, California. Photo-revised, 1981.

PERMITS, ETC.

permitsetc.com
Phone (213) 972-0882
Fax (213) 972-0982

205 S. Broadway.#302
Los Angeles, CA 90012

Date: 7-19-07 A.M. / P.M.

TO PLACE YOUR ORDER COMPLETE THE INFORMATION BELOW

Company Name: Analytical Consulting Group Phone #: 805-642-8180 Ext. ______

Person Placing this order: Willow Brohmer Order # ______

Address ______ City ______ State ______ Zip Code ______

Please check the route by which you want your order returned

Run: ______ Fax: ______ Messenger: ______ U.S. Mail: ______ Verbal: ______

Messenger by Permits, etc. charge will apply. ______

Fax number (805) 642-8190 Attn: ______

U.S MAIL: Company ______ Attn of: ______

St. Address 1746 F Victoria Ave. Ste # 366

City Ventura State CA Zip Code 93003

Please check the method to be used for payment of this order

Escrow ______ Credit Card ______ Other Send Invoice

Call in with information. Call in with information. ☐ I have an account with you now.

Property In Question

Street Number: 13483 to 13837 St. Direction: N., S., E., W., ______

Street Name: Fiji Way Blvd., St., Ave., Pl., Dr., Rd., ______

City of: Marina Del Rey County of LA Metro

APN # 4224-016-901 Yr. Built ______

Lot: ______ Blk: ______ Tract: ______

Please check the items you wish to order

Building Permits ✓ C/O ✓ Plot Plans ✓ Zoning ______ Sewer Permits ✓

Electrical ______ Plumbing ______

Please specify any other types of permits requested (other than building permits):

For Permits, Etc. Office Use Only

Permit #	C/O #	INITIAL	Reel #	INITIAL

Sewer Research:
Permit # ______
Year: ______
Map # ______

RESEARCHER PLEASE INITIAL

P.C.I.S. ______
Query: ______
Dafs: ______
HBPS: ______
Microfiche ______
TSOB: C/O: ______
20 years ______
Extra C/O: ______
TRW: ______
Experian: ______
Lot/Tract: ______

We cannot process your order until we receive your billing information.
We do not offer 3rd party billing, the person who places the order is responsible for payment of the order.

PERMITS, ETC.

Property Records Division of Title Court Services
www.permitsetc.com

205 S. Broadway, Ste 302
Los Angeles, CA 90012

Phone (213) 972-0882
Fax (213 972-0982

Date: 7/24/07

Re: **Department of Building & Safety**
Record Search

Property in Question: 13483 + 13837 Fiji way

After a thorough search of files, we were unable to find the following Information:

______ **the Certificate of Occupancy requested**
______ **the Building Permits requested**
__✓__ **original dwelling permits**
______ **sewer permits**
______ **other**

Clerk's Name: ____________________

City: Marina del Rey **County:** Lomita office

For additional information, please call (213) 972-0882

Sincerely,

Alice Ramirez

APPLICATION FOR BUILDING PERMIT

1

COUNTY OF LOS ANGELES — BUILDING AND SAFETY

INSPECTOR COPY

WORKERS' COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

Policy No. WC 7034407 Company United Pacific

☐ Certified copy is hereby furnished.

☒ Certified copy is filed with the county building inspection department.

Date 8/23/85 Applicant D.M. [signature]

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date ______ Applicant ______

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number 374077 Lic. Class B

Contractor Space Leasing Date 8/23/85

☐ I am exempt under Sec. ______ B.&P.C. for this reason ______

______ Date: ______

Signature D.M. [signature]

OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name ______

Lender's Address ______

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

D.M. [signature] 9/5/85

Signature of Applicant or Agent — Date

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 13483 Fiji Way

CITY: Marina Del Rey ZIP: 90292

SIZE OF LOT: ______ NO. OF BLDGS. NOW ON LOT: ______

TRACT: ______ BLOCK: ______ LOT NO.: ______

OWNER: Dept of Harbors TEL. NO.: ______

ADDRESS: 13483 Fiji Way

CITY: Marina Del Rey ZIP: 90293

ARCHITECT OR ENGINEER: Ashton Assoc TEL. NO.: 714 622-6665

ADDRESS: 987 W. Foothill Claremont

CONTRACTOR: Space Leasing TEL. NO.: 818 967-5825

ADDRESS: 1415 E. Grand LIC. NO.: 374077

CITY: Pomona LIC. CLASS: B

SQ. FT. SIZE: 2880 NO. OF STORIES: 1 NO. OF FAMILIES: NA

CHECK ONE: NEW ☐ ADD ☒ ALTER ☐ REPAIR ☐ DEMOL ☐

DESCRIPTION OF WORK: Rec Foundation Ramp-Steps-Installation of State Approved Trailer

USE OF EXISTING BLDG: Office

APPLICANT (PRINT): Doug Fortzeny TEL. NO.: 818 967-5825

ADDRESS: 1415 E Grand Pomona

PRESENT BUILDING ADDRESS: ______

LOCALITY: ______

MOVING CONTRACTOR: ______ TEL. NO.: ______

ADDRESS: ______

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP. LINE	EXIST. WIDTH
FRONT P.L.				
SIDE P.L.				

P.C. Fee $ 43.56	Permit Fee 51.25
	Issuance Fee 10.50
Investigation Fee	Total Fee 61.75

SEE REVERSE FOR EXPLANATORY LANGUAGE

Building and Safety section

BUILDING ADDRESS: 13483 Fiji Way

LOCALITY: Marina

NEAREST CROSS ST.: Admiralty Way

ASSESSOR MAP BOOK: ______ PAGE: ______ PARCEL: ______

USE ZONE: M-1 MAP NO.: 102 H 153

SPECIAL CONDITIONS: PP 30429 / P.P. 34270

DISTRICT	GROUP	TYPE CONST.	FIRE ZONE	PROCESSED BY
7	B2	V	3	Gruffy

STATISTICAL CLASSIFICATION — CLASS NO. 22 DWELL. UNITS ______ APT. ______ CONDO ______

SEWER MAP BK. W PG. 65

VALUATION $ 6000.00

$ ______

FINAL DATE 12/4/85

FINAL By Nelson

COASTAL PERMIT # 5-85-523 (Aug 6, 85)

LDMA Ref. # ______

LDMA P/C # ______

LDMA Perm. # ______

VALIDATION

3421A

23

1 4356

4356

0823 85

3556A

1

1 6175

6175

0905 85

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY / LAND DEVELOPMENT

LOMITA/LENNOX
24320 NARBONNE
LOMITA CA 90717
PHONE: (310) 534-3760 EXT:

1200

BUILDING PERMIT
DEMOLITION
BL 1200 9812160060
DUPLICATE

LEGAL ID:
ON FILE

ASSESSOR INFORMATION NUMBER:

TENANT:

OWNER: TEL. NO:
LOS ANGELES COUNTY

APPLICANT: TEL. NO:
TAIT & ASSOCIATES (714) 560-8222-
1100 TOWN & COUNTRY
ORANGE, CA 92868

CONTRACTOR: TEL. NO:
TAIT ENVIRONMENTAL MANAGEMENT (714) 560-8200-
1100 TOWN & COUNTRY RD LIC. NO
STE 1200 588098 ABS *
ORANGE, CA 92613

ARCHITECT OR ENGINEER: TEL. NO:
LIC. NO:

MAP NO: SEWER MAP BOOK: PAGE: FIRE ZONE: CMP:
XXXX 51

NO. OF FAMILIES: DWELLING UNITS: APT/COND: STAT CLASS:
NO 24

AIR QUALITY:	SCHOOL WITHIN 1000 FEET	HAZARDOUS MATERIALS
YES	NO	YES

STRUCTURE: SQ. FT 0 | NO. OF STORIES | CONST TYPE

EXIST BLDG USE: N/A USE ZONE:
EXIST OCC GRP:

BLDGS. NOW ON LOT: 1 VALUATION: 7,500

FEES PAID

FEE DESCRIPTION:	QUANTITY: UOM:	AMOUNT:
AA BLDG PERMIT ISSUANCE		18.90
AE STRONG MOTION OTHER	7500.00 VAL	1.58
AX BUILDING REVIEW FEE		55.90
02 DEMOLITION INSPECTN		111.40
TOTAL FEES		187.78

* ADDITIONAL DATA ON FILE

REPORT ID: DPR261 ROUTE TO: BS1200

BUILDING ADDRESS:
13483 FIJI WAY
LCNT CA 90292
NEAREST CROSS STREET:
THOMAS PAGE: GRID: LOCALITY: MARINA DEL REY

ISSUED ON: 12/16/98 | PROCESSED BY: SH | EXPIRES ON: 12/16/99

FINAL DATE 6/14/99 FINAL BY: CODE:

DESCRIPTION OF WORK
UNDERGROUND TANK REMOVAL (2)

SPECIAL CONDITIONS:

APPROVALS	DATE	INSPECTOR SIGNATURE
PEDESTRIAN PROTECTION		
SEWER DISCONNECTION		
ABANDON PRIVATE DISPOSAL		
UNDERGRND STRUCT REMOVAL AND SOIL RECOMPACTION	6/14/99	

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY / LAND DEVELOPMENT

LOMITA/LENNOX
24320 NARBONNE
LOMITA CA 90717
PHONE: (310) 534-3760 EXT:

1200

BUILDING PERMIT

BL 1200 0110310058

LEGAL ID:
ON FILE

ASSESSOR INFORMATION NUMBER:

TENANT:

OWNER: TEL. NO:
LOS ANGELES COUNTY DPW (562) 861-0316-
5325 E IMPERIAL HWY
SOUTH GATE, CA 90280

APPLICANT: TEL. NO:
SAME AS OWNER -

CONTRACTOR: TEL. NO:
SAME AS OWNER -
LIC. NO

ARCHITECT OR ENGINEER: TEL. NO:
-
LIC. NO:

MAP NO:	SEWER MAP BOOK:	PAGE:	FIRE ZONE:	CMP:
XX	X	X	3	75

NO. OF FAMILIES:	DWELLING UNITS:	APT/COND:	STAT CLASS:
0		NO	19

AIR QUALITY:	SCHOOL WITHIN 1000 FEET	HAZARDOUS MATERIALS
NO	NO	NO

	SQ. FT	NO. OF STORIES	CONST TYPE	NEW OCCUP GROUP
STRUCTURE:	240	1	VN	F2
GARAGE:				
OTHER:				

EXIST BLDG USE: CANOP
EXIST OCC GRP: F2

BLDGS. NOW ON LOT: VALUATION:
10,000

FEES PAID

FEE DESCRIPTION:	QUANTITY:	UOM:	AMOUNT:
D1 PLANCHECK W/O EN-HC	10000.00	VAL	0.00
AA BLDG PERMIT ISSUANCE			0.00
AE STRONG MOTION OTHER	10000.00	VAL	0.00
D1 PLANCHECK W/O EN-HC	10000.00	VAL	0.00
TOTAL FEES			0.00

REPORT ID: DPR261 ROUTE TO: BS1200

BUILDING ADDRESS:
13483 FIJI WAY
LCNT CA 90292
NEAREST CROSS STREET:
THOMAS PAGE: GRID: LOCALITY: MARINA DEL REY

ISSUED ON:	PROCESSED BY:	EXPIRES ON:
02/19/02	RB	08/18/02

FINAL DATE FINAL BY: CODE:

DESCRIPTION OF WORK
INSTALL CANOPY OVER A RECYCLING OIL CENTER

EXPIRED BY TIME
8/18/02 [illegible]

SPECIAL CONDITIONS:
JOB #F6009950

APPROVALS	DATE	INSPECTOR SIGNATURE
LOCATION AND SETBACKS		
SOILS ENGINEER APPROVAL		
FOUNDATION/TRENCH FORMS		
SLAB/UNDER FLOOR		
RAISED FLOOR FRAMING		
UNDERFLOOR INSULATION		
FLOOR SHEATHING		
ROOF SHEATHING		
SHEAR PANELS		
FRAME INSPECTION		
FIRE SPRINKLER HANGERS		
INSULATION/WEATHER STRIP		
INTERIOR LATH/DRYWALL		
EXTERIOR LATH		
FATED FLOOR/CEIL ASSEM.		
RATED WALL ASSEMBLIES		
RATED SHAFTS/OPENINGS		
T-BAR CEILINGS		
LOT DRAINAGE		

APPENDIX IV

EDR Historical Reports

Certified Sanborn® Map Report

Sanborn® Library search results
Certification # 6410-4621-8575

County of LA Dpt of Beaches & Harbors
13483 Fiji Way
Marina Del Rey, CA 90292

Inquiry Number 1980048.3

July 17, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

7/17/07

Site Name:	**Client Name:**
County of LA Dpt of Beaches &	Analytical Consulting GroupInc
13483 Fiji Way	1746 F Victoria Avenue
Marina Del Rey, CA 90292	Ventura, CA 93003
EDR Inquiry # 1980048.3	Contact: Willow Brohmer

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Analytical Consulting GroupInc were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name:	County of LA Dpt of Beaches & Harbors
Address:	13483 Fiji Way
City, State, Zip:	Marina Del Rey, CA 90292
Cross Street:	
P.O. #	E0706-440
Project:	Allen Matkins P
Certification #	6410-4621-8575

THE SANBORN LIBRARY LLC · Sanborn · SEAL OF AUTHORITY

Sanborn® Library search results
Certification # 6410-4621-8575

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

Total Maps: 0

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The EDR-City Directory
Abstract

EDR® Environmental Data Resources Inc

County of LA Dpt of Beaches & Harbors
13483 Fiji Way
Marina Del Rey, CA 90292

Inquiry Number: 1980048.6

Tuesday, July 17, 2007

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

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

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

This report compiles information by geocoding the subject properties (that is, plotting the latitude and longitude for such subject properties and obtaining data concerning properties within 1/8th of a mile of the subject properties). There is no warranty or guarantee that geocoding will report or list all properties within the specified radius of the subject properties and any such warranty or guarantee is expressly disclaimed. Accordingly, some properties within the aforementioned radius and the information concerning those properties may not be referenced in this report.

Appendix H –
Water Quality Technical Report dated October 14, 2008, prepared by Geosyntec Consultants

Water Quality Technical Report

Boat Central – Dry Stack Boat Storage Project
Marina del Rey, California

Prepared for

Shawna L. Schaffner
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, California

Prepared by

Geosyntec Consultants
55 SW Yamhill, Suite 200
Portland, Oregon

October 14, 2008

Contents

Tables

Figures

(all figures are provided at the end of this document)

1 INTRODUCTION

1.1 Purpose

Geosyntec Consultants was contracted by CAA Planning to prepare this Water Quality Technical Report (WQTR) for proposed construction of a state-of-the-art dry-stack boat storage facility ("Project") on a 4.25 acre leasehold parcel in Marina del Rey, California. The purpose of the WQTR study is to assess Project impacts to the water quality of surface water bodies that receive dry and wet weather runoff from the Project area.

1.2 Assessment Approach and Scope

To evaluate water quality impacts of the Project, pollutants of concern are identified based upon regulatory and other considerations. Project related changes in water quality are assessed for the pollutants of concern based on runoff water quality modeling, literature information, and professional judgment. This assessment takes into account Project Design Features (PDFs) that are consistent with the Los Angeles County Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (MS4 Permit), including the Standard Urban Stormwater Mitigation Plan (SUSMP) requirements.

The level of significance of impacts is evaluated based on California Environmental Quality Act (CEQA) significance criteria that include predicted runoff quality and quantity for proposed versus existing conditions; MS4 Permit and Construction General Permit requirements, and reference to receiving water quality benchmarks, as necessary, consisting of standards and objectives from the Basin Plan including Total Maximum Daily Load (TMDL) wasteload allocations, the California Toxics Rule, and other applicable criteria required by the Los Angeles Regional Water Quality Control Board (LARWQCB).

This WQTR does not address impacts to groundwater quality. The project entails redevelopment of a highly impervious site with similar levels of impervious cover. Opportunities for infiltration of Project runoff are limited by the high impervious cover, by the presence of soil types with generally poor infiltration characteristics, and by the presence of subsurface contamination. Any minor incidental infiltration in landscape areas along the margins of the proposed development is not expected to impact groundwater quality, as indicated by clarification from the LARWQCB (December 2006).

2 ENVIRONMENTAL SETTING

2.1 Project Location and Physical Setting

Marina del Rey is seaside community and harbor located south of Venice and about 4 miles north of the Los Angeles International Airport (LAX). The area is owned by the County of Los Angeles and leased out to private leaseholders on long term agreements.

The Project is proposed to occur across a 4.25 acre leasehold (encompassing land & water areas) composed of Parcels 52 & GG along Fiji Way (the "Project site") in Basin H of the Marina del Rey harbor, California (Figure 1).

Marina del Rey harbor was constructed by the US Army Corps of Engineers in the early 1960's on wetlands in the Ballona Creek estuary. The marina is the largest artificial small-craft harbor in the United States and harbors up to 9,240 boats in wet berthed slips, dry storage, and on trailers. The Marina del Rey harbor and Ballona Creek are separated by a constructed levy and are protected by a backwash barrier in the Pacific Ocean.

2.2 Land Use

2.2.1 Existing Land Use

The project site is currently developed with a public paved parking lot, the Marina del Rey Sheriff's Station maintenance building, maintenance shop, maintenance yard and storage, and five office trailers occupied by the Los Angeles County Department of Beaches and Harbors (Methane Specialists, 2007) (Figure 2). Across Fiji Way to the south is a vacant field that is part of the Ballona Wetland Restoration Project led by the Department of Fish and Game and others. The harbor itself is surrounded by high rise condos, hotels, restaurants, and shops and bordered on the west by the Pacific Ocean and Venice Beach.

2.2.2 Proposed Land Use

The proposed land use is shown in Figure 3. The proposed Project includes construction of a state-of-the-art dry-stack boat storage facility on two parcels in Marina del Rey, California. The facility would accommodate a maximum of 345 boats and 24 boat trailers within the dry-stack structure, and outside parking for 30 mast-up sail boats. The Project would also include a public waterside hoist, and a public boat wash down facility. The Project's visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two story visitor facilities building has a gross floor area of 3070 square feet and will house the Project office. The existing Sheriff's Boatwright/Lifeguard Facility will be relocated to a new two story building, adjacent to the visitor facilities building.

The Project will maximize public access to the shoreline by providing a waterfront overlook park with direct access from Fiji Way. The park area will incorporate landscaping, seating areas and a water fountain.

2.3 Climate

The Project area has a dry season climate that is warm and dry, and a wet season climate. The wet season is typically between November and March when intermittent storms may occur. An absence of rain for several months during the summer dry season is common. The 57-year average annual rainfall at LAX is about 12.4 inches. The average high temperature in July is about 80ºF and the average winter low temperature is about 46ºF.

2.4 Drainage

Runoff from the Project site currently drains to Basin H of Marina del Rey harbor, primarily as sheet flow directly into the harbor. Two area drains in the eastern half of the site collect runoff from a portion of the County maintenance facilities (Methane Specialists, 2007). An existing 7’3” by 8’6” rectangular concrete box storm drain traverses the site. This existing storm drain collects runoff from offsite vacant areas south of Fiji Way (Area A), and outfalls to Basin H within the Project area. The existing storm drain also acts as a tidal channel, allowing flow of seawater from Basin H to the offsite areas (Area A) during high tides. Consequently, project site runoff draining into Basin H can potentially reach the offsite vacant areas (Area A) if the direction of flow through the tidal channel is coincidentally toward the offsite areas. This potential scenario can occur under both the existing and proposed project conditions. Any project site runoff that reaches the vacant areas (Area A) would undergo some degree of mixing and dilution with waters in the harbor prior to reaching the offsite vacant area (Area A).

A proposed drainage plan for the Project was prepared by B&E Engineers and is shown in Figure 4. Runoff from the dry-stack structure, visitor reception facility, and parking areas will be directed to vegetated swales located in the parking lot medians and along the perimeter of the parking lot. The swales will convey runoff to the existing box storm drain, which outlets to Basin H. The swales will also be designed to serve as the stormwater treatment facilities for the site. Runoff from the linear park on the west side of the dry-stack structure will sheet flow directly to Basin H. The drain from the proposed boat wash area will be connected to the sanitary sewer and will be isolated from the storm drain system. The proposed drainage plan does not alter the configuration of the existing concrete box storm drain/tidal channel that crosses the Project site. Therefore, the Project will not alter existing drainage patterns and tidal flows to offsite vacant areas south of Fiji Way (Area A).

2.5 <u>Subsurface Conditions</u>

Information about soil and groundwater characteristics was obtained from the Phase I Environmental Site Assessment report (ESA) prepared by Methane Specialists (2007). The site is underlain by artificial fill and Quaternary alluvium consisting of clay and sandy clay. There is existing soil and groundwater contamination at the site caused by the accidental release of gasoline from former underground storage tanks within the County maintenance yard. The extent and magnitude of the existing subsurface contamination is unknown.

3 REGULATORY SETTING

3.1 Federal and State Regulations

3.1.1 Clean Water Act

The United States Environmental Protection Agency (USEPA) regulates water quality under the Clean Water Act (CWA). Enacted by the federal government in 1972, and significantly amended in subsequent years, the CWA (also known as the Federal Water Pollution Control Act) is designed to restore and maintain the chemical, physical, and biological integrity of waters in the United States. The CWA provides the legal framework for several water quality regulations including National Pollutant Discharge Elimination System (NPDES) Permits, effluent limitations, water quality standards, pretreatment standards, antidegradation policy, non-point source discharge regulation, and wetlands protection.

The CWA requires NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the CWA was amended to require that the USEPA establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. The USEPA published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters be regulated by a NPDES permit.

The USEPA has delegated the responsibility for administration of portions of the CWA to state and regional agencies. The CWA requires the States to adopt water quality standards for receiving water bodies and to have those standards approved by the USEPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g. wildlife habitat, agricultural supply, fishing etc.), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents – such as lead, suspended sediment, and fecal coliform bacteria – or narrative statements which represent the quality of water that support a particular use.

3.1.2 Federal Antidegradation Policy

The federal Antidegradation Policy (40 Code of Federal Regulations [CFR] §131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to the CFR, state antidegradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal Antidegradation Policy.

3.1.3 California Porter-Cologne Act

The Porter-Cologne Water Quality Control Act [embodied in the California Water Code (CWC)] established the principal California legal and regulatory framework for water quality control. The CWC authorizes the SWRCB to implement the provisions of the federal CWA including the authority to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Under the CWC, the State of California is divided into nine regions governed by regional water quality control boards (RWQCBs) that, under the guidance and review of the SWRCB, implement and enforce provisions of the CWC and the CWA. The project site is located in Region 4, also known as the Los Angeles Region and governed by the Los Angeles Regional Water Quality Control Board (LARWQCB).

The Porter-Cologne Act requires each RWQCB to formulate and adopt a water quality control plan (Basin Plan) as described below. The Porter-Cologne Act also provides RWQCBs the authority to include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

3.1.4 Basin Plan

The LARWQCB has adopted and periodically amends a water quality control plan entitled, "Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties" (Basin Plan).

The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its state water policy. To implement State and Federal law, the Basin Plan establishes beneficial uses for surface water and groundwater in the region, sets forth narrative and numeric water quality standards to protect those beneficial uses, and includes implementation provisions, programs, and policies.

The receiving water body of surface runoff from the Project site is the Marina del Rey harbor. The beneficial uses of the Marina del Rey harbor as established in the Basin Plan are listed in Table 3-1 below.

The Basin Plan also establishes the narrative and numeric water quality objectives of the Project receiving waters. The Basin Plan states that water quality objectives for Inland Surface

Waters apply to enclosed bays and estuaries in the Region, which would include the Marina del Rey harbor. Water quality objectives in the Basin Plan apply within the receiving water and are not directly applicable to runoff in the storm sewers. Therefore, water quality objectives from the Basin Plan are utilized in this report as benchmarks for assessment of potential impacts from project area runoff on the receiving waters.

Table 3-1: Beneficial Uses of Project Receiving Waters in Marina del Rey Harbor

Coastal Feature	**Hydro Unit No.**	**NAV**	**REC1**	**REC2**	**COMM**	**MAR**	**WILD**	**SHELL**
Marina del Rey Harbor	405.13	E	E	E	E	E	E	E

E = Existing Beneficial Use

NAV Navigational uses for shipping, travel, or other transportation by private, military, or commercial vessels.

REC-1 Water contact recreational activities involving body contact with water, where ingestion is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

REC-2 Water contact recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach combing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

COMM Commercial and Sport Fishing activities including recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

MAR Uses of water that support marine ecosystems including but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife.

WILD Water uses that support wildlife and terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife,(e-g., mammals, buds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

SHELL Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption.

3.1.5 California Toxics Rule

Because of gaps in California's regulations, the USEPA promulgated the California Toxics Rule ("CTR") (40 CFR 131.38) (USEPA, 2000) which established numeric water quality criteria for certain toxic substances in California surface waters. The CTR establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the LARWQCB as having beneficial uses protective of aquatic life or human health, such as the Marina del Rey harbor. CTR criteria are strictly applicable to the receiving water body and not to the Project area discharges to the storm sewer.

3.1.6 CWA Section 303(d) – TMDLs

When designated beneficial uses of a particular receiving water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as "impaired." Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (plus a "margin of safety"). Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

States are required to submit the Section 303(d) list and TMDL priorities to the EPA for approval every two years. The 2002 Section 303(d) list of impaired water bodies included listings for the Marina del Rey back basins (Basins D, E, F). The back basins were listed as impaired by a variety of toxics (metals and legacy pesticides), sediment toxicity, fish consumption advisory, and high coliform count. As a result of these listings, two TMDLs have been prepared and adopted by the LARWQCB. Both TMDLs target areas in the Marina del Rey back basins that are not directly adjacent to the Project site. However, both TMDLs identify urban runoff as a contributing source of impairing pollutants. For this reason and because of the proximity of the Project to the back basins, the TMDL constituents discussed below are considered pollutants of concern for the Project area runoff.

A Basin Plan amendment for coliform bacteria TMDLs in the Marina del Rey Mothers Beach and the back basins was adopted on August 7, 2003, and became effective on March 18, 2004. The bacteria TMDL report (LARWQCB, 2003) identifies discharges from the storm drain system as a primary source of bacteria in the back basins. These discharges include both wet weather runoff from storm events and dry weather runoff (or nuisance flows) from the watershed. A TMDL implementation plan was prepared by the Marina del Rey Watershed Responsible Agencies (MDRWRA, 2005).

A Basin Plan amendment for toxics TMDLs in the back basins of Marina del Rey was adopted by the LARWQCB in October 2006 and became effective on March 22, 2006. The Toxics TMDL Report for Marina del Rey back basins (LARWQCB, 2005) identifies stormwater runoff as sources of metals, legacy pesticides, and PCBs in the back basins D, E, and F of the Marina del Rey harbor. A Coordinated Monitoring Plan was developed by the County of Los Angeles Technical Committee Chair in March 2007.

Once a TMDL is developed and adopted into the Basin Plan, the water quality limited section is removed from the 303(d) list. For this reason the 2006 303(d) list of impaired water bodies, which is the most recent list, does not include any listing for the Marina del Rey harbor.

3.2 Los Angeles County MS4 Permit

The State's Municipal Storm Water Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). MS4 Permits were issued in two phases. Under Phase I, which started in 1990, the Regional Water Quality Control Boards have adopted NPDES stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits were issued to a group of co-permittees encompassing an entire metropolitan area. As part of Phase II, the State Water Resources Control Board adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

In 2001, the Los Angeles Regional Water Quality Control Board (LARWQCB, 2001) issued an NPDES Permit and Waste Discharge Requirements (Order No. 01-182) under the CWA and the Porter-Cologne Act for discharges of urban runoff in public storm drains in Los Angeles County. The Permit was amended on September 14, 2006 by Order No. R4-2006-0074. The Permittees are the Los Angeles County cities (including the City of Los Angeles) and the County (collectively "the Co-Permittees"). The Los Angeles County MS4 Permit regulates stormwater discharges from the Project area. The MS4 Permit details requirements for new development and significant redevelopment, including specific sizing criteria for treatment BMPs and flow control requirements.

To implement the requirements of the NPDES permit, the Los Angeles County Co-permittees have developed development planning guidance and control measures that control and mitigate stormwater quality and quantity impacts to receiving waters as a result of new development and redevelopment. They are also required to implement other municipal source detection and elimination programs, as well as maintenance measures.

3.2.1 Stormwater Quality Management Program

The Los Angeles County MS4 Permit requires the Co-permittees to implement a Stormwater Quality Management Program (SQMP). The SQMP summarizes the program components the Co-permittees will implement to comply with the Permit, and to reduce the discharges of pollutants in stormwater to the maximum extent practicable (MEP). The Los Angeles County MS4 Permit contains the following provisions for implementation of the SQMP by the Co-permittees:

- General Requirements – Each Permittee is required to implement the SQMP to comply with applicable storm water program requirements and implement additional controls where necessary to reduce the discharge of pollutants in stormwater to the MEP.

- BMP Implementation – Permittees are required to implement the most effective combination of BMPs for stormwater/urban runoff pollution control.
- SQMP Revision – Permittees are required to revise the SQMP to comply with regional, watershed specific requirements, and/or waste load allocations for implementation of TMDLs for impaired waterbodies.
- Responsibilities of the Principal Permittee – The responsibilities of the Los Angeles County Department of Public Works (as the Principal Permittee) include, but are not limited to, coordinating activities necessary to comply with the NPDES permit, providing personnel and fiscal resources to prepare SQMP updates and annual reports and summaries of reports required under the SQMP, and implementing a County-wide Monitoring Program and evaluating results of the monitoring program.
- Responsibilities of Permittees – Each Permittee is required to comply with the requirements of the SQMP applicable to the discharges within its boundaries.
- Watershed Management Committees (WMCs) – WMCs are comprised of a voting representative from each Permittee within the Watershed Management Areas (WMAs). WMCs are required to facilitate efforts and exchange of information between Permittees, establish additional goals for WMAs, prioritize pollution control efforts, monitor implementation of tasks designated for the WMA, and assess the effectiveness of and recommend revisions to the SQMP.
- Legal Authority – Permittees are granted the necessary legal authority to prohibit non-storm water discharges to the storm drain system.

The objective of the SQMP is to reduce pollutants in urban stormwater discharges to the "MEP" in order to attain water quality objectives and to protect the beneficial uses of receiving waters in Los Angeles County. Special provisions are provided in the Los Angeles County MS4 Permit to facilitate implementation of the SQMP. These provisions include:

- BMP substitution
- Public Information and Participation Program (PIPP)
- Industrial/Commercial Facilities Control Program
- Development Planning Program.
- Development Construction Program
- Public Agency Activities Program
- Illicit Connections and Illicit Discharges Elimination Program

3.2.2 Standard Urban Stormwater Mitigation Plan

On March 8, 2000, the LARWQCB approved the County planning program requirements as part of the MS4 program to address stormwater pollution from new construction and redevelopment. The development planning program requirements include the Standard Urban Stormwater Mitigation Plan requirements, which collectively are referred to in this report as the

SUSMP requirements. The SUSMP contains a list of minimum BMPs that must be employed to infiltrate or treat stormwater runoff, control peak flow discharge, and reduce the post-project discharge of pollutants from stormwater conveyance systems. The SUSMP defines, based upon land use type, the types of practices that must be included and issues that must be addressed as appropriate to the development type and size. Compliance with SUSMP requirements is used as one method to evaluate significance of Project development impacts on surface water runoff.

Finalized in September 2002, the County of Los Angeles' "Manual for the Standard Urban Stormwater Mitigation Plan" details the requirements for new development and significant redevelopment BMPs (LACDPW, 2002) (the "Manual"). The Manual is a model guidance document for use by Permittees and individual project owners to select post-construction BMPs and otherwise comply with the SUSMP requirements. It addresses water quality and drainage issues by specifying design standards for structural or treatment control BMPs that infiltrate or treat stormwater runoff and control peak flow discharge. BMPs are defined in the Manual and SUSMP requirements as any program, technology, process, sizing criteria, operational methods or measures, or engineered systems, which, when implemented, prevent, control, remove, or reduce pollution. Treatment BMP design criteria and guidance are also contained in the Los Angeles County MS4 Permit, the Manual, and in the Technical Manual for Stormwater Best Management Practices in the County of Los Angeles, issued by the Department of Public Works in February 2004 (LACDPW, 2004).

One of the most important requirements within the SUSMP is the specific sizing criteria for stormwater treatment BMPs for new development and significant redevelopment projects. The SUSMP includes sizing criteria for both volume-based and flow-based BMPs. The sizing criteria options for volume-based BMPs, such as extended detention basins, are as follows:

1. The 85th percentile 24-hour runoff event determined as the maximized capture stormwater volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (WEF, 1998); or,
2. The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial (1993); or,
3. The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a stormwater conveyance system; or,
4. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County Area) that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile, 24-hour runoff event.

Volume-based treatment control BMPs for the Project will be sized consistent with criterion 2 above, which for the Project area is consistent with criterion 3.

Flow-based BMPs, such as vegetated swales, must be designed to infiltrate or treat the maximum flow rate generated from one of the following scenarios:

1. The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or
2. The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County, or
3. The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

The SUSMP also includes general design specifications for individual priority project categories. These include:

- Single-Family Hillside Home
- 100,000 square foot commercial developments
- Restaurants
- Retail gasoline outlets
- Automotive repair shops
- Parking lots

Categories that are relevant to the Project are commercial developments and parking lots. Commercial developments must have properly designed loading and unloading dock areas, repair and maintenance bays, and vehicle equipment wash areas. Parking lots have to be properly designed to limit oil contamination and have regular maintenance of parking lot stormwater treatment systems (e.g., storm drain filters and biofilters).

The proposed Project Development Features (PDFs) contained herein are consistent with the BMP sizing and other requirements contained in the SUSMP, and will incorporate appropriate SUSMP requirements into Project plans as part of the development plan approval process for building and grading permits. This analysis will identify the general design specifications related to parking lots and other project features associated with Project.

3.3 Local Coastal Plan

The California Coastal Commission regulates development and water resources in the Coastal Zone. Because the Project is located within the Coastal Zone, a coastal development permit is required from the County under authority delegated by Coastal Commission through the certification of the Local Coastal Program (LCP). The Marina del Rey LCP is a planning document prepared by local governments in partnership with the Coastal Commission to guide development in the coastal zone. The LCP includes a land use plan and specific measures and policies to address water quality, primarily through conformance with the County MS4 Permit and the County SUSMP program.

The Marina del Rey LCP was certified by the Coastal Commission in 1990 and was last updated in 1996. The Marina del Rey LCP is currently under review by the Coastal Commission, which conducts periodic reviews of all LCPs to determine if the certified LCP is being effectively implemented in conformity with the policies of the Coastal Act. The Coastal Commission staff has prepared specific recommendations for policy changes to the LCP, including recommendations related to marine resources and water quality (CCC, 2007). Because the LCP review is still ongoing, the Coastal Commission staff recommendations have not been formally adopted by the County. However, the Project approval under the LCP is subject to appeal to the Coastal Commission regarding whether it conforms to the LCP.

3.4 Construction Permits

Pursuant to the CWA Section 402(p), requiring regulations for permitting of certain stormwater discharges, the State Water Resources Control Board (SWRCB) has issued a statewide general NPDES Permit and Waste Discharge Requirements for stormwater discharges from construction sites (NPDES No. CAS000002) California Water Resources Control Board Resolution No. 2001-046; Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (adopted by the SWRCB on April 26, 2001).

Under this Construction General Permit, discharges of stormwater from construction sites with a disturbed area of one or more acres (effective March 2003) are required to either obtain individual NPDES permits for stormwater discharges or be covered by the Construction General Permit. Coverage under the Construction General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB. Each applicant under the Construction General Permit must ensure that a Stormwater Pollution Prevention Plan (SWPPP) is prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. Compliance with the requirements of the Construction General Permit is used as one method to evaluate Project construction-related impacts on surface water quality.

3.5 General Waste Discharge Requirements for Dischargers of Groundwater From Construction and Project Dewatering

The LARWQCB has issued a General NPDES Permit and General Waste Discharge Requirements (WDRs) (Order No. R4-2003-0111, NPDES No. CAG994004) governing construction-related dewatering discharges (the "General Dewatering Permit.") This permit addresses discharges from temporary dewatering operations associated with construction and permanent dewatering operations associated with development. The discharge requirements include provisions mandating notification, sampling and analysis, and reporting of dewatering and testing-related discharges. The General Dewatering Permit authorizes such construction-related activities so long as all conditions of the permit are fulfilled. Compliance with the requirements of the General Dewatering Permit is used as one method to evaluate Project construction-related impacts on surface water quality.

4 POLLUTANTS OF CONCERN AND SIGNIFICANCE CRITERIA

4.1 Surface Water Pollutants of Concern

The surface water pollutants of concern for the Project are those that are anticipated to be or potentially could be generated by the Project at concentrations that would cause deleterious effects to the receiving waters. The SUSMP Manual defines the Pollutants of Concern as consisting of any pollutants that exhibit one or more of the following characteristics: loadings or historic deposits of pollutant that are impacting the beneficial uses of a receiving water, elevated levels of the pollutant in sediments of a receiving water and/or which have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant at concentrations or loads considered potentially toxic to humans and/or flora and fauna.

Criteria used to select the Project pollutants of concern were: the proposed land use; the beneficial uses of the receiving waters as designated in Basin Plan; the water quality objectives of the receiving waters including the CTR criteria; and the adopted TMDLs in the Marina del Rey harbor. Based upon these considerations, the selected pollutants of concern are: total suspended solids (TSS), trace metals (copper, lead and zinc), legacy pesticide (chlordane), PCBs, pathogen indicators (fecal coliform bacteria), oil and grease, trash and debris, and nutrients. The following describes these pollutants and the rationale for their selection.

***Sediments (TSS)*:** Silt, sand, soil, clay, or other earthen materials that are generated from offshore operations, including construction projects, can impair natural waters. The Basin Plan places discharge prohibitions on sediments 'in quantities that unreasonably affect or threaten to affect beneficial uses.' Sediments are a pollutant of concern for Project because they are a common constituent in urban runoff, and because sediments can transport other pollutants such as metals and organic compounds that tend to adsorb to sediment particles, especially toxic pollutants that have been identified as causing impairment of beneficial uses in Marina del Rey back basins.

***Trace Metals (Copper, Lead, and Zinc)*:** Urban stormwater runoff can be a significant source of metals. Copper, lead, and zinc are the most prevalent metals found in urban runoff. The primary sources of trace metals in stormwater are typically commercially available metals used in vehicles (e.g. automobiles), buildings, and infrastructure. Metals are also found in fuels, adhesives, paints, and other coatings. Boats in Marina del Rey are another source of copper. Copper is continually leached into water by the anti-fouling paints used on boats exterior. Copper may be of particular concern for the Project since boats are stored and washed on-site. Copper, lead, and zinc are also included in the back basins toxics TMDL adopted in 2005. The toxics TMDL report identifies urban stormwater runoff as the primary point source of metals in the Marina del Rey harbor. For these reasons, copper, lead and zinc are included as pollutants of concern for the Project.

Legacy Pesticide (Chlordane)**:** Pesticides (including herbicides, insecticides and fungicides) are chemical compounds commonly used to control insects, rodents, plant diseases, and weeds. Excessive application of a pesticide in connection with agriculture cultivation or landscaping may result in runoff containing toxic levels of the active ingredient. Organochlorine pesticides such as DDT, chlordane, and dieldrin are legacy pesticides that were found to bioaccumulate and consequently were banned for use in the United States. Due to their strong persistence in the environment, organochlorine pesticides continue to pose risk to aquatic systems, including impairments in the Marina del Rey back basins. Chlordane, DDT, and dieldrin were included on the 2002 CWA Section 303(d) list of impaired water bodies for the Marina del Rey back basins; chlordane and DDT were listed for sediment toxicity, and chlordane, DDT, and dieldrin were listed for fish consumption advisory. In response to the 303(d) listing, a toxics TMDL was prepared and adopted for the Marina del Rey back basins in 2005. However, chlordane is the only legacy pesticide included in the TMDL because several of the legacy pesticides were delisted during the period between the 2002 Section 303(d) listing and the adoption of the toxics TMDL in 2005. The toxics TMDL report assumed that the only source of chlordane to the Marina del Rey harbor is stormwater runoff carrying historically deposited chlordane, most likely attached to eroded sediment particles. For this reason, chlordane is included as a pollutant of concern for the Project.

PCBs: PCBs are toxic persistent chemicals that have been historically released into the environment from industrial uses, such as transformers, but are no longer produced in the United States. Due to their persistence and adsorption to sediment, PCBs can still be detected in urban runoff due to historic industrial sources of these chemicals. The back basins toxics TMDL includes restrictions on PCB levels in fish tissue. The toxics TMDL report identifies stormwater runoff as a source of PCBs in the Marina del Rey back basins. For this reason, PCBs are included as a pollutant of concern for the Project.

Pathogens (Bacteria, Viruses, and Protozoa). Elevated levels of human pathogens in receiving waters are typically caused by the transport of domestic animal, wildlife, or human fecal wastes from the watershed. Due to the difficulty and cost of directly measuring the presence of human pathogens, coliform bacteria are used as an indicator organism of human pathogens. Coliform bacteria are selected as a pollutant of concern for the Project because they are commonly detected in urban runoff and because indicator bacteria are an impairing pollutant in Marina del Rey back basins. The bacteria TMDL report identified urban runoff (both dry and wet weather runoff) as the primary point source of indicator bacteria in the harbor. Potential nonpoint sources include discharges from boats, boat deck and slip washing, swimmer washoff, and natural sources from birds and wildlife.

Petroleum Hydrocarbons (Oil and Grease)**.** The existing and proposed land use in the Project area are potential sources oil, grease, and other petroleum hydrocarbons and therefore are selected as a pollutant of concern. The potential sources of petroleum hydrocarbons include accidental or illicit spillage of fuels and lubricants, road and parking area runoff, boat washing area runoff, discharge of domestic and industrial wastes, leachate from asphalt roads, tire wearing, atmospheric deposition, and deposition from automobile exhaust. Petroleum hydrocarbons, such as polycyclic aromatic hydrocarbons (PAHs), can bioaccumulate in aquatic organisms from contaminated water, sediments, and food and are toxic to aquatic life at low concentrations. Hydrocarbons can be measured as total petroleum hydrocarbons, oil and grease, or as individual hydrocarbons.

***Trash & Debris*:** Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic debris (such as leaves, grass cuttings, and food waste) are general waste products on the landscape that can be entrained in urban runoff. The presence of trash & debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a water body and thereby lower its water quality. Also, in areas where stagnant water exists, the presence of excess organic matter can promote low oxygen (anoxic) conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide. Trash and debris is a pollutant of concern for the Project because urban development is common source of trash and debris.

***Nutrients (Total Phosphorous and Nitrogen)*:** Nutrients are inorganic forms of nitrogen (nitrate, nitrite and ammonia) and phosphorous. Nutrients are biostimulatory substances that can cause excessive or accelerated growth of vegetation, such as algae, in receiving waters. Eutrophication due to excessive nutrient input can lead to changes in algae, benthic, and fish communities; extreme eutrophication can cause hypoxia or anoxia, resulting in fish kills. Surface algal scum, water discoloration, and the release of toxins from sediment can also occur. Nutrients (nitrogen forms, phosphorus) are included as pollutants of concern for the Project because they are common pollutants in stormwater runoff from urban areas. The main sources of nutrients in urban runoff are fertilizers used on lawns and landscape areas. Other sources include pet waste, failing septic systems, restaurant facility washouts, and atmospheric deposition from industry and automobile emissions.

4.2 Other Surface Water Constituents

This section discusses other surface water constituents that are listed in the Basin Plan, but for reasons explained below, are either analyzed through indicator pollutants, or are not considered to be pollutants of concern for the Project.

BOD (Biochemical Oxygen Demand) and Dissolved Oxygen. Adequate levels of dissolved oxygen are necessary to support aquatic life. High levels of oxygen demanding substances discharged to receiving waters can depress oxygen levels to levels below standards. Oxygen demanding substances are compounds that can be biologically degraded through aerobic processes. The presence of oxygen demanding substances can deplete oxygen supplies in waters. Nutrients in fertilizers and food wastes in trash are examples of oxygen demanding compounds that may be present on the Project site. Other biodegradable organic materials include human and animal waste and vegetative matter. Biodegradable pollutants are largely subsumed within the nutrients and trash and debris categories above, and therefore are not be analyzed as a separate category.

***Pesticides*:** Legacy pesticides (chlordane) adsorbed to soil particles have been listed as pollutants of concern above. This section addresses other currently legal pesticides that could potentially be used on the Project site. Although the Project includes impervious surface over the large majority of the site, some landscaping will be included in the Project where pesticide application could potentially occur. It is assumed that any application of pesticides would be conducted by licensed handlers in accordance with manufacturer instructions. In addition, source control BMPs would be implemented in accordance with SUSMP requirements, including the proper storage and usage of pesticides, planting of native and drought tolerate plants that would reduce the need for pesticide usage, and the use of smart irrigation systems that would reduce the potential for overwatering and runoff from landscape areas. Therefore, pesticides (other than the legacy pesticide chlordane) are not pollutants of concern for the Project.

Temperature. Increases in water temperature can stimulate algal growth, causing algal blooms and decay that can result in lower dissolved oxygen levels, impairing habitat and other beneficial uses of the receiving waters. Discharges of wastewater can also cause unnatural and/or rapid changes in temperature of receiving waters, which can adversely affect aquatic life. Elevated temperatures are typically associated with discharges of process wastewaters or non-contact cooling waters. Since the Project will not generate process wastewater or cooling waters, temperature is not considered a pollutant of concern for the Project.

Color, Taste, and Odor. The Basin Plan contains narrative objectives for color, taste, and odor that causes a nuisance or adversely affects beneficial uses. Undesirable tastes and odors in water may be a nuisance and may indicate the presence of a pollutant(s). Odor associated with water can result from decomposition of organic matter or the reduction of inorganic compounds, such as sulfate. Other potential sources of odor causing substances, such as heavy industrial processes, will not occur as part of the Project. Color in water may arise naturally, such as from minerals, plant matter, or algae, or may be caused by industrial pollutants. The Project does not include heavy industrial land uses. Therefore, color-, taste-, or odor-producing substances are not pollutants of concern for the Project.

Methylene Blue Activated Substances (MBAS). MBAS are related to the presence of detergents in water. Positive results may indicate the presence of wastewater or be associated with urban runoff due to commercial and/or residential vehicle washing or other outdoor washing activities. Surfactants disturb the surface tension which affects insects and can affect gills in aquatic life. The boat wash area that is included in the Project will comply with design requirements to discharge to the sanitary sewer system, and will not discharge to the stormwater system or the harbor. On this basis, MBAS is not considered a pollutant of concern for the Project.

pH. pH is a measure of the extent to which water will act as an acid or base. The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. The pH of seawater is about 8.0, while the pH of "pure" water at 25 ºC is 7.0. pH affects the solubility of certain toxic chemicals (e.g., some metals) and therefore aquatic organisms can be highly sensitive to pH. pH in the receiving waters is not expected to be affected by runoff discharges from the Project.

Radioactive Substances. Radioactive substances typically occur at very low concentrations in natural waters. Some activities such as mining or certain industrial activities (e.g., energy production, fuel reprocessing) can increase the amount of radioactive substances impairing beneficial uses. The Project will not have industrial or other activities that would be a source of any radioactive substances. Therefore, radioactive substances are not a pollutant of concern for the Project.

Toxicity. Certain pollutants in stormwater runoff have the potential to be highly toxic to aquatic organisms resulting in effects such as impaired reproduction or mortality. Toxicity in urban runoff could be caused by ammonia, trace metals, PAHs, or pesticides, as indicated in the back basins TMDL. These constituents are subsumed by the pollutants of concern categories above, and are therefore adequately represented by those categories.

4.3 Thresholds of Significance Criteria

The following summarizes the thresholds of significance used to evaluate the significance of potential Project related water quality impacts for each pollutant of concern. A weight of evidence approach is employed in this analysis considering the various significance criteria.

4.3.1 Surface Water Quality Thresholds of Significance

Thresholds of significance for surface water quality impacts have been developed based on a review of the Los Angeles County MS4 Permit and the CEQA Guidelines, Appendix G. Significant adverse water quality impacts are presumed to occur if the proposed Project in the construction or post-development phase would:

- Cause or contribute to the exceedance of water quality standards and objectives or waste discharge requirements, or otherwise substantially degrade water quality.
- Create pollution[1], contamination[2], or conditions of nuisance[3] in receiving waters.

[1] Pollution is defined in Section 13050 of the California Water Code as "an alteration of the quality of the waters of the state to a degree, which unreasonably affects either of the following: 1) the waters for beneficial uses or 2) facilities which serve these beneficial uses. Pollution may include contamination."

This report analyzes whether polluted runoff may result from the Project based on the results of water quality modeling and qualitative assessments that take into account water quality controls or BMPs that are considered Project Design Features (PDFs). Any increases in pollutant concentrations or loads in runoff resulting from the development of the Project site are considered an indication of a potentially significant adverse water quality impact, especially if the constituent is on the 303(d) list or has a TMDL. If loads and concentrations resulting from development are predicted to stay the same or to be reduced when compared with existing conditions, it is concluded that the Project would not cause a significant adverse impact to the ambient water quality of the receiving waters for that pollutant.

If pollutant loads or concentrations are expected to increase, then for the construction and post-development phases, potential impacts are assessed by evaluating compliance of the Project, including PDFs, with applicable regulatory requirements of the Los Angeles County MS4 Permit, including SQMP and SUSMP requirements, with the Construction General Permit, and with the General Dewatering Permit. Further, post-development increases in pollutant loads and concentrations are evaluated by comparing the magnitude of the increase to relevant benchmarks, including receiving water quality objectives and criteria from the Basin Plan and CTR, as described below.

4.3.2 Receiving Water Benchmarks

The numeric and narrative receiving water quality criteria provided in the Basin Plan, the TMDLs, and the CTR apply only to receiving waters, not to stormwater and non-stormwater runoff from the Project site, which are considered to be end-of-pipe discharges. Therefore, the narrative and numeric criteria are considered water quality benchmarks for comparison purposes.

Comparison of predicted post-development water quality concentrations in the Project site runoff to water quality benchmarks facilitates analysis of the potential for Project to result in exceedances of receiving water quality standards, adversely affect beneficial uses, or otherwise degrade receiving waters. If water quality concentrations in the Project runoff are below receiving water quality standards, then this would indicate that beneficial uses are not adversely affected, and water quality is not otherwise degraded by runoff from Project site. Thus, if

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[2] Contamination is defined in Section 13050 of the California Water Code as "an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. Contamination includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected."

[3] Nuisance is defined in Section 13050 of the California Water Code as "anything which meets all of the following requirements: 1) is injurious to health, or is indecent or offensive to the senses or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) affects at the same time an entire community of neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and 3) occurs during, or as a result of, the treatment or disposal of wastes."

predicted pollutant levels in the Project runoff do not to exceed receiving water benchmarks, this is an indication that no significant impacts will result from the Project development.

4.3.3 Los Angeles County MS4 Permit Requirements for New Development (SUSMP)

Satisfaction of Los Angeles County MS4 Permit requirements for new development, including SUSMP requirements and SQMP requirements, and satisfaction of the Construction General Permit and General Dewatering Permit establish compliance with water quality regulatory requirements applicable to stormwater runoff within the LARWQCB's jurisdictional area.

The Los Angeles County MS4 Permit requires that the SQMP specify BMPs that will be implemented to reduce the discharge of pollutants in stormwater to the Maximum Extent Practicable. MS4 requirements are met when new development complies with the SUSMP requirements set forth in the Los Angeles County MS4 Permit. Under the SUSMP requirements, the effectiveness of stormwater treatment controls are primarily based on two factors - the amount of runoff that is captured by the controls and the selection of BMPs to address identified pollutants of concern. Selection and numerical sizing criteria for new development treatment controls are included in the Los Angeles County MS4 Permit and the County SUSMP Manuals and in subsequent clarification from the Board (LARWQCB, 2006). If the Project PDFs meet these criteria, and other source control and site design BMPs consistent with the SUSMP requirements are implemented, then this indicates that no significant impacts will occur as the result of insufficient stormwater treatment capacity.

4.3.4 Construction General Permit and General Dewatering Permit

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that describes the erosion and sediment control BMPs that will be followed as well as material management and prevention of non-stormwater discharge BMPs that will be used during the construction phase of development. The General Dewatering Permit addresses discharges from permanent or temporary dewatering operations associated with construction and development and includes provisions mandating notification, sampling and analysis, and reporting of dewatering and testing-related discharges.

To evaluate significance of construction phase Project water quality impacts, this WQTR evaluates whether water quality control is achieved by implementation of BMPs consistent with Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology (BAT/BCT), as required by the Construction General Permit and the General Dewatering Permit.

4.3.5 Cumulative Impacts

CEQA requires the analysis of the cumulative impacts of a Project when the Project's incremental effects may be significant when assessed along with the effects of past projects, and the reasonably foreseeable effects of probable future projects. The discussion of cumulative impacts must reflect the potential severity of the impacts and their likelihood of occurrence, but the discussion and analysis need not provide as great a detail as is provided for the direct effects attributable to the Project alone. This report therefore analyzes the potential for cumulative water quality impacts. The cumulative impacts analysis considers the Project's incremental contribution to significant cumulative water quality impacts to the Marina del Rey harbor in light of the water quality impact mitigation achieved by the PDFs. The analysis will also consider whether the Project, including PDFs, and future projects will comply with specific requirements in a previously approved ordinance, plan, or mitigation program (such as the Basin Plan, the CTR, the MS4 Permit, the Construction General Permit or the General Dewatering Permit) that have been adopted for the purpose of avoiding or substantially lessening the cumulative water quality and hydrologic impact problems within the geographic area in which the Project is located.

5 PROJECT DESIGN FEATURES FOR WATER QUALITY CONTROL

The Project includes PDFs to avoid or minimize adverse water quality impacts on the Project's receiving surface waters. The PDFs for surface water quality impacts include site design, source control, and treatment control BMPs that will be incorporated into the Project and are considered a part of the Project for impact analysis. Effective management of dry and wet runoff water quality begins with limiting increases in runoff volumes and pollutants at the source. Site design and source control BMPs are practices designed to minimize runoff and the introduction of pollutants into runoff. Treatment control BMPs are designed to remove pollutants once they have been mobilized by rainfall and are in the runoff. This section describes the post-development site design, source control, and treatment control PDFs for the Project.

All BMPs have been selected to comply with SUSMP regulations, and to address guidance and clarification from the Regional Board (LARWQCB, 2006), as well as water quality related planning guidance in the Coastal Commission Staff Recommendations on the LCP (CCC, 2007).

5.1 SUSMP Requirements and Project Design Features

The Project will comply with SUSMP requirements by incorporating such requirements into Project PDFs. SUSMP includes a list of minimum BMPs that must be used for the Project. Table 5-1 summarizes the SUSMP required and the proposed PDFs that will be incorporated into the Project to meet SUSMP requirements. These PDFs include site design, source control, and treatment control measures, which are discussed in more detail below. These PDFs will be employed throughout the entire Project. The major structural PDFs include source controls such as proper design of areas with the potential to generate pollutants (boat wash area, parking areas, and trash storage), and vegetated treatment controls incorporated into site landscaping.

Table 5-1: SUSMP Requirements and Corresponding Project Design Features

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
1. Peak Stormwater Runoff Discharge Rates	• Post-development runoff from the 25-year storm shall not exceed the predevelopment peak flow rate, from the 25-year storm. • Post-development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak stormwater discharge rate will result in increased potential for downstream erosion.	• 25-year post-development peak flows will be controlled to pre-development levels. • The Project is not subject to hydromodification control requirements because all runoff from the Project discharges to the Marina del Rey harbor.
2. Conserve Natural Areas	• Concentrate or cluster development on portions of a site while leaving the remaining land in a natural	• The Project entails redevelopment of existing parking areas and maintenance facilities that have a high level of

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
	undisturbed condition • Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection • Maximize trees and other vegetation at each site, planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants • Promote natural vegetation by using parking lot islands and other landscaped areas • Preserve riparian areas and wetlands	impervious cover. There is limited existing open space on the Project site, and no riparian features. • The Project will include landscape features with native and/or drought tolerant vegetation and trees. There will be a net increase in pervious area with the Project, including a new linear parkway. • Treatment BMPs will be incorporated into landscaped areas, which will provide some minor reduction in runoff volume through soil soaking and drying.
3. Minimize Stormwater Pollutants of Concern	• Minimize to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the stormwater conveyance system as approved by the building official.	• Treatment control BMPs were selected to address the pollutants of concern for the Project. These BMPs are designed to minimize introduction of pollutants to the Maximum Extent Practicable (MEP) and to promote treatment and some minor volume reduction. • The Project will include a number of source control measures to control pollutants to the MEP, including use of environmentally friendly construction materials for marina facilities, proper design of the boat wash area, proper design of trash storage areas, regular sweeping of parking areas, proper storage and use of fertilizer and pesticides used in landscaping, and a dog waste bag station in the linear park to promote pet waste control. • All runoff from the Project site, including roof and parking areas, will be directed to vegetated swales within the parking lot medians and perimeter of the site. • Public education materials available from the LA County Department of Public Works and the Coastal Commission's Marina Tool Kit (CCC, 2004) will be distributed to new tenants. These materials promote awareness and activities for preventing the introduction of pollutants into the marina and storm drain system. Example topics and fact sheets are environmentally sound boating practices, trash and litter awareness, and motor oil recycling programs.

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
		• There will also be regular employee training about good housekeeping practices and policies; spill prevention practices and policies; educational material distribution; activity restrictions; and emergency response procedures. • Landscape areas will be planted with native and/or drought tolerant vegetation. Efficient irrigation systems (soil moisture or climate controlled) will be used for irrigation landscaped areas.
4. Protect Slopes and Channels	Project plans must include BMPs consistent with the SUSMP and applicable local ordinances to decrease the potential of slopes and/or channels from eroding and impacting stormwater runoff.	• The Project will have limited potential for soil erosion from due to the gentile topography and high impervious cover, and because the Project drains to the Marina del Rey harbor. Landscape areas will be designed and maintained to limit soil erosion by promoting establishment and growth of healthy vegetation and reducing exposed soils.
5. Provide Storm Drain System Stenciling and Signage	• All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language and/or graphical icons to discourage illegal dumping. • Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area. • Legibility of stencils and signs must be maintained.	• All storm drain inlets and water quality inlets will be stenciled or labeled. Signage prohibiting dumping and illegal discharges to the harbor will be posted at the public access points (boat ramps, linear park area). • The site facilities managers will maintain stencils and signs.
6. Properly Design Outdoor Material Storage Areas	• Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system measures to mitigate impacts must be included.	• Outdoor material storage areas are not anticipated as part of boat transport and storage operations. The County Sherriff's boatwright shop will be located in the southeast corner of the site. The Sherriff's Department will conduct ongoing maintenance activities, and any outdoor material storage areas associated with these activities will be designed in accordance with the County site design requirements. The Sherriff's Department will be responsible for ensuring the proper use, handling, and storage of any solvants, paints, and other hazardous materials.
7. Properly Design Trash Storage	All trash containers must meet the following structural or treatment control	• All trash facilities will be covered and isolated from stormwater runoff.

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
Areas	BMP requirements: • Trash container areas must have drainage from adjoining roofs and pavement diverter around the areas. • Trash container areas must be screened or walled to prevent offsite transport of trash.	
8. Provide Proof of Ongoing BMP Maintenance	• Applicant required to provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, and/or Conditional Use Permits.	• The site facilities manager will be responsible for ensuring the ongoing maintenance of BMPs.
9. Design Standards for Structural or Treatment Control BMPs	Post-construction Structural or Treatment Control BMPs shall be designed to: Mitigate (infiltrate or treat) stormwater runoff from either: a) Volumetric Treatment Control BMPs b) Flow-based Treatment Control BMPs AND Control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.	• Stormwater treatment facilities will be designed to meet or exceed the sizing standards outlined in the LA County SUSMP manual. • Vegetated swales will be used as the treatment control BMPs for the entire site. • The vegetated swales are sized in accordance with flow-based sizing criteria. The swales will be sized to collect and treat the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity. • The size and design of the swales will be finalized during the design stage by the project engineer with the final hydrology study, which will be prepared and approved to ensure consistency with the EIR analysis prior to issuance of a final grading permit.
10.B.1 Properly Design Loading/ Unloading Dock Areas (100,000 ft^2 Commercial Developments)	• Cover loading dock areas or design drainage to minimize run-on and runoff of stormwater • Direct connections to storm drains from depressed loading docks (truck wells) are prohibited	• Loading docks are not included in the proposed Project.
10B.2. Properly Design Repair/ Maintenance Bays (100,000 ft^2 Commercial Developments)	• Repair/ maintenance bays must be indoors or designed in such a way that does not allow stormwater run-on or contact with stormwater runoff. • Design a repair/maintenance bay drainage system to capture all wash water, leaks, and spills. Connect drains to a sump for collection and disposal. Direct connection of the	• The Project will include three 30 by 35 foot boat maintenance bays. The maintenance bays will be indoors, on the ground floor of the Dry Stack Building. The maintenance bays will be deigned to control and contain drainage with the maintenance area, and to isolate the maintenance bay from stormwater runoff. All floor drains will be connected to the sanitary sewer. Any

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
	repair/ maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.	maintenance bays or maintenance facilities associated with the Sherriff's boatwright shop will be designed in accordance with the County design standards. Specifically the maintenance facilities would be indoors, and would be isolated from the storm drain system.
10B.3. Properly Design Vehicle/ Equipment Wash Areas (100,000 ft^2 Commercial Developments)	• Self-contained and /or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer.	• Drainage from the boat wash area will be treated in a clarifier and discharged to the sanitary sewer. The entire boat wash area will isolated from the storm drain system by a cover and site grading.
10.C. Properly Design Equipment/ Accessory Wash Areas (Restaurants)	• Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer. • If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer.	• The Project does not include restaurants or outdoor wash areas, other than the boat wash area discussed above.
10.D. Properly design fueling area (Retail Gasoline Outlets)	• Fuel dispensing area must be covered with an overhanging roof structure with an area greater than the area of the grade break, and may not drain onto the fuel dispensing area. • Fuel dispensing area must be paved with concrete and no asphalt. The concrete fueling area must extend 6.5 ft past the fuel dispenser, or 1-foot greater than the length of the hose and nozzle, whichever is less. • Fuel dispensing have a 204% slope to prevent ponding, and separated from the site by grade breaks.	• A dockside fueling station is under consideration for the proposed Project. Any fueling facilities included in the Project will be designed in accordance with appropriate design criteria for such facilities, and as required by the Los Angeles County Fire Department.
10.E.1-4. Properly design automotive repair shops	• Automotive repair shops must comply with various design requirements.	• The Project does not include public/retail automotive repair facilities. The Project may include automotive repair facilities in association with the new Sheriff's Boatwright/Lifeguard Facility. Any automotive repair facilities associated with the Sherriff's boatwright shop will be designed in accordance with the County design standards. The LA County Sheriff's Department is responsible for the design of their Sheriff's Boatwright/ Lifeguard Facility.
10.F.1. Properly Design Parking Area (Parking	• Reduce impervious land coverage of parking areas • Infiltrate runoff before it reaches the	• Stormwater runoff from parking lots will be directed to treatment control BMPs in compliance with SUSMP

SUSMP Requirement	Criteria/ Description	Corresponding Project PDFs
Lots)	storm drain system • Treat runoff before it reaches storm drain system	requirements. • Parking lot runoff will be treated with vegetated swales, which will provide treatment by filtration, sedimentation, and adsorption and will contribute to runoff volume reduction by soil soaking and drying.
10.F.2 Properly Design to Limit Oil Contamination and Perform Maintenance (Parking Lots)	• Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used. • Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal	• Treatment of runoff in vegetated swales will be used to address oil and petroleum hydrocarbons from high-use parking lots as appropriate. • The site facilities manager will be responsible for maintenance of the parking lots, which will include regular sweeping and litter pickup, ongoing monitoring and restriction of improper activities such as oil changing and boat maintenance, and the immediate attention to spills of oils or other hazardous materials.
13. Limitation of Use of Infiltration BMPs	• Infiltration is limited based on design of BMP, space requirements, soil permeability.	• The site is not suitable for infiltration type BMPs due to the shallow groundwater and poorly draining soils. The vegetated swales will provide some runoff volume reduction through soil soaking and drying, particularly for small storms and any dry weather nuisance flows.

5.2 Treatment BMPs

Treatment controls selected for the Project are vegetated swales that will be incorporated into the parking lot medians and perimeter landscaping. Vegetated swales were selected because they provide effective water quality treatment, provide some volume reduction of small storm runoff and dry weather nuisance flows, and because they are an approved treatment BMP in the Los Angeles County SUSMP (LACDPW, 2002). The selection of swales is also consistent with recommendations for greater use of vegetated treatment BMPs found in various policy and guidance documents including: a recent clarification letter from the LARWQCB (December, 2006) to the Los Angeles County regarding the development planning program requirements in the County NPDES Permit; in recent Coastal Commission staff recommendations on the Marina del Rey LCP review (CCC, 2007), and in marina BMP guidance documents (CCC, 2004).

Vegetated swales are engineered vegetation-lined channels that provide water quality benefits in addition to conveying stormwater runoff. Swales provide pollutant removal through settling and filtration in the vegetation lining the channels and also provide the opportunity for volume reductions through infiltration and evapotranspiration. Studies examining the water quality treatment performance of swales have found that properly designed and maintained swales can provide effective removals of stormwater pollutants, particularly sediments and pollutants associated with sediments such as total metals, organics, and total phosphorus, which are pollutants of concern for the Project (Wright Water Engineers 2000; Caltrans, 2004, Barrett et al., 1987; Nara and Pitt, 2005; USEPA, 2001). Swales have been shown to provide lesser removals of dissolved constituents such as nitrate, but can provide significant runoff volume reduction through infiltration. Swales are most effective where longitudinal slopes are small (two to six percent) and swale lengths are long, thereby increasing the residence time for treatment, and where water depths are less than the vegetation height (Walsh et al., 1998).

The vegetated swales included in the Project will be designed in accordance with SUSMP design criteria, and will be used to treat runoff from the entire Project site, including roof runoff from the dry-stack structure and the visitor facilities building. The vegetated swales in combination with the site design and source control BMPs described in Table 5.1 will effectively address all pollutants of concern.

5.3 Treatment BMP Sizing

Preliminary sizing of treatment BMPs in accordance with the Los Angeles County SUSMP (LACDPW, 2002) was conducted to develop sizing information needed in the water quality assessment.

The vegetated swales were sized in accordance with flow-based sizing option 1, which requires the treatment of all runoff from a rainfall intensity of 0.2 inches/hr. The average annual volume capture of the swales was quantified through continuous hydrologic simulation using long-term hourly precipitation data from the LAX gauge. Analysis of available hourly precipitation records indicated that the swales would capture and treat more than 85 percent of the average annual runoff from all rainfall intensities less than or equal to 0.2 inches/hour. For purposes of water quality modeling and the Impact Assessment we have assumed a conservation 80 percent runoff capture efficiency, consistent with option 2 of the volume based sizing requirements in the Los Angeles County NPDES Permit.

Final sizing and design of treatment BMPs will be prepared during the final design stage of the Project by the Project engineer based on the final hydrology study. Final design plans will be prepared and reviewed by the County prior to issuance of a grading permit.

5.4 Operation and Maintenance

The site facilities manager will be responsible for inspection and maintenance of structural BMPs within the Project site and adjacent sidewalk areas. Table 5-2 lists the potential operation and maintenance (O&M) activities for vegetated swales and the frequencies at which O&M activities will be conducted. Because swales are not designed to result in ponding or standing water, no vector control problems are anticipated.

Table 5-2: Water Quality BMP Operation and Maintenance Activities

Treatment Control BMP	Operation & Maintenance Category	Activities	Frequency	Typical Maintenance Equipment
Vegetated Swales	Routine Facility Maintenance	Facility inspection Trash and debris removal Minor sediment removal	Visual inspection will be conducted monthly, or more frequently as needed, such as after major storms. Trash and sediment removal will be conducted monthly, after major storms, or more frequently as needed.	Pickup truck
	Vegetation/ Landscape Maintenance	Integrated Pest/Plant Management Minor Vegetation Removal/ Thinning	Monthly or more frequently as needed.	Pickup truck Stakebed truck
	Major Maintenance	Major vegetation removal/ planting Major sediment removal	As required (annually or less frequently)	Pickup truck Stakebed truck

6 WATER QUALITY ANALYSIS APPROACH

6.1 Quantitative Impact Analysis Approach for Surface Water

6.1.1 Model Description

A water quality model was used to estimate pollutant loads and concentrations in stormwater runoff from the Project for certain pollutants of concern for pre-development conditions and post-development conditions with PDFs. The stormwater model is an empirical, land-use based, pollutant loads model that is appropriate for planning level assessment. The model used in this work was developed in spreadsheet format and utilizes available stormwater monitoring and rainfall data, as well as a relationship for the prediction of runoff volumes. The model is capable of estimating changes in runoff volumes, pollutant loads, and resulting pollutant concentrations that may occur with changes in land-use and/or implementation of treatment BMPs. A description of the water quality model is presented in Appendix A. The following summarizes major features of the water quality model:

- *Rainfall Data*: Locally representative rainfall data are used to estimate the annual runoff volume from storm events. A long term average annual precipitation of 12.4 inches was used in the model based on 57 years of precipitation records (1949-2006) collected at LAX. This station is less than 5 miles from the Project. Additionally, hourly rainfall records collected at this station were used for BMP sizing and volume capture analysis.
- *Land Use Runoff Water Quality*: The concentration of pollutants in runoff from storm events is estimated based on existing and proposed land uses in the project area. The pollutant concentrations for various land uses are estimated from regional land use based monitoring information collected in Los Angeles County (LACDPW, 2000). These data are represented by statistical descriptions of the Event Mean Concentration (EMC) determined from the monitoring data. The LACDPW database was chosen for use in this model because it includes an extensive compilation of stormwater quality information, it contains monitoring data from land use specific drainage areas, and the data are representative of the semi-arid conditions in Southern California.
- *Areas Modeled*. Pre- and post-development pollutant loadings are estimated for the entire Project site. The tributary drainage areas and impervious cover for the modeled areas was determined from the Project Hydrology report.
- *PDFs Modeled*: The model estimates pollutant removals occurring with the structural treatment PDFs (vegetated swales). However, the model does not take into account the site design and source control PDFs (e.g., street sweeping, site design, public education, employee training), all of which are also expected to improve water quality, but are not easily quantifiable. In this respect, the modeling results are conservative, i.e., tend to overestimate pollutant loads and concentrations.

- *Treatment Effectiveness*: The effectiveness of treatment PDFs is estimated through consideration of the following three factors:
    1. The amount of runoff processed by the treatment facilities. The water quality model takes into account conditions when the treatment facility is full and flows bypass the facilities.
    2. The reduction in runoff volume due to infiltration and evaporation occurring in the vegetated treatment BMPs. Reduction in runoff volume in these facilities can be significant, on the order of 20 to 40 percent, especially for the more frequently occurring small storm events.
    3. The mean effluent water quality for treatment BMPs was based on the International Stormwater BMP Database (ASCE/EPA, 2004). The International Stormwater BMP Database was used because it is a robust, peer reviewed database that contains a wide range of BMP effectiveness studies that are reflective of diverse land uses.
- *Model Output*: The water quality model generates an estimate of average annual runoff volumes, average annual pollutant loads, and average concentrations in stormwater runoff. The model does not forecast stormwater characteristics for specific storms or monitoring periods. Actual runoff volumes, concentrations, and loads are variable with expected values less than and greater than the estimated averages.

6.1.2 Pollutants Modeled

The appropriate form of data used to address water quality are flow composite storm event samples, which are a measure of the average water quality during the event (ASCE/USEPA, 2002). Obtaining such data usually requires automatic samplers that collect data at a frequency that is proportionate to flow rate. The pollutants of concern for which there are sufficient flow composite sampling data in the Los Angeles County database are:

- Total Suspended Solids (sediment)
- Total Phosphorus
- Nitrate-Nitrogen, Ammonia-Nitrogen, and TKN
- Total and Dissolved Copper
- Total Lead
- Total and Dissolved Zinc

These pollutants listed above were addressed quantitatively using the pollutant loads model to estimate stormwater pollutant concentrations and loads under the pre- and post-development conditions.

6.2 Qualitative Impact Analysis Approach

Some pollutants of concern are not amenable to flow composite sampling either because of short holding times, difficulties in obtaining a representative sample, or low detection levels. Also, BMP treatment effectiveness data is lacking for some constituents. Due to the lack of statistically reliable monitoring data, a qualitative approach based on literature information and best professional judgment was used to assess post development stormwater quality impacts associated with the following pollutants of concern:

- Pathogens (Bacteria, Viruses, and Protozoa)
- Hydrocarbons (Oil and Grease)
- Trash and Debris
- Chlordane & PCBs

Human pathogens are usually not directly measured in stormwater monitoring programs because of the difficulty and expense involved; rather, indicator bacteria such as fecal coliform or certain strains of *E. Coli* are measured. However, these indicators are not very reliable measures of the presence of pathogens in stormwater, in part because stormwater tends to mobilize pollutants from many sources, some of which contain non-pathogenic bacteria. For this reason, and because holding times for bacterial samples are necessarily short, most stormwater programs do not collect flow-weighted composite samples that potentially could produce more reliable statistical estimates of concentrations. Fecal coliform and *E. Coli* are typically measured with grab samples, making it difficult to develop reliable EMCs (i.e. an average concentration of the runoff event). Total coliform and fecal bacteria (fecal coliform, fecal streptococcus, and fecal enterococci) were detected in stormwater samples tested in Los Angeles County at highly variable densities (or most probable number, MPN) ranging between several hundred to several million colony forming units (CFUs) per 100 ml (LACDPW, 2000).

Hydrocarbons are difficult to measure because of laboratory interference effects and sample collection issues (hydrocarbons tend to coat sample bottles). Hydrocarbons are typically measured with single grab samples, making it difficult to develop reliable EMCs, for the reasons explained above.

Trash and debris are not typically included in routine urban stormwater monitoring programs. Several studies conducted in the Los Angeles River basin have attempted to quantify trash generated from discrete areas, but the data represent relatively small areas or relatively short periods, or both.

Chlordane and PCBs are legacy organochlorine compounds that have low water solubility and tend to adsorb to sediments. Therefore these compounds are not typically detected in the water column. The Los Angeles County stormwater monitoring data for land use-based samples included sampling for organochlorine pesticides and PCBs, however neither compound was detected in any of the 94 reported samples. Due to the lack of monitoring data, EMCs cannot be developed for modeling purposes.

Also addressed qualitatively are potential construction-phase water quality impacts principally from runoff and dewatering discharges during construction, and dry weather runoff water quality impacts.

7 IMPACT ASSESSMENT

The impact assessment analyses for individual pollutants of concern are presented in Section 7.1 for the modeled pollutants and in Section 7.2 for those pollutants addressed qualitatively.

Following the pollutant-by-pollutant impact assessment are analyses of dry weather impacts; compliance with NPDES Permit requirements; compliance with construction-related requirements of the Construction General Permit; the Dewatering General Permit; and an assessment of cumulative impacts. A weight of evidence approach is employed to evaluate significance using the various thresholds and significance criteria discussed in Section 4.3.

7.1 Post Development Stormwater Runoff Impact Assessment for Modeled Pollutants of Concern

Table 7-1 summarizes the predicted changes in stormwater runoff volume and average annual pollutant loads that are discharged from the Project area to the Marina del Rey harbor. Table 7-2 shows the predicted changes in average concentration in stormwater runoff. Both the pollutant loads and pollutant concentrations are predicted to decrease with construction of the Project. A decrease in the pollutant discharges occurs because 1) the Project entails re-development of highly impervious areas with similar but slightly lower levels of impervious cover, and 2) because stormwater discharges to the harbor are untreated in the existing conditions, but will treated in the proposed condition in vegetated treatment BMPs which have been shown to provide effective removals of the pollutants of concern, as well as runoff volume reduction through infiltration and evaporation.

Table 7-1: Predicted Average Annual Wet Weather Runoff Volume and Pollutant Loads

Parameter	Pre-Development Conditions	Developed Conditions w/ PDFs	Total Change with Project
Volume (acre-ft)	2.9	2.8	-0.1
TSS (lbs/yr)	866	465	-400
Total Phosphorous (lbs/yr)	3.2	2.9	-0.3
Ammonia–N (lbs/yr)	8.5	2.5	-6.0
Nitrate-N (lbs/yr)	5.1	4.3	-0.7
TKN (lbs/yr)	24.3	18.2	-6.1
Total Copper (lbs/yr)	0.28	0.13	-0.2
Dissolved Copper (lbs/yr)	0.10	0.07	-0.04
Total Lead (lbs/yr)	0.12	0.10	-0.02
Total Zinc (lbs/yr)	2.7	0.73	-2.0
Dissolved Zinc (lbs/yr)	1.8	0.42	-1.3

Table 7-2: **Predicted Average Annual Wet Weather Pollutant Concentrations**

Parameter	Pre-Development Conditions	Developed Conditions w/ PDFs	Total Change with Project
TSS (mg/L)	109	62	-47
Total Phosphorous (mg/L)	0.4	0.4	-0.02
Ammonia–N (mg/L)	1.1	0.3	-0.7
Nitrate-N (mg/L)	0.6	0.6	-0.1
TKN (mg/L)	3.1	2.4	-0.6
Total Copper (ug/L)	35	17	-18.0
Dissolved Copper (ug/L)	13	9	-4.1
Total Lead (ug/L)	15	14	-1.0
Total Zinc (ug/L)	339	97	-242
Dissolved Zinc (ug/L)	221	56	-165

The following subsections discuss the model results summarized above. The model results for each pollutant are evaluated in relation to the following significance criteria: (1) comparison of post-development versus pre-development stormwater quality concentrations and loads; (2) comparison with Los Angeles County MS4 Permit, Construction General Permit, and General Dewatering Permit requirements for new development; and (3) evaluation relative to receiving water quality benchmarks. Criterion 2 is analyzed qualitatively throughout the section. Pursuant to the third criterion, predicted runoff pollutant concentrations in the post-development are compared with benchmark receiving water quality criteria as provided in the Basin Plan, CTR and TMDLs. Because the water quality criteria do not apply directly to runoff from the Project, they are used for only comparison purposes to evaluate potential impacts. A weight of evidence approach is employed in this analysis considering the various significance criteria.

7.1.1 Runoff Volume

Mean annual runoff volumes are not expected to change significantly because the project entails re-development of highly impervious areas with similar but slightly lower levels of impervious cover. The average annual runoff volume is estimated to decrease slightly, about 0.1 acre-ft per year. Reduction in runoff volume is attributed to the increase in pervious area, and the drainage control plan that will direct all runoff through vegetated swales, which provide volume loss through soil soaking and drying, especially for the smaller more frequently occurring storms.

7.1.2 Total Suspended Solids (TSS)

Comparison of Pre- and Post-Project Conditions: The average annual sediment load and average TSS concentration in wet weather runoff from the Project site are predicted to decrease by approximately 45 percent with construction of the proposed Project (Table 7-1 & 7-2). A reduction in sediment loadings occurs because wet weather runoff from the site is currently untreated, whereas the proposed Project will result in the implementation of new treatment BMPs (vegetated swales) that have been found to provide a high level of treatment for sediments. The Project will not cause an increase in sediment loadings as a result of land use conversion or increased impervious cover because these characteristics are similar for both the pre- and post- redevelopment conditions. Also, site design and source control BMPs, which are not quantified in the water quality model, should further help to reduce sediment levels in the Project runoff. Site design and source control BMPs that reduce sediments include: design of waste storage areas that are isolated stormwater runoff, site designs that exclude outdoor maintenance activities, regular and proper maintenance of the vegetated treatment BMPs, and regular parking lot sweeping and litter pickup.

Comparison with Water Quality Criteria: The Basin Plan contains a narrative water quality objective for suspended solids, which is given in Table 7-3. The TSS concentration in stormwater runoff from the Project site is predicted to decrease by approximately 40 percent with the proposed re-development and implementation of effective treatment BMPs.

Based on the site design, source control, and treatment control strategy, and the comparison with basin plan benchmark objectives, the TSS in stormwater runoff from the Project will not cause a nuisance or adversely affect beneficial uses in the receiving waters.

Table 7-3: Comparison of Predicted TSS Concentrations with Water Quality Criteria

Parameter	Predicted Average Annual Project Concentration (mg/L)	LA Basin Plan Surface Water Quality Objectives
TSS	62	Water shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses

7.1.3 Nutrients

Comparison of Pre- and Post-Project Conditions: Total phosphorous concentrations and loads are predicted to decrease marginally with redevelopment due to installation of treatment BMPs for previously untreated drainage areas (Table 7-1 & 7-2). Site and source control BMPs should also help to reduce phosphorus loading.

Post-development nitrogen concentrations are particularly important for the inorganic species of nitrogen, namely ammonia and nitrite, as these species are more available for photosynthesis by algae and other plants, which can lead to low dissolved oxygen conditions. Water quality model predictions indicate the nitrate and ammonia loads and concentrations will decrease with re-development (Table 7-1 & 7-2). This result is mainly attributed to: 1) the use of vegetated treatment BMPs which provide some load reduction through runoff volume reduction, and 2) by the change in land use, as the existing maintenance facilities were represented by runoff EMCs from light industrial land uses, which have higher levels of ammonia and nitrate than runoff from commercial areas that were used to represent the proposed conditions. Source control BMPs, which are not quantified in the water quality model, will further help to reduce sources of nitrate-nitrogen and ammonia-nitrogen.

TKN consists of dissolved and particulate organic nitrogen and inorganic nitrogen in the form of ammonia. TKN loads and concentrations are estimated to decrease with construction of the Project due to installation of treatment BMPs in previously untreated drainage areas (Table 7-1 & 7-2). Vegetated swales are effective for reducing TSS, including particulate organic nitrogen which is a major component of TKN.

Project BMPs include site design, source control, and treatment control PDFs in compliance with the SUSMP requirements. Site design and source control BMPs that target nutrients include proper use and storage of fertilizers for landscape areas, pet waste management in the linear park, the use of native and/or non-invasive vegetation, and the use of efficient irrigation systems.

Comparison with Water Quality Criteria: The Los Angeles Basin Plan contains a narrative objective for total phosphorous, ammonia, and TKN, which is given in Table 7-4. The predicted average nitrate concentration in stormwater runoff from the Project site is well below the Basin Plan objective (Table 7-4). Considering that the Project would include new treatment BMPs that are predicted to reduce loading and concentrations of TP, TKN, ammonia, and nitrate, and that site design and source control BMPs would also be expected to reduce biostimulatory substances, it is unlikely that the proposed re-development Project will promote (i.e., increase) algae growth. Therefore, the proposed Project complies with the narrative objective for biostimulatory substances in the Basin Plan and with the numeric objective for nitrate.

Based on the site design, source control, and treatment control strategy, and the comparison with benchmark Basin Plan objectives and TMDL wasteload limitations, potential impacts associated with nutrients are predicted to be less than significant.

Table 7-4: Comparison of Predicted Nutrient Concentrations with Water Quality Criteria

Parameter	Predicted Average Annual Project Concentration (mg/L)	LA Basin Plan Surface Water Quality Objectives
Total Phosphorous	0.4	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
TKN	2.4	
Total Ammonia - N	0.3	
Nitrate-N	0.6	10

7.1.4 Metals

Comparison of Pre- and Post-Project Conditions: Average annual wet weather loads and concentrations of the modeled trace metals are predicted to decrease with construction of the Project (Table 7-1 & 7-2). This is attributed to the installation of treatment BMPs in previously untreated catchments, and because pre- and post-development land use and impervious cover is similar.

Project PDFs include site design, source control, and treatment control BMPs in compliance with the SUSMP requirements, but only treatment control BMPs were quantified in the water quality model. Site design and source control BMPs that target trace metals include: conveying all runoff from the Project site to vegetated treatment BMPs; site designs that exclude outdoor maintenance activities; use of environmentally friendly construction materials for docks and harbor site facilities; regular and proper maintenance of the vegetated treatment BMPs; and regular parking lot sweeping and litter pickup. The selected treatment BMPs (vegetated swales) have been shown to provide effective removal of trace metals.

Comparison with Water Quality Criteria: A narrative objective for toxic substances in the Basin Plan states that all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

The CTR criteria are the applicable water quality objectives for protection of aquatic life. The CTR criteria are expressed for acute (1 hour) and chronic (4-day average) conditions; however, only acute conditions were considered to be applicable for stormwater discharges because the duration of stormwater discharge is consistently less than 4 days. The CTR saltwater acute criteria for the modeled trace metals are shown in Table 7-5, where they are compared with the predicted average concentration in the Project runoff.

While saltwater in Basin H is the principal receiving water, there is a potential for Project runoff to reach adjacent offsite vacant areas (Area A) by flow through the existing tidal channel. Under this scenario, the surface water in the vacant areas (Area A) could be a mixture or freshwater and saltwater. Therefore, for comparative purposes, Table 7-5 also shows the CTR freshwater acute criteria. The saltwater criteria are more stringent, with the exception of lead, and predicted lead concentrations in Project runoff are well below the freshwater criterion (Table 7-5). For these reasons, the saltwater criteria are used for comparison with the predicted average concentration in the Project runoff.

The predicted average concentration of total lead and dissolved zinc in the Project runoff are both below the saltwater CTR criteria. However, the predicted concentration of total zinc in the Project runoff is about equal to the saltwater CTR criteria, and the predicted concentrations of total and dissolved copper are both above the saltwater CTR criteria. The CTR criteria are strictly applicable only in the Project receiving waters and are not enforceable to the Project area discharges to the storm sewer. Because the Project is predicted to result in a significant decrease in loads and concentration of all modeled trace metals, it is concluded that the Project would not cause a significant adverse impact to the ambient water quality of the receiving waters with regard to the modeled trace metals.

The CTR saltwater criteria for copper are very low. Consequently, Regional Boards and permittees are faced with the problem of how to economically meet these criteria. The San Francisco Regional Board recently noted that effluent limits for dissolved copper to San Francisco Bay (based on the current CTR objectives) are not being consistently met despite the performance of treatment control, source control, and pollution prevention measures (SFRWQCB, 2007). Moreover, there is evidence that the dissolved metal criterion may be overly protective of aquatic health because only a small fraction of the dissolved metals are bioavailable (i.e. not all of the metals are adsorbed to a level that would promote toxicity) (Timperley, 1999). On the basis of similar evidence, the San Francisco Regional Board recently adopted a Basin Plan amendment for site specific water quality objectives in the San Francisco Bay. This amendment increases the dissolved salt water copper objectives from the CTR level of 4.8 ug/L (acute) to 10.2 ug/L (acute) for portions of the San Francisco Bay (SFRWQCB, 2007).

Based on foregoing considerations: 1) that the treatment BMP strategy for the Project is predicted to significantly reduce loads and concentrations of trace metals from the Project site; 2) that the Project site design and source control BMPs will also help to reduce loadings and concentration of trace metals; 3) that there is evidence indicating that only a small fraction of the dissolved copper in the receiving water is likely to be bioavailable; and 4) that site specific dissolved saltwater copper objectives have been adopted for the San Francisco Bay, it is concluded that the potential Project impacts associated with trace metals are less than significant.

Table 7-5: Comparison of Predicted Metals Concentrations with Water Quality Criteria

Parameter	Predicted Average Annual Project Concentration (μg/L)	LA Basin Plan Surface Water Quality Objectives	CTR Saltwater Acute Criteria (μg/L)	CTR Freshwater Acute Criteria [4] (μg/L)
Total copper	17.5	All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.	5.8 [1]	14
Dissolved Copper	9.0		4.8	13.4
Total Lead	13.5		221 [2]	82
Total Zinc	97		95 [3]	120
Dissolved Zinc	56		90	117

1/ Based on the CTR total to dissolved metal conversion factor for the copper saltwater acute criteria = 0.83
2/ Based on the CTR saltwater acute criterion for dissolved lead and the CTR total to dissolved metal conversion factor = 0.951
3/ Based on the CTR total to dissolved metal conversion factor for the zinc saltwater acute criteria = 0.946
4/ Based on an assumed hardness of 100 mg/L

7.2 <u>Post Development Impact Assessment for Pollutants of Concern Assessed Qualitatively</u>

The qualitative impact assessment is based on information in the literature and professional judgment.

7.2.1 Pathogens

Pathogens are viruses, bacteria, and protozoa that can cause illness in humans. Identifying pathogens in water is difficult as the number of pathogens is exceedingly small requiring sampling and filtering large volumes of water. Traditionally water managers and regulatory agencies have relied on measuring "pathogen indicators", such as total and fecal coliform, as an indirect measure of the presence of pathogens. Although such indicators were considered reliable for sewage samples, indicator organisms are not necessarily reliable indicators of viable pathogenic viruses, bacteria, or protozoa in stormwater because coliform bacteria, in addition to being found in the digestive systems of warm-blooded animals, are also found in plants and soil. Certain pathogen indicators can multiply in the field if the substrate, temperature, moisture, and nutrient conditions are suitable. Paulsen and List (2005) summarize the debate over the use of pathogenic indicators and point out that scientific studies show little or no correlation between fecal coliform densities and gastrointestinal illness rates in swimmers, and therefore may not indicate a significant potential for causing human illness. In a recent field study conducted by Schroeder et al. (2002), pathogens (in the form of viruses, bacteria, or protozoa) were found to occur in 12 of 97 samples taken, but the samples that contained pathogens did not correlate with the concentrations of indicator organisms.

The primary sources of fecal coliform from the Project site would likely be sediments, shore birds, urban wildlife, pet wastes (though not likely a major source), and potentially re-growth in the storm drain itself. Other sources of pathogens and pathogen indicators, such as cross connections between sanitary and storm sewers, are unlikely given modern sanitary sewer installation methods and inspection and maintenance practices. Another potential source is from boat owners who illegally dispose of sewage from boat holding tanks directly into the harbor. While boat owners are individually responsible for managing boating sewage, the Project will address this potential source by including on-site sewage pump-out facilities. These facilities will provide customers with more convenient options for sewage disposal, which should reduce the likelihood of illegal disposal.

The levels of bacteria in runoff from the proposed Project will be controlled by treatment and source control BMPs. Although the selected treatment BMPs (vegetated swales) have been found to provide limited or no treatment for bacteria (Clary et al., 2008), some reduction of indicator bacteria would likely occur with the Project construction because treatment BMPs will be implemented for areas that currently receive no treatment and because the swales are expected to reduce runoff volumes, which will have an associated reduction in bacteria loads. In addition, source control BMPs that will address indicator bacteria include on-site pump out facilities, public education on appropriate practices for managing boating sewage, employee training regarding activity restrictions and distribution of public education materials, ongoing maintenance of the treatment BMPs, and regular parking lot sweeping and litter pickup.

In summary, the Project, consistent with the Los Angeles County MS4 Permit requirements, includes treatment and source control PDFs that will help to manage pathogen indicators. The Project would not result in appreciable changes in pathogen levels in the receiving waters, and may result in a reduction of pathogen levels from the Project site runoff due to installation of treatment controls in pre-development watersheds that are built-out and currently have no stormwater treatment controls. Therefore, the potential water quality impacts related to pathogens are considered less than significant.

7.2.2 Petroleum Hydrocarbons

Various forms of petroleum hydrocarbons (e.g., oil and grease, fuels) are common constituents associated with urban runoff. These constituents are difficult to measure and are typically measured with grab samples, making it difficult to develop reliable EMCs for modeling. Based on this consideration, hydrocarbons were not modeled but are addressed qualitatively.

Petroleum hydrocarbons are hydrophobic (low solubility in water), have the potential to volatilize, and most forms are biodegradable. A subset of petroleum hydrocarbons, Polynuclear Aromatic Hydrocarbons (PAHs) can be toxic depending on the concentration levels, exposure history, and sensitivity of the receptor organisms. Of particular concern are those PAH compounds associated with transportation-related sources.

Both pre- and post development land use (parking, maintenance areas, boat storage) are potential sources of petroleum hydrocarbons from automobile exhaust and leaks from cars and boats. However, in the proposed Project the County Sheriff’s Boatwright/Lifeguard Facility would be redesigned using current design standards, and the existing petroleum hydrocarbon contaminated soil and groundwater (associated with the Sherriff’s maintenance facilities) would be remediated[4]. Also runoff volume will not increase with construction of the Project, but instead would decrease slightly due to an increase in pervious area. Therefore, the re-development Project would not result in an increase in petroleum hydrocarbon concentrations and loads relative to the pre-development conditions. Moreover, the Project will include source control and treatment control PDFs that will further reduce hydrocarbons loadings. Source control PDFs that address petroleum hydrocarbons are BMP maintenance, regular sweeping of parking lot, activity restrictions, and public education. Vegetated swales, which have been found

[4] Existing soil contamination on the Project site is associated with County activities. The County will remediate contaminated soils per Regional Board requirements. Soil remediation activities will be managed by the County and are not component of the proposed Project.

to provide good removals of hydrocarbons from stormwater, will be installed in areas that receive no treatment in the pre-development condition. Considering the similar pre- and post-development land uses and the source and treatment control BMPs, it is likely that the proposed Project will result in a reduction of the petroleum hydrocarbon concentrations and loadings to the receiving waters in the Marina del Rey harbor.

The Project will include permanent on-site storage of petroleum hydrocarbons such gasoline for dock-side fueling. The fuel tank may be either an above ground or underground storage tank, to be determined during the final design stage of the Project. Accidental spills and leakage from the storage tank is a potential source of hydrocarbons to the Project receiving waters. However, pursuant to the requirements of the California Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) the Project will implement spill prevention measures to reduce the risk of accidental spills and leaks of hazardous materials to the environment. The Unified Program was created in 1993 to consolidate administration of six hazardous materials and waste programs under one agency, a Certified Unified Program Agency (CUPA). The Los Angeles County Fire Department is the CUPA with jurisdiction in the Project location. Applicable requirements include:

- *Design standards*. Design of fuel storage facilities must conform to design standards, including standards for primary and secondary containment systems, piping systems, under dispenser containment, fill and/or piping sumps, overfill protection, automated leak detection system monitors, and fueling/storage areas designed with minimum stormwater exposure (i.e. routing stormwater runoff around storage and fueling areas, covered areas, perimeter drains, etc). Design standards are enforced during permitting and plan check review and by site inspections.
- *Hazardous materials storage disclosure*. Owners/operators of businesses that handle or store hazardous materials above threshold quantities must submit annual inventory forms.
- *Training programs*. Hazardous materials handlers must develop and implement training programs and must maintain documentation of training programs, including training records of personnel, and attendance rosters. Training programs must include:
  - Methods of safe handling of hazardous materials
  - Procedures for coordination with local emergency response organizations
  - Use of emergency response equipment and supplies under control of the handler
  - Training in the emergency response plan and procedures
- *Spill prevention plans*. Owners/operators of above ground storage tanks must prepare a Spill Prevention Control & Countermeasure Plan (SPCC) in accordance with the oil pollution prevention guidelines in the Federal Code of Regulations (40 CFR 112). These plans must include procedures, methods, and equipment at the facility to prevent discharges of petroleum from reaching navigable waters.
- *Inspections*. The County CUPA agencies conduct annual inspections of underground storage tanks, monitoring equipment and tank records. CUPA agencies are also required

to inspect above ground storage tanks and verify hazardous materials storage disclosure and SPCC plans.

- *Spill reporting.* State and federal laws require that hazardous material handlers immediately report significant or threatened releases of hazardous materials to the environment to appropriate agencies (i.e. 911, fire department, HazMat responders, etc). State and federal agencies may require subsequent investigation and clean-up of hazardous materials spills

Compliance with these requirements constitutes a PDF, and on this basis, the impacts of hazardous materials storage and handling are considered less than significant.

During the construction phase of the Project, hydrocarbons in site runoff could result from construction equipment/vehicle fueling or spills. Construction related impacts are addressed in Section 7.4 below. However, pursuant to the Construction General Permit, the Construction Stormwater Pollution Prevention Plan must include BMPs that address proper handling of petroleum products on the construction site, such as proper petroleum product storage and spill response practices, and those BMPs must effectively prevent the release of hydrocarbons to runoff per the Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology standards. Hydrocarbons that are adsorbed to sediment during the construction phase would be effectively controlled via the erosion and sediment control BMPs. For these reasons, construction-related impacts related to hydrocarbons on water quality are considered less than significant.

On the basis of the foregoing discussion, the Project impacts on petroleum hydrocarbon levels in the receiving waters are considered less than significant.

7.2.3 Trash and Debris

Urban development tends to generate significant amounts of trash and debris. Trash refers to any human-derived materials including paper, plastics, metals, glass and cloth. Debris is defined as any organic material transported by stormwater, including leaves, twigs, and grass clippings. Trash and debris contribute to the degradation of receiving waters by imposing an oxygen demand, attracting pests, disturbing physical habitats, clogging storm drains and conveyance culverts and mobilizing nutrients, pathogens, metals, and other pollutants that may be attached to the surface. Sources of trash in developed areas can be both accidental and intentional. During storm events, gross debris deposited on paved surfaces can be transported to storm drains, where it can be eventually discharged to receiving waters. Trash and debris can also be mobilized by wind and transported directly into waterways.

Parking and commercial land uses, which are the pre- and post-redevelopment land uses, are major sources of trash in urban settings. Because the pre- and post redevelopment land use and impervious cover are similar, the proposed Project will not likely cause an increase in trash loading to the receiving waters. Moreover, the source and treatment control BMPs that will be implemented with the Project will help to reduce trash loading to the Marina del Rey harbor. Source controls include: regular sweeping of parking areas; storm drain stenciling; litter control; BMP maintenance; covered trash receptacles, and emptying of trash receptacles in a timely fashion. The selected treatment controls (vegetated swales) will provide a high level of treatment for trash in areas that receive little to no treatment under the pre-development condition. Based on these considerations, post-development trash and debris is not expected to significantly impact the receiving waters.

During the construction phase of the Project, there is potential for an increase trash and debris loads due to lack of proper contractor good housekeeping practices at the construction site, though this is not expected. Per the Construction General Permit, the SWPPP for the site will include BMPs for trash control (catch basin inserts, good housekeeping practices, etc.). Compliance with the Permit Requirements and inclusion of these BMPs, meeting BAT/BCT, included in the SWPPP will mitigate impacts from trash and debris to a level less than significant. See Section 7.4 below for a full discussion of Construction Related Impacts.

7.2.4 Chlordane and PCBs

Chlordane and PCBs are toxic chlorinated compounds that are strongly persistent in the environment, have low solubility in water, and tend to adsorb to fine particulates. Chlordane is a legacy pesticide, and PCBs were historically used for industrial applications. Both compounds are no longer in use. Chlordane and PCBs are TMDL constituents in the Marina del Rey back basins. The TMDL report states that the primary source of these compounds in the harbor is stormwater runoff carrying historically deposited chlordane and PCBs, most likely attached to eroded sediment particles.

It is not known if chlordane or PCBs are present in the Project site soils. Although there is no evidence or cause to suspect the presence of these compounds, farming is listed as a former land use on the Project site (Methane Specialists, 2007) and it is conceivable that PCBs could have been used in former maintenance activities on the site.

The potential for erosion and transport of on-site soils by stormwater runoff in the existing and post-development conditions is greatly limited by the high levels of impervious cover (~90 percent). Also, in the post-development conditions, all Project site runoff will be directed to vegetated swales, which have been shown to be effective at reducing suspended sediment concentration in stormwater runoff.

The greatest potential for transport of any legacy chlordane or PCBs adsorbed to existing site sediments is likely to occur during the construction phase of development. Construction-related impacts are addressed in Section 7.4 below. The SWPPP must contain sediment and erosion control BMPs pursuant to the General Construction Permit, and those BMPs must effectively control erosion and the discharge of sediment along with other pollutants per the BAT/BCT standards.

Based on the high levels of impervious cover in the proposed Project, and the post-development and construction related sediment control measures, the impacts of the Project on chlordane and PCBs in the receiving waters is considered less than significant.

7.3 Los Angeles County MS4 Permit Requirements for New Development as Defined in the SUSMP

PDFs include site design, source control, and treatment control BMPs in compliance with the SUSMP requirements, as described in Section 5.1 and summarized in Table 5-1. Treatment control PDFs will treat runoff from the entire Project area, as well as some of the adjacent streets that currently receive no treatment. Sizing criteria contained in the Los Angeles County MS4 Permit and the SUSMP requirements will be met for all treatment control BMPs.

In summary, the proposed site design, source control, and treatment control PDFs have been selected for the Project based on:

- Effectiveness for addressing pollutants of concern in runoff from the Project, resulting in insignificant water quality impacts;
- Sizing and outlet design consistent with the Los Angeles County MS4 Permit and SUSMP requirements;
- Additional design guidance consistent with the California BMP Handbook (2003): New Development and Redevelopment, other literature, and best professional judgment;
- Meeting mean annual percent capture criteria contained in the California BMP New Development Manual; and
- Providing specific O&M requirements to inspect and maintain the facilities.

On this basis, the proposed PDFs for the Project meet the benchmark Los Angeles County MS4 Permit requirements for new development and significant redevelopment.

7.4 Construction-Related Impacts

The potential impacts of construction activities, construction materials, and non-stormwater runoff on water quality during the construction phase focus primarily on sediment (TSS and turbidity) and certain non-sediment related pollutants. Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization by rainfall/runoff, truck traffic, and wind. Such activities include grading of the site, and trenching and excavation for infrastructure improvements. Environmental factors that affect erosion include topographic, soil, and rainfall characteristics.

Non sediment-related pollutants that are also of concern during construction include construction materials (e.g., paint, stucco, etc); chemicals, liquid products, and petroleum products used in building construction or the maintenance of heavy equipment; and concrete-related pollutants. In addition the Phase I Environmental Assessment (Methane Specialists, 2007) identified issues of concern related to past activities on the Project site and the documented presence of hydrocarbons in the soils and groundwater.

Construction impacts due to Project development will be minimized through compliance with the Construction General Permit. This permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must include erosion and sediment control BMPs that will meet or exceed measures required by the Construction General Permit, as well as BMPs that control the other potential construction-related pollutants. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. A SWPPP will be developed as required by, and in compliance with, the Construction General Permit and the County of Los Angeles Standard Conditions. The LARWQCB has inspection and enforcement authority for the General Permit. The General Permit requires the SWPPP to include a menu of BMPs to be selected and implemented based on the phase of construction and the weather conditions to effectively control erosion and sediment to the BAT/BCT.

The following types of BMPs will be implemented during construction as necessary:

- Erosion Control (BMPs numbered EC-3 through EC-7 and WE-1 in the Stormwater Best Management Practice Handbook - Construction (CASQA, 2003))
  - Physical stabilization through hydraulic mulch, soil binders, straw mulch, bonded fiber matrices, and erosion control blankets (i.e., rolled erosion control products).
  - Limiting the area and duration of exposure of disturbed soils.
  - Soil roughening of graded areas (through track walking, scarifying, sheepsfoot rolling, or imprinting) to slow runoff, enhance infiltration, and reduce erosion.
  - Vegetation stabilization through temporary seeding to establish interim vegetation.
  - Wind erosion (dust) control through the application of water or other dust palliatives as necessary to prevent and alleviate dust nuisance.
- Sediment Control
  - Preparation and implementation of a soil monitoring plan
  - Perimeter protection to prevent discharges through silt fences, fiber rolls, gravel bag berms, sand bag barriers, and straw bale barriers (SE-1, 5, 6, 8 and 9).
  - Storm drain inlet protection (SE-10).

- Resource (Environmentally Sensitive Area) protection through silt fences, fiber rolls, gravel bag berms, sand bag barriers, and straw bale barriers (SE-1, 5, 6, 8, and 9).
- Sediment capture through sediment traps, storm drain inlet protection, and sediment basins (SE-3, 10, and 2).
- Velocity reduction through check dams, sediment basins, and outlet protection/velocity dissipation devices (SE-2, 4, and 10).
- Reduction in off-site sediment tracking through stabilized construction entrance/exit, construction road stabilization, and entrance /exit tire wash (TE-1, 2 and 3).

- Waste and Materials Management
  - Management of the following types of materials, products, and wastes: solid, sanitary, concrete, hazardous and equipment-related wastes (MW-1, 2, and 4 through 10 and NS-8 through 10).
  - Protection of soil stockpiles through covers, the application of water or soil binders, and perimeter control measures (MW-3).

- Non-stormwater Management
  - BMPs or good housekeeping practices to reduce or limit pollutants at their source before they are exposed to stormwater, including such measures as: water conservation practices, vehicle and equipment cleaning and fueling practices (NS-1 through 16).
  - BMPs to reduce or eliminate the discharge of sediment or other pollutants due to construction activities within and adjacent to the waterway including: BMPs for pile driving operations (NS-11); BMPs for managing materials and equipment over water (NS-14); and BMPs for managing demolition adjacent to waterways (NS-15).

- Training and Education
  - Training of individuals responsible for SWPPP preparation, implementation, and permit compliance, including contractors and subcontractors.
  - Signage (bilingual, if appropriate) to address SWPPP-related issues (such as site clean up policies, BMP protection, washout locations, etc).

- Maintenance, Monitoring and Inspections
  - Performing routine site inspections and inspections before, during (for storm events > 24 hours), and after storm events.
  - Implementing maintenance and repairs of BMPs as indicated by routine and storm-event inspections.
  - Preparation and implementation of a Sampling and Analysis Plan for non-visible pollutants.

The significance criteria for the construction phase of the Project is implementation of BMPs consistent with Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology (BAT/BCT), as required by the Construction General Permit and the general waste discharge requirements in the General Dewatering Permit. The Project will reduce or prevent erosion and sediment transport and transport of other potential pollutants from the Project site during the construction phase through implementation of BMPs meeting BAT/BCT in order to prevent or minimize environmental impacts and to ensure that discharges during the construction phase of the Project will not cause or contribute to any exceedance of water quality standards in the receiving waters. These BMPs will assure effective control of not only sediment discharge, but also of pollutants associated with sediments, such as but not limited to, nutrients, heavy metals, hydrocarbons, chlordane, and PCBs, if any.

Construction on the Project site may require dewatering and non-stormwater related discharges. In general, the Construction General Permit authorizes construction dewatering activities and other construction related non-stormwater discharges as long as they (a) comply with Section A.9 of the General Permit; (b) do not cause or contribute to violation of any water quality standards, (c) do not violate any other provisions of the General Permit, (d) do not require a non-stormwater permit as issued by the RWQCBs, and (e) are not prohibited by a Basin Plan provision. Full compliance with applicable local, state and federal water quality standards by the applicant would assure that potential impacts from dewatering discharges are not significant.

The LARWQCB's General Waste Discharge Requirements (WDRs) under Order No. R4-2003-0111, NPDES No. CAG994004 govern construction-related dewatering discharges within the Los Angeles Region. Typical BMPs for construction dewatering include infiltration of clean groundwater; on-site treatment using suitable treatment technologies; on-site or transport offsite for sanitary sewer discharge with local sewer district approval; or use of a sedimentation bag for small volumes of localized dewatering. Compliance with these WDRs constitutes a PDF, further assuring that the impacts of these discharges are not significant.

On this basis, the impact of construction-related runoff from the Project is considered less than significant.

7.5 Dry Weather Runoff

The potential sources of dry weather flows from the Project site are landscape irrigation, pavement washing, and fire hydrant purging. The boat wash area will not be a source of dry weather flows because the drain will be connected to the sanitary sewer and the area will be isolated from stormwater runoff by grading and/or a cover. Other potential sources of dry weather flows that are unlikely to be a concern in the Project area include leaky or directly connected sanitary sewage and septic tanks, wash waters from laundry, and industrial wastewaters that discharge directly (via illicit connections) to the storm drain system.

Dry weather flows are typically low in sediment because the flows are relatively low and coarse suspended sediment tends to settle out or is filtered out by vegetation. As a consequence, pollutants that tend to be associated with suspended solids (e.g., phosphorous, some bacteria, some trace metals, and some pesticides) are typically found in low concentrations in dry weather flows. The focus of the following discussion is therefore on constituents that tend to be dissolved, e.g., nitrate and trace metals, or constituents that are so small as to be effectively transported, e.g., pathogens and oil and grease.

In order to minimize the potential generation and transport of dissolved constituents landscaping areas will utilize drought tolerant vegetation that requires little watering and chemical application. Landscape watering will use efficient irrigation technology such as utilizing evapotranspiration sensors to minimize excess watering. Illegal dumping will be discouraged by stenciling storm drain inlets. The vegetated swales will also help to reduce the volume of any dry weather runoff through soil soaking and drying. Pavement washing that results in runoff into the stormwater system, or any boat washing outside of the designated boat wash area will not be allowed.

On the basis that sources of dry weather flows in the Project area are limited, and that source and treatment control PDFs will reduce the amount of dry weather flows from landscape areas, the impact from dry weather flows is considered less than significant.

7.6 Cumulative Impacts

As discussed above, the anticipated quality of effluent expected from the Project's PDFs will not contribute loads or concentrations of pollutants of concern that would be expected to cause or contribute to a violation of the water quality standards in the Project's receiving waters. Therefore, the Project's incremental effects on surface water quality in the Marina del Rey harbor are not expected to be significant.

The Project's surface runoff water quality, after PDFs, both during construction and post-development, is predicted to comply with adopted regulatory requirements that are designed by the LARWQCB to assure that regional development does not adversely affect water quality, including MS4 Permit and SUSMP requirements; General Construction Permit requirements; General Dewatering Permit requirements; and benchmark Basin Plan water quality objectives, CTR criteria, and TMDLs. Any future urban development occurring in the Marina del Rey watershed must also comply with these requirements. Therefore, cumulative impacts on surface water quality of receiving waters from the Project and future urban development in the Marina del Rey watershed are addressed through compliance with the MS4 Permit and SUSMP requirements; General Construction Permit requirements; General Dewatering Permit requirements; and benchmark Basin Plan water quality objectives, CTR criteria, and TMDLs, which are intended to be protective of beneficial uses of the receiving waters. Based on compliance with these requirements designed to protect beneficial uses, cumulative water quality impacts are mitigated to a level that is less than significant.

8 CONCLUSIONS

This report addressed the potential effects of the proposed Project on water quality in receiving waters of the Marina del Rey harbor. Quantitative and qualitative analyses support the following conclusions regarding the significance of impacts for the pollutants of concern in stormwater runoff, as well as other conditions that have the potential to affect water quality in the Project receiving waters:

- ***Sediments*****:** Los Angeles County MS4 Permit, Construction General Permit, Dewatering General Permit, and SUSMP-compliant BMPs will be incorporated into the Project to address sediment in both the construction phase and post-development. Average annual TSS loads and average concentrations in runoff from the Project site are predicted to decrease relative to the pre-development conditions. Turbidity in stormwater runoff will be controlled through implementation of a Construction SWPPP. On this basis, the impact of the Project on sediments is considered less than significant.
- ***Nutrients (Phosphorous and Nitrogen (Nitrate-N, Ammonia-N, and TKN))***: Los Angeles County MS4 Permit, Construction General Permit, Dewatering General Permit, and SUSMP-compliant BMPs will be incorporated into the Project to address nutrients in both the construction phase and post-development. Average annual loads and average concentrations of total phosphorous, ammonia, nitrate-nitrogen, and TKN in stormwater runoff from the Project site are predicted to decrease. The predicted nutrient concentrations are not expected to cause increased algae growth or impairment of the receiving waters. On this basis, the impact of the Project on nutrients is considered less than significant.
- ***Trace Metals*****:** Los Angeles County MS4 Permit, Construction General Permit, General Dewatering Permit, and SUSMP-compliant BMPs will be incorporated into the Project to address trace metals in both the construction phase and post-development. Average annual loads and average concentrations of trace metals in stormwater runoff from the Project site are predicted to decrease. The average concentrations of total lead and dissolved zinc are predicted to be below benchmark CTR criteria, and the average concentration of total zinc and total and dissolved copper are predicted to be above the benchmark CTR criteria. The CTR criteria are applicable only in the Project receiving waters and are not enforceable to the Project area discharges. On the basis that the Project is predicted to result in a significant decrease in loads and concentration of all modeled trace metals, the impact of the Project on trace metals is considered less than significant.
- ***Pathogens*****:** Post-development pathogen sources include both natural and anthropogenic sources. The primary sources of fecal coliform from the Project site would likely be shore birds, urban wildlife, pet wastes (though not likely a major source), and potentially re-growth in the storm drain itself. The Project will not include septic systems and the sewer system will be designed to current standards which minimizes the potential for

leaks. Indicator bacteria will primarily be controlled through source control and treatment control BMPs. Pathogens are not expected to occur at elevated levels during the construction-phase of the Project. On this basis, the Project's impact on pathogen and pathogen indicators is considered less than significant.

- ***Hydrocarbons*****:** Hydrocarbon concentrations in runoff from the Project sire are likely to decrease in the post-development due to installation of effective treatment BMPs in built-out watersheds that do not currently receive treatment. In addition, sources of hydrocarbons will be reduced through implementation of source control BMPs (BMP maintenance and sweeping of parking lots, activity restrictions). The project site will include a fuel storage tank for boat refueling operations. The fuel storage and dispensing facilities will be designed and operated in compliance with all state and local regulatory requirements, which are enforced by the Los Angeles County Fire Department. During the construction phase of the Project, pursuant to the Construction General Permit, the Construction Stormwater Pollution Prevention Plan must include BMPs that address proper handling of petroleum products on the construction site, such as proper petroleum product storage and spill response practices, and those BMPs must effectively prevent the release of hydrocarbons to runoff per the Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology standards. On this basis, the impact of the Project on hydrocarbons levels in the receiving waters is considered less than significant.
- ***Trash and Debris*****:** Trash and debris in runoff are likely to decrease in post-development due to installation of effective treatment BMPs in built-out watersheds that do not currently receive treatment. In addition, source control BMPs such as street sweeping, covered trash receptacles, routine trash collection, and storm drain stenciling should further help to reduce trash loadings in runoff from the Project site. During the construction phase of the Project, PDFs implemented per General Permit and General De-Watering Permit requirements will remove trash and debris through the use of BMPs such as catch basin inserts and by general good housekeeping practices. Trash and debris are not expected to significantly impact receiving waters due to the implementation of the Project PDFs.
- ***Chlordane and PCBs:*** During post-construction, the potential for transport of any legacy chlordane or PCBs adsorbed to existing site sediments will be greatly limited by the high impervious cover, and by the use of the of vegetated treatment BMPs that are effective at reducing suspended sediment concentration in stormwater runoff. During the construction phase, the potential for transport of any legacy chlordane or PCBs adsorbed to existing site sediments will controlled by sediment and erosion control BMPs pursuant to the General Construction Permit, and those BMPs must effectively control erosion and the discharge of sediment along with other pollutants per the BAT/BCT standards. On this basis, the impact of the Project on chlordane and PCBs is considered less than significant.

- ***Construction Impacts:*** Construction impacts on water quality are generally caused by soil disturbance and subsequent suspended solids discharge. These impacts will be minimized through implementation of construction BMPs that will meet or exceed measures required by the Construction General Permit, as well as BMPs that control the other potential construction-related pollutants (hydrocarbons, metals). A SWPPP will be developed as required by, and in compliance with, the Construction General Permit and County of Los Angeles Standard Conditions. Sediment control BMPs, including but not limited to silt fence, sedimentation ponds, and secondary containment on stockpiles will be implemented to trap sediment once it has been mobilized. On this basis, the construction-related impact of the Project on water quality is considered less than significant.

- ***Regulatory Requirements:*** The proposed Project satisfies Los Angeles County MS4 Permit requirements for new development, including SUSMP requirements and SQMP requirements, and satisfies construction-related requirements of the Construction General Permit and General Dewatering Permit, and therefore complies with water quality regulatory requirements applicable to stormwater runoff.

- ***Dry Weather Flows.*** The potential sources of dry weather runoff in the Project area are limited and primarily include landscape irrigation, pavement washing, and fire hydrant purging. The boat wash area will not be a source of dry weather flows because the drain will be connected to the sanitary sewer and will be isolated from stormwater runoff. Source controls measures that will reduce dry weather flows are planting of native and drought tolerant plants, use of efficient irrigation systems, storm drain stenciling, and activity restrictions on pavement washing and boat washing outside of the designed boat wash facility. Any dry weather flows generated in the Project site would be directed to the vegetated swales where they would be subject to infiltration and evaporation. Based on these considerations, the impact of the Project from dry weather discharges is considered less than significant.

- ***Cumulative Water Quality Impacts.*** The proposed Project and any future projects in the Marina del Rey watershed must include PDFs (site design, source control, and treatment control BMPs) in compliance with the requirements of the MS4 Permit and the SUSMP Manual. In addition, the proposed Project, as well as any future projects in the Marina del Rey watershed must comply with the Construction General Permit and General Dewatering Permit. Each of these regulatory requirements is intended to be protective of water quality and beneficial uses in the project receiving waters. Therefore, compliance with the MS4 Permit, the SUSMP Manual, and the Construction General Permit and General Dewatering Permit requirements, indicates that cumulative water quality impacts will be mitigated to a level of insignificance.

- ***Flows to Offsite Vacant Areas (Area A).*** Project site runoff under existing and proposed conditions can potentially reach the offsite vacant areas south of Fiji Way (Area A) by conveyance through the existing tidal channel that crosses the Project site. Potential water quality impacts from the proposed Project to the offsite vacant areas (Area A) are concluded to be less than significant, based on following considerations: 1) the Project complies with the MS4 Permit, the SUSMP Manual, the Construction General Permit, and the General Dewatering Permit requirements; 2) the Project does not alter current drainage patterns to the offsite vacant areas (Area A) via the existing tidal channel; 3) the Project will implement a variety of source and treatment control BMPs for currently untreated areas of similar land use and impervious cover; and 4) post-construction average pollutant loads and concentrations in Project runoff to Basin H and the entrance to the tidal channel are predicted to be lower than existing levels.

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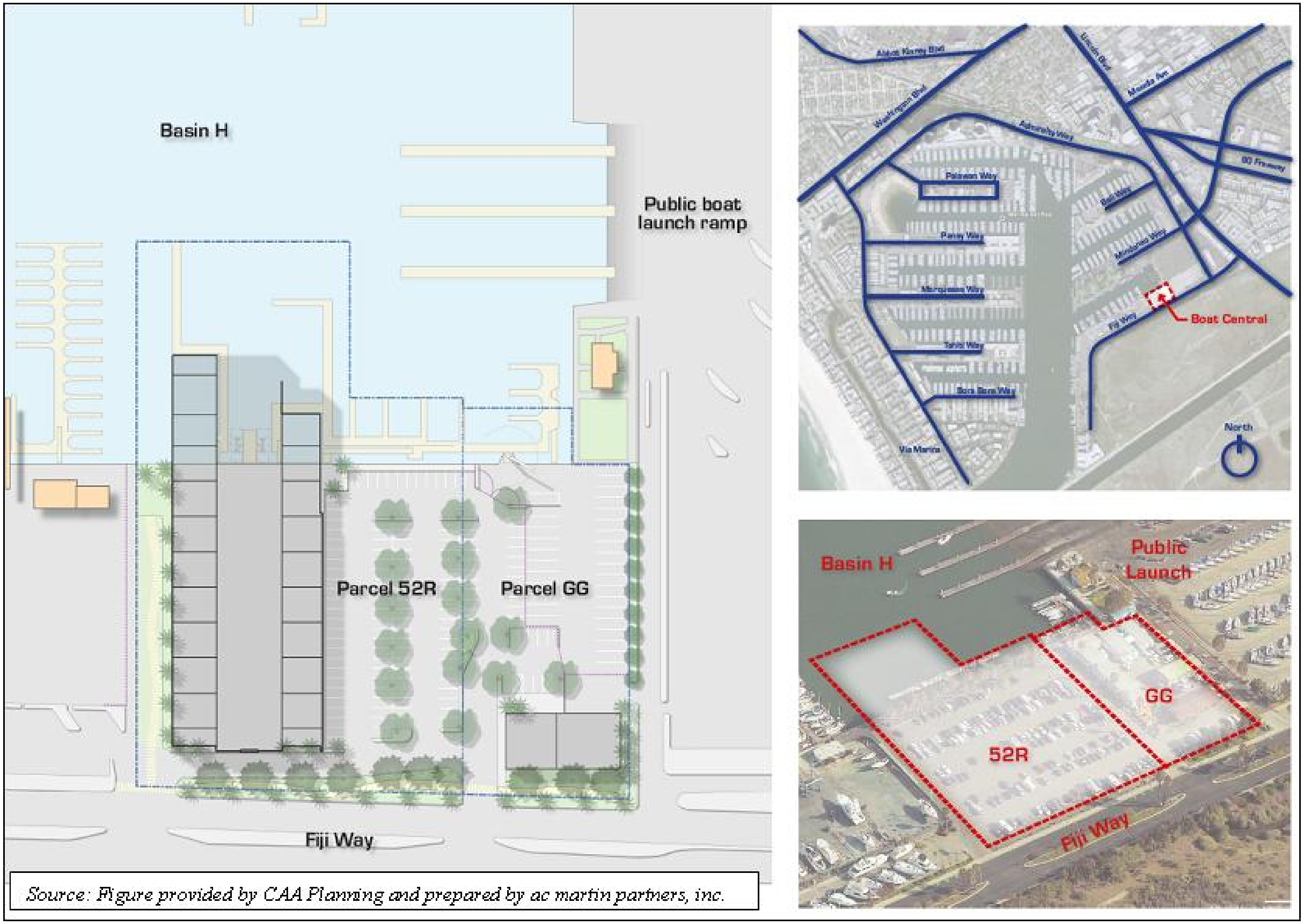
FIGURES



Source: Figure provided by CAA Planning and prepared by ac martin partners, inc.

Figure 1: Project Location Map

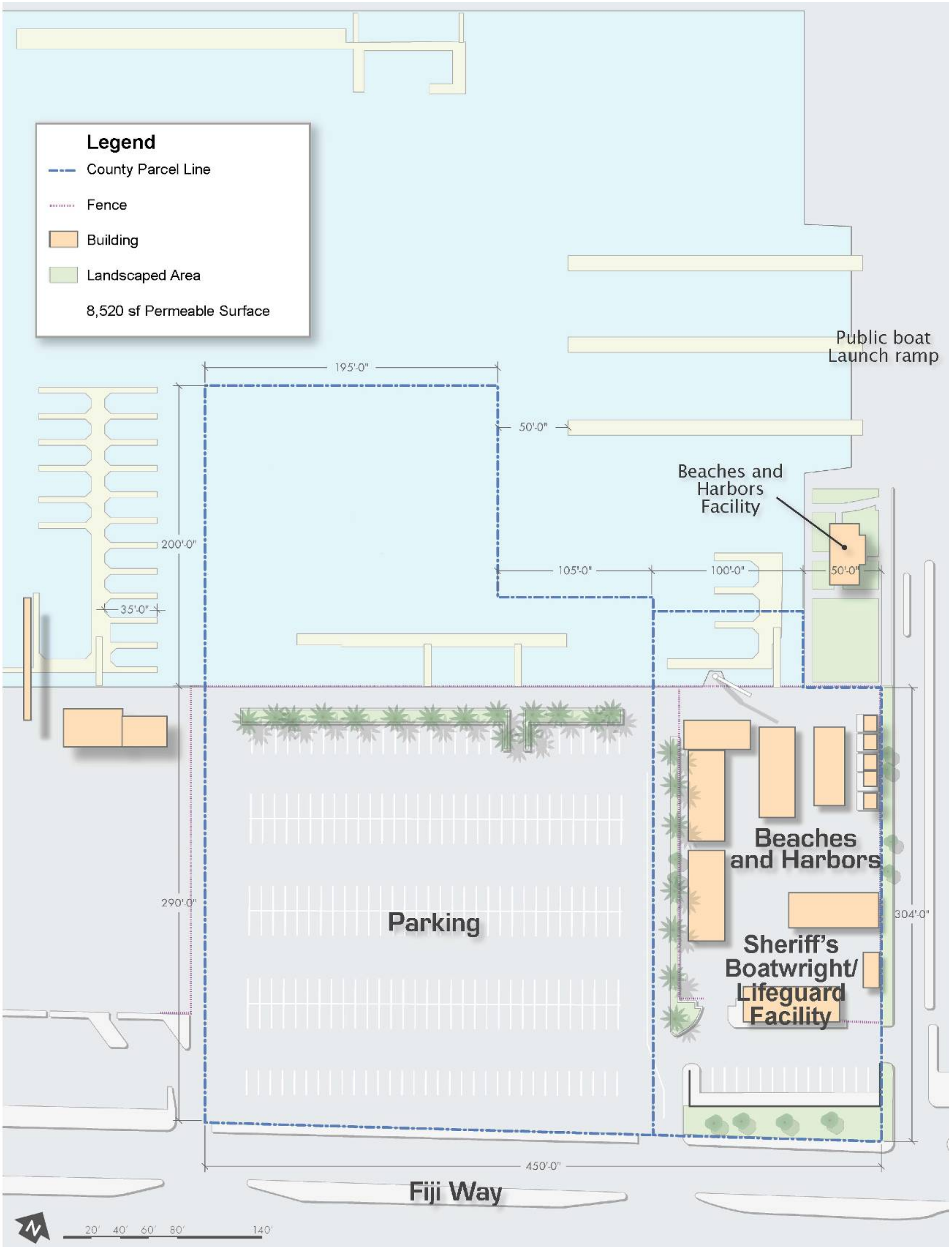


Figure 2: Existing Site Plan and Land Use

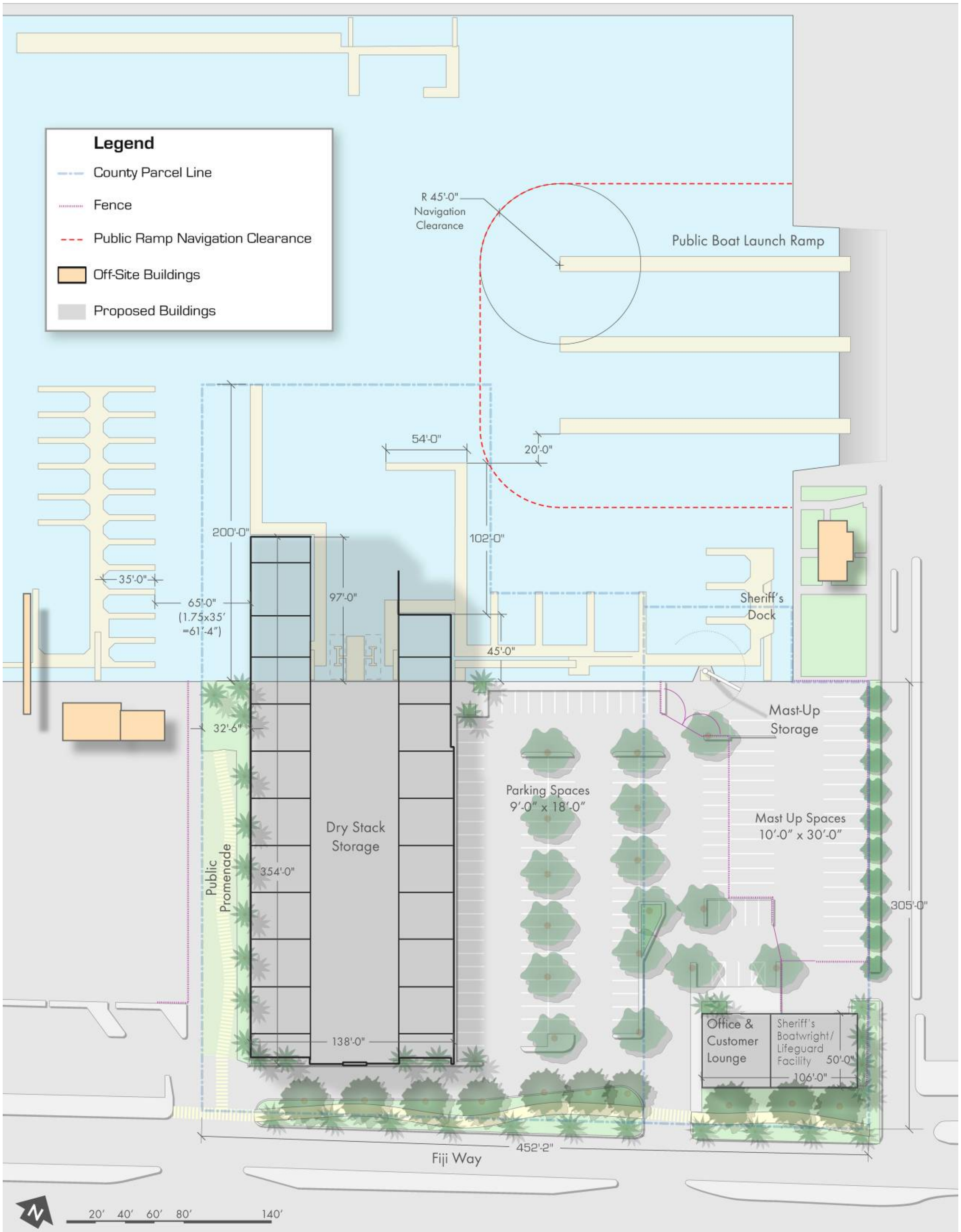


Figure 3: Proposed Site Plan and Land Use

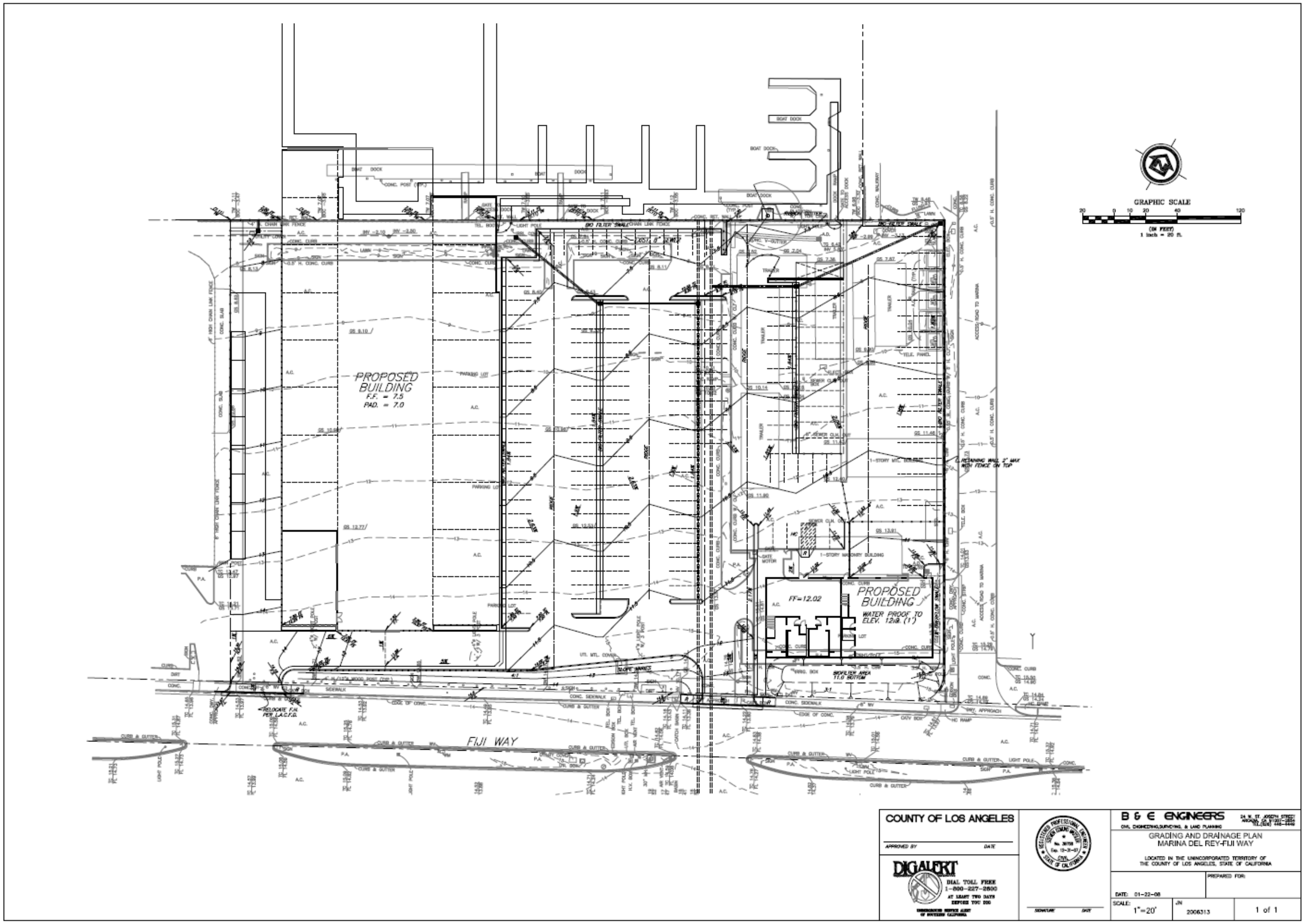


Figure 4: Proposed Drainage Plan

Water Quality Assessment for the
Boat Central Project

Appendix A - Water Quality Model Methodology and Results

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A.1 Model Description

The model used to assess stormwater quality impacts associated with the Boat Central Dry Stack Storage Project is an empirical, volume-based, pollutant loads model. Empirical models of this type are commonly used to estimate pollutant loads and/or concentrations in stormwater runoff. This type of loadings model is generally applicable in the planning and evaluation stages of a project. If reliable estimates of the effluent quality resulting from installation of BMPs are available, the model can be used to evaluate the effectiveness of proposed BMPs.

The model methodology is adapted from an empirical method that has been referred to as the Simple Method (Schueler, 1987). The model was developed to provide a simple yet effective method for predicting runoff volumes, pollutant loads, and resulting pollutant concentrations that result from development.

The pollutant loads model used in this work was developed in spreadsheet format and utilizes a relationship for the prediction of runoff volumes. The model is capable of estimating changes in runoff volumes, pollutant loads, and resulting pollutant concentrations on an annual basis that may occur with changes in land-use and/or implementation of treatment BMPs. The model does not simulate the hydraulics or hydrology of the site, which is appropriate for the project design stage and requires additional data and more sophisticated modeling. The model is capable of including the pollutant removal effects of structural BMPs, but does not account for the effectiveness of source control BMPs, because data are generally not available or are inconclusive for the latter. Model calculations produce average annual results and do not estimate the variation in stormwater loads or concentrations over storms or between storms.

A.2 Modeling Steps

The modeling methodology consists of the following steps:

1) Estimate the mean annual volume of rainfall that the watershed receives that exceeds its depression storage, infiltrative and evaporative capacity over a given period (one year);
2) Determine catchments boundaries, area, and land-use;
3) Estimate runoff using observed relationships from other studies between percent imperviousness and runoff volumes;
4) Estimate runoff water quality based on observed statistical data from similar land-use types;
5) Estimate pollutant loads by multiplying the concentration in stormwater runoff by the predicted runoff volume;
6) Sum the flows and loads from individual sub-areas just upstream of the BMPs and calculate average catchment area concentrations;
7) Estimate the treatment performance of the BMPs;

8) Estimate the capture efficiency of the treatment BMPs
9) Calculate the resulting post-development pollutant loads and concentrations;
10) Compare estimated post-development concentrations with pre-development conditions, appropriate water quality criteria, and/or water quality design standards; and
11) Compare pre and post-development loads.

The following sections describe the application of these modeling steps for water quality assessment of the Boat Central Dry Stack Storage Project.

A.3 Rainfall Data

A long-term average (57 years) annual rainfall value of 12.4 inches was used to estimate the rainfall experienced in the vicinity of the Project Site. This value was obtained from the Western Regional Climate Center for Station Number 045114 at Los Angeles International Airport in Los Angeles, California and represents the closest station with a long-term record. This station is less than 5 miles from the site.

A.4 Subwatershed Delineation and Properties

The proposed site will be a single-use development consisting of boat storage, a visitor facilities building, a boat wash and surface parking spaces. The subwatershed delineation of the modeled area for both existing and proposed conditions was determined from project drainage plan and accompanying CAD drawings provided by B&E Engineering (B&E Engineering, 2007). The proposed redevelopment area encompasses about 3.1 acres with paved surfaces, buildings and landscaped planter areas and 0.26 acre of Marina del Rey Harbor that will be covered by the dry-stack storage facility. Approximately 1 acre of Marina del Rey Harbor that is included in the affected parcels but will not be affected by the redevelopment is not included in the water quality model. The Project could accommodate up to a maximum of 345 boats and 24 boat trailers within the dry-stack structure and outside parking for 30 mast-up sail boats and a public waterside hoist. A public boat washdown facility will also be incorporated on-site. The Project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two story visitor facilities building has a gross floor area of 3,070 square feet and will house the Project office. The existing Sheriff's boatwright shop will be relocated to a new two story building adjacent to the visitor facilities building. The proposed Boatwright shop building has a gross floor area of 2,850 square feet with a 500 square foot second floor mezzanine), andan adjacent 2,200 square foot fence yard. The Sheriff's boat dock will remain.

The amount of impervious cover greatly influences the amount of runoff. The percentage of impervious cover was obtained from the project drainage plan (B&E Engineering, 2007). Figure A-1 shows the project site area that was modeled for the existing use water quality assessment. Since the drainage areas delineated for the existing conditions are the same as for the proposed developed conditions, a few of the existing trailers slightly overlap the drainage boundaries. In addition to the sub-catchment areas identified in the drainage plan, two new sub-catchment areas were delineated (8B and 9C), to more accurately model the water quality of the site. Figure A-2 shows the proposed site design including the water quality BMPs, proposed buildings and proposed open space areas.

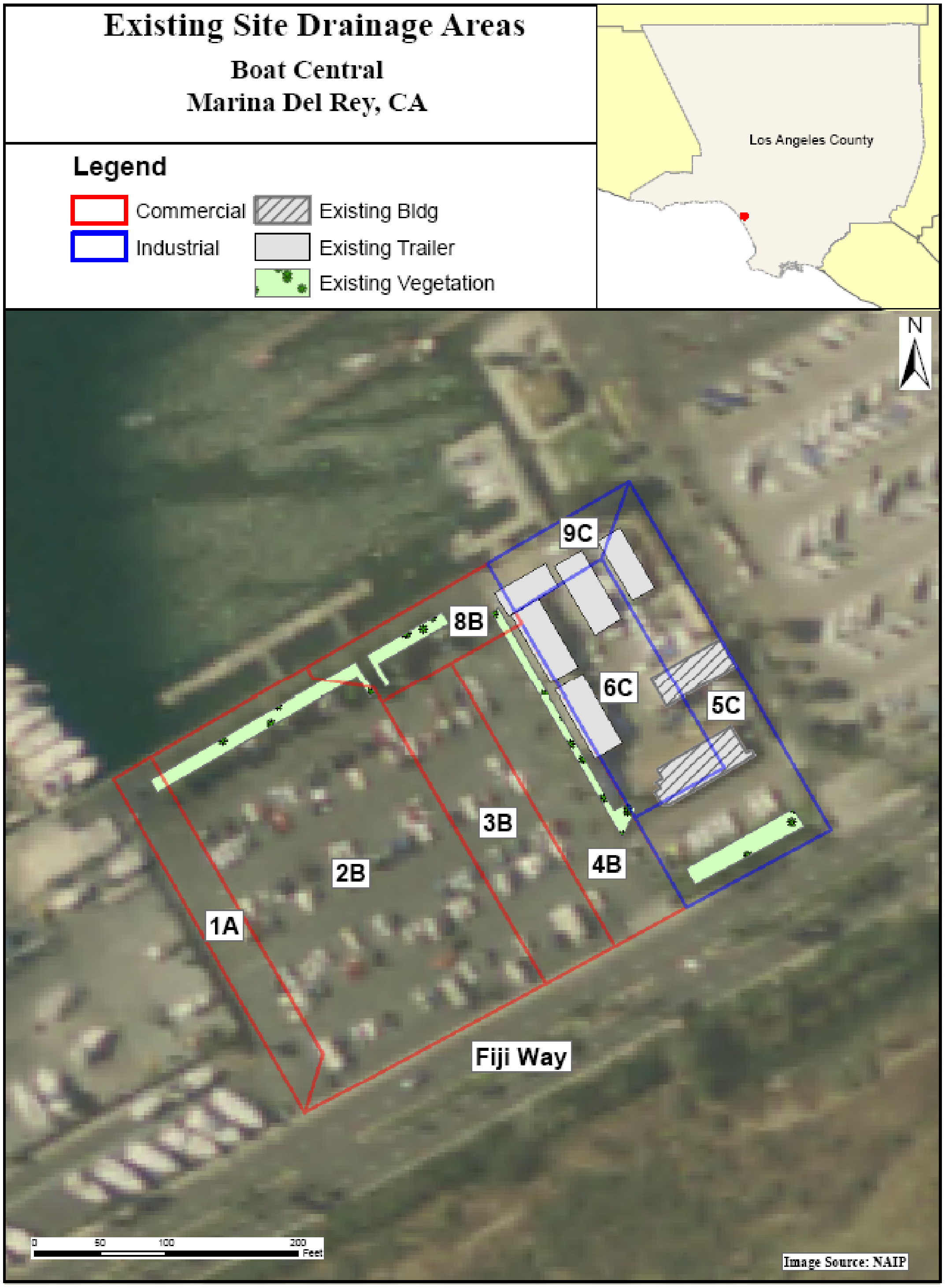

Figure A-1: Existing Condition Sub-catchment areas

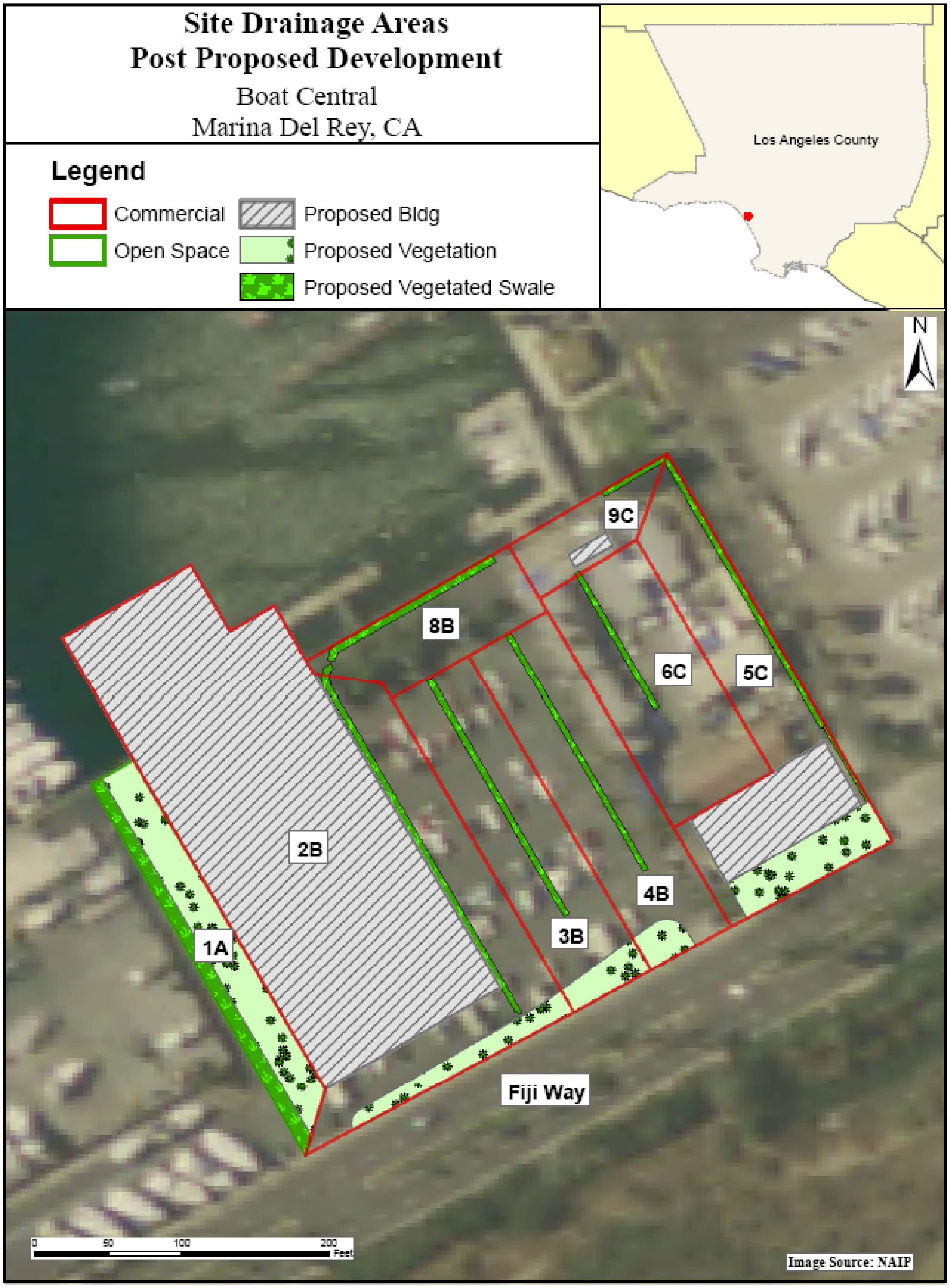

Figure A-2: Proposed Condition Sub-catchment areas

Table A-1 lists the sub-catchment properties of the project site shown in Figure A-1, including the area and percent imperviousness modeled for existing development and the proposed development conditions.

Table A-1: Model Catchments and Percent Impervious

	Existing Condition		Proposed Condition	
Catchment	**Area (acres)**	**%Impervious**	**Area (acres)**	**%Impervious**
1A	0.21	99%	0.21	29%
2B	1.17	97%	1.43	97%
3B	0.34	100%	0.34	92%
4B	0.35	92%	0.35	94%
5C	0.45	93%	0.45	83%
6C	0.32	100%	0.32	100%
8B	0.17	83%	0.17	100%
9C	0.085	100%	0.085	100%
Total	3.1	96%	3.36	90%

A.5 <u>Runoff Volume Calculation</u>

Runoff volumes are calculated using the Rational Equation (Novotny and Olem, 1994):

$$Q = Rv \times I \times A$$

where:

Q = runoff (volume or flow rate)
I = rainfall (depth or intensity) (inches or inches/hr)
A = drainage area (acres)
Rv = mean annual volumetric runoff coefficient (dimensionless)

The runoff coefficient is a unit-less value that is a function of the impervious cover of the watershed. The runoff coefficient was calculated with the following expression based on the Simple Method (Schueler, 1987):

$$Rv = 0.9 \times (\text{impervious fraction}) + 0.05$$

The Simple Method was selected over the method specified in the LA Hydrology Manual because it provides a more conservative estimate of runoff volumes (i.e., less runoff from open space areas and greater runoff from impervious areas).

An annual runoff volume was calculated for each catchment area using the equations described above, the catchment information described in Section A.4, and a mean annual rainfall of 12.4 inches (see Section A.3). The estimated mean annual runoff volumes for pre- and post-development conditions without treatment are shown in **Table A-2**.

Table A-2: Estimated Mean Annual Runoff Volumes

	Pre-Project Mean Annual Runoff Volume (Acre-ft)	Post-Project Mean Annual Runoff Volume without Treatment (Acre-ft)
1A	0.204	0.014
2B	1.11	1.33
3B	0.334	0.292
4B	0.317	0.313
5C	0.411	0.351
6C	0.314	0.309
8B	0.141	0.148
9C	0.098	0.080
Total	2.93	2.84

A.6 Stormwater Water Quality Estimation

The concentrations of stormwater runoff and resulting pollutant loads can be difficult to quantify. Many factors can affect stormwater quality including: source concentrations, topography, soil type, and rainfall characteristics. Moreover, these factors can be highly variable, both spatially and temporally.

A primary factor of stormwater quality is the type of land use within a watershed, which has been shown to significantly affect the types and concentrations of pollutants found in the runoff. Several studies have been conducted to characterize runoff quality as a function of land use. The Nationwide Urban Runoff Program (NURP) Final Report (USEPA, 1983) provides estimates of average or event mean concentrations (EMCs) for priority pollutants based on the predominant land use of the watershed. However, NURP is a national dataset that did not include sites in Southern California (Fresno was the closest site).

In 2001, the University of Alabama and the Center for Watershed Protection were awarded an EPA grant to collect and evaluate stormwater monitoring data from a representative number of NPDES MS4 stormwater permit holders. Monitoring data was collected from more than 200 municipalities located throughout the country and compiled into a single database known as the National Stormwater Quality Database (NSQD). To date, approximately 3,770 separate events collected and analyzed by 66 different factions from 17 states have been incorporated into the NSQD. The database is separated into 11 land use categories: residential, commercial, industrial, institutional, freeways, open space and 5 mixed land uses.

Regional land-use based stormwater quality monitoring data was collected through the LA County Stormwater Monitoring Program. This program was initiated with the goal of providing technical data and information to support effective watershed stormwater quality management programs in Los Angeles County. Specific objectives of this project included monitoring and assessing pollutant concentrations from specific land uses and watershed areas. In order to achieve this objective, the County undertook an extensive stormwater sampling project that included seven land use stations and five mass emission stations, which were tested for 82 water quality parameters. These data are presented in two published reports: *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, 2000 and Los Angeles County 2000-2001 Stormwater Monitoring Report, 2001.*

For this modeling effort, stormwater quality in the proposed Boat Central Dry Stack Storage project area was estimated with stormwater monitoring data collected by LA County (LA County, 2001). These data were used because of the relatively close location to the project site and because the monitored land uses were representative of the proposed development in the Central Dry Stack Storage Project. Monitoring data from industrial land uses were used to represent the existing maintenance areas and data from commercial land uses were used to represent the remaining existing area as well as much of proposed developed project area. The proposed park to the southeast of the Dry Stack Storage unit was modeled as Open Space. Table A-3 describes the LA County stormwater monitoring station. Table A-4 lists the land use categories that were used in each of the modeled drainage areas.

Table A-3: LA County Land Use Monitoring Stations Used for Water Quality Modeling

Station Name	Station	Modeled Land Use	Site Description	Years Monitoring Conducted
Project 1202	S24	Light Industrial	Located in the Dominguez Channel/Los Angeles Harbor Watershed in the City of Carson. The monitoring station is near the intersection of Wilmington Avenue and 220th Street. The overall watershed land use is predominantly industrial. Drainage area is approximately 685 acres.	1995-2001
Santa Monica Pier	S08	Commercial	The monitoring site is located near intersection of Appian Way and Moss Avenue in Santa Monica. The storm drain discharges below the Santa Monica Pier. Catchment area is approximately 81 acres. The Santa Monica Mall and Third St. Promenade dominate the watershed with remaining land uses consisting of office buildings, small shops, restaurants, hotels and high-density apartments.	1996-2000
Sawpit Creek	S11	Open Space (& Parks)	Located in Los Angeles River watershed in City of Monrovia. The monitoring station is Sawpit Creek, downstream of Monrovia Creek. Sawpit Creek is a natural watercourse at this location. Drainage area is approximately 3300 acres.	1995-2001

Source: (LA County, 2000)

Table A-4: Modeled Land Use by Catchment

Catchment	Modeled Land Use	
	Existing Conditions	Proposed Developed Conditions
1A	Commercial	Open Space
2B	Commercial	Commercial
3B	Commercial	Commercial
4B	Commercial	Commercial
5C	Industrial	Commercial
6C	Industrial	Commercial
8B	Commercial	Commercial
9C	Industrial	Commercial

The stormwater monitoring data were statistically characterized to develop an event mean concentration for each of the modeled pollutants. The statistical analyses take into account censored data where monitoring results are reported below the laboratory detection limit. The EMC values used in the pollutant loads model are presented in Table A-5.

Table A-5: EMC Mean Values used for Pollutant Loads Modeling

Pollutant	Units	Light Industrial	Commercial	Open Space
Total Suspended Solids	mg/L	219	67	207
Total Phosphorus	mg/L	0.39	0.40	0.14
Ammonia-Nitrogen	mg/L	0.60	1.25	0.11
Nitrate-Nitrogen	mg/L	0.87	0.55	1.2
Total Kjeldahl Nitrogen	mg/L	2.9	3.1	1.1
Total Copper	µg/L	46	31	13
Dissolved Copper	µg/L	15	12	0.6
Total Lead	µg/L	15	14	3
Total Zinc	µg/L	610	240	26
Diss. Zinc	µg/L	400	150	28

Source: (LA County, 2001) *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, 2000* and *Los Angeles County 2000-2001 Stormwater Monitoring Report, 2001*

A.7 Pollutant Loads and Concentrations without Treatment

The water quality model estimates the average annual pollutant loads in runoff from storm events. The pollutant load is the total mass (e.g. pounds) of pollutant in runoff during a given period of time. The pollutant load was calculated by multiplying the estimated mean annual runoff volume and the estimated pollutant concentration (EMC) using the following equation:

$$\underset{\text{Flow}}{\left(\frac{ft^3}{year}\right)} \times \underset{\text{EMC}}{\left(\frac{mg}{L}\right)} \times \underset{\text{Conversion Factor}}{\left(6.2428\times10^{-5}\,\frac{lbs/ft^3}{mg/L}\right)} = \underset{\text{Load}}{\left(\frac{lbs}{year}\right)}$$

Annual loads were calculated for all modeled pollutants within each modeled drainage area in the Boat Central Dry Stack Storage Project. The estimated loads for all modeled catchments are presented in Table A-6and Table A-7 for existing conditions and for the proposed project conditions without treatment BMPs, respectively.

Table A-6: Estimated Annual Pollutant Loads for Existing Conditions

Catchment	TSS (lb/yr)	TP (lb/yr)	NH_3-N (lb/yr)	NO_3-N (lb/yr)	TKN (lb/yr)	TCu (lb/yr)	DCu (lb/yr)	TPb (lb/yr)	TZn (lb/yr)	DZn (lb/yr)
1A	37.2	0.22	0.69	0.30	1.74	0.017	0.007	0.01	0.13	0.09
2B	202	1.21	3.78	1.66	9.47	0.095	0.037	0.04	0.72	0.46
3B	60.8	0.36	1.13	0.50	2.84	0.028	0.011	0.01	0.21	0.14
4B	57.7	0.34	1.08	0.47	2.70	0.027	0.011	0.01	0.20	0.13
5C	245	0.44	0.67	0.97	3.21	0.051	0.017	0.02	0.68	0.44
6C	187	0.33	0.51	0.74	2.45	0.039	0.013	0.01	0.52	0.34
8B	25.6	0.15	0.48	0.21	1.20	0.012	0.005	0.01	0.09	0.06
9C	49.7	0.09	0.14	0.20	0.65	0.010	0.003	0.00	0.14	0.09
Total	866	3.15	8.48	5.06	24.2	0.281	0.104	0.12	2.69	1.75

Table A-7: Estimated Annual Pollutant Loads for Project Conditions without BMPs

Catchment	TSS (lb/yr)	TP (lb/yr)	NH_3-N (lb/yr)	NO_3-N (lb/yr)	TKN (lb/yr)	TCu (lb/yr)	DCu (lb/yr)	TPb (lb/yr)	TZn (lb/yr)	DZn (lb/yr)
1A	115.76	0.08	0.06	0.656	0.622	0.007	0.000	0.00	0.015	0.02
2B	255.77	1.53	4.77	2.100	11.948	0.120	0.047	0.05	0.905	0.59
3B	60.81	0.36	1.13	0.499	2.841	0.028	0.011	0.01	0.215	0.14
4B	62.60	0.37	1.17	0.514	2.924	0.029	0.011	0.01	0.222	0.14
5C	80.49	0.48	1.50	0.661	3.760	0.038	0.015	0.02	0.285	0.18
6C	57.23	0.34	1.07	0.470	2.674	0.027	0.011	0.01	0.203	0.13
8B	30.41	0.18	0.57	0.250	1.420	0.014	0.006	0.01	0.108	0.07
9C	15.20	0.09	0.28	0.125	0.710	0.007	0.003	0.00	0.054	0.03
Total	678.27	3.44	10.56	5.273	26.901	0.271	0.104	0.12	2.005	1.30

An estimate of the average pollutant concentration in stormwater discharges from the modeled catchments was calculated from the estimated loads and runoff volumes, using the expression:

$$\underset{\text{Concentration}}{\frac{mg}{L}} = \left[\underset{\text{Total Load}}{\Sigma \frac{lbs}{year}} \div \underset{\text{Total Runoff}}{\Sigma \frac{ft^3}{year}} \right] \div \underset{\text{Conversion Factor}}{\frac{6.2428 \times 10^{-5}\ lbs/ft^3}{mg/L}}$$

The estimated average stormwater pollutant concentrations for all modeled drainage areas are presented in Table A-8 for the existing conditions. For the existing pre-development conditions, drainage areas were modeled with commercial land-uses, except for areas 5C, 6C and 9C, which were modeled with industrial land-uses (see Table A-4). The average pollutant concentrations in stormwater discharges under existing conditions are represented by EMCs for commercial and light industrial land-uses presented in Table A-5.

Table A-8: Estimated Average Pollutant Concentrations in Stormwater Discharges for Existing Conditions

Catchment	TSS (mg/L)	TP (mg/L)	NH_3-N (mg/L)	NO_3-N (mg/L)	TKN (mg/L)	TCu (μg/L)	DCu (μg/L)	TPb (μg/L)	TZn (μg/L)	DZn (μg/L)
1A	67.	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
2B	67.	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
3B	67.	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
4B	67.	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
5C	220	0.39	0.60	0.87	2.87	46.0	15.2	15.4	606	397
6C	220	0.39	0.60	0.87	2.87	46.0	15.2	15.4	606	397
8B	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
9C	220	0.39	0.60	0.87	2.87	46.0	15.2	15.4	606	397
Total Area	109	0.40	1.07	0.64	3.06	35.5	13.1	14.5	339	221

The estimated average stormwater pollutant concentrations for the proposed project conditions without treatment BMPs are presented in Table A-9 for all modeled drainage areas. For the proposed development conditions, drainage areas were modeled with commercial land-uses except for area 1A, which was modeled with an open space land-use (Table A-4). The average pollutant concentrations in stormwater discharges under proposed developed conditions are represented by EMCs for commercial and open space land-uses as presented in Table A-5.

Table A-9: Estimated Average Pollutant Concentrations in Stormwater Discharges for Project Conditions without BMPs

Catchment	TSS (mg/L)	TP (mg/L)	NH_3-N (mg/L)	NO_3-N (mg/L)	TKN (mg/L)	TCu (μg/L)	DCu (μg/L)	TPb (μg/L)	TZn (μg/L)	DZn (μg/L)
1A	206	0.14	0.11	1.17	1.11	13.2	0.60	3.0	26.3	28.1
2B	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
3B	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
4B	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
5C	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
6C	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
8B	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
9C	67	0.40	1.25	0.55	3.13	31.4	12.3	14.2	237	153
Total Area	75.73	0.38	1.18	0.59	3.00	30.3	11.6	13.5	224	146

A.8 BMP Performance

Runoff from the development area is assumed to be treated by vegetated swales. The performance of vegetated swales in treating stormwater runoff is assessed based on the following factors.

1. The amount (fraction) of stormwater that is processed by the treatment BMP, referred to as the percent capture.
2. The amount of volume reduction that occurs within the treatment BMP due to infiltration.
3. The reduction in pollutant concentration that occur as a result of processing by the treatment BMP.

The following describes the approach used to estimate each of these factors and how they were implemented in the water quality model.

A.8.1 Percent Capture

Flow based BMPs (e.g., vegetated swales, etc.) are designed to treat a minimum flow capacity based on SUSMP sizing criteria. High-intensity rainfall events can produce runoff rates that are in excess of the BMP design capacity. It was assumed that the flow based BMPs include mechanisms to bypass flows resulting from rainfall intensities in excess of the design rainfall intensity. Therefore, removals were only modeled for flows less than or equal to the design flow.

An analysis using the hourly precipitation data from the Los Angeles International Airport gauge was conducted to determine the average percent capture of storm runoff as a function of the design rainfall intensity. Results indicated that capturing runoff generated by rainfall intensities less than or equal to 0.2 in/hr (which is also a SUSMP requirement) would result in capture of over 80% of runoff on an annual basis. For the water quality model an 80% runoff capture by vegetated swales is assumed.

Table A-10 below shows the estimated average annual percent capture efficiency used in the water quality model.

Table A-10: Average Percent Capture Efficiency for Modeled BMPs

Proposed Stormwater Treatment	Average Annual Percent Capture
Vegetated Swale	80

A.8.2 Volume Reduction

A portion of the stormwater that is treated in detention basins and swales will infiltrate and/or evaporate, effectively reducing the runoff volume that is discharged to receiving waters. Analysis of influent and effluent data in the ASCE BMP database indicates that reductions can be significant, on the order of 30 percent for water quality basins and 38 percent for biofilters (e.g., vegetated swales) (Strecker et al. 2004). Volume reductions are included in the water quality model, however, smaller values are used to be conservative. A volume reduction of 20 percent of captured runoff was used for biofilters.

A.8.3 Pollutant Reduction

Various data sources were examined to estimate the anticipated performance of the treatment BMPs. A comprehensive source of BMP performance information is the American Society of Civil Engineers (ASCE) International Stormwater BMP Database (ASCE, 2001, Strecker et al., 2001). The ASCE BMP database is comprised of carefully examined data from a peer-reviewed collection of studies that have monitored the effectiveness of a variety of BMPs in treating water quality pollutants. Typical information included in each study is a description of the BMP, the drainage area with dominant land uses, influent concentrations, effluent concentrations, and removal efficiencies.

The ASCE database was used to quantify treatment performance of vegetated swales. Information in the database was evaluated to screen out BMP studies that are not representative of BMPs in the Boat Central Dry Stack Storage Project. Recent work in characterizing BMP performance suggests that effluent quality rather than percent removal is more reliable in modeling stormwater treatment (Strecker et al. 2001). Therefore, the effluent quality of the proposed treatment BMPs was represented with the mean effluent concentration of the screened storm event data from the ASCE database. Table A-11 presents the modeled effluent quality of biofilters based on information from the ASCE database.

Table A-11: Effluent Concentrations used to Estimate Treatment BMP Performance for the Vegetated Swales

Pollutant	Units	Biofilter
Total Suspended Solids	mg/L	57.5
Total Phosphorus	mg/L	0.4
Ammonia-Nitrogen	mg/L	0.06
Nitrate-Nitrogen	mg/L	0.92
Total Kjeldahl Nitrogen	mg/L	2.31
Total Copper	μg/L	13.5
Diss. Copper	μg/L	8.7
Total Lead	μg/L	14.8
Total Zinc	μg/L	59.9
Diss. Zinc	μg/L	27.4

A.9 Post-Project Loads and Concentrations

Average reductions in runoff volumes and pollutant loads achieved with the treatment BMPs were calculated using procedures and BMP performance information described above. Table A-2 presents the estimated average annual runoff volume. Table A-12 presents the estimated loads discharged to the receiving waters for post project conditions.

Table A-12: Estimated Annual Pollutant Loads for Project Conditions with BMPs

Catchment	TSS (lb/yr)	TP (lb/yr)	NH_3-N (lb/yr)	NO_3-N (lb/yr)	TKN (lb/yr)	TCu (lb/yr)	DCu (lb/yr)	TPb (lb/yr)	TZn (lb/yr)	DZn (lb/yr)
1A	43.8	0.07	0.03	0.46	0.52	0.006	0.000	0.001	0.012	0.013
2B	192	1.28	1.10	1.76	8.03	0.057	0.031	0.046	0.327	0.184
3B	45.6	0.30	0.26	0.42	1.91	0.014	0.007	0.011	0.078	0.044
4B	46.9	0.31	0.27	0.43	1.97	0.014	0.008	0.011	0.080	0.045
5C	60.3	0.40	0.35	0.56	2.53	0.018	0.010	0.014	0.103	0.058
6C	42.9	0.29	0.25	0.39	1.80	0.013	0.007	0.010	0.073	0.041
8B	22.8	0.15	0.13	0.21	0.95	0.007	0.004	0.005	0.039	0.022
9C	11.4	0.08	0.06	0.10	0.48	0.003	0.002	0.003	0.019	0.011
Total	465	2.9	2.5	4.3	18.2	0.131	0.068	0.102	0.732	0.418

An estimate of the average pollutant concentration in stormwater discharges for post-project conditions is calculated from the estimated post-project loads and runoff volumes, using the expression below. Results are presented in Table A-13. Because the post-developed land-uses are the same for the majority of the site, the concentrations for each of the constituents are the same for all catchments within the Project boundary, except catchment 1A.

Table A-13: Estimated Average Pollutant Concentrations in Stormwater Discharges for Post-Project Conditions with BMPs.

Catchment	TSS (mg/L)	TP (mg/L)	NH_3-N (mg/L)	NO_3-N (mg/L)	TKN (mg/L)	TCu (μg/L)	DCu (μg/L)	TPb (μg/L)	TZn (μg/L)	DZn (μg/L)
1A	93	0.14	0.07	0.98	1.11	13.2	0.60	3.00	26.3	27.6
2B	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
3B	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
4B	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
5C	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
6C	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
8B	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
9C	59.7	0.40	0.34	0.55	2.51	17.8	9.56	14.2	102	57.4
Total	62	0.38	0.33	0.58	2.42	17.5	9.00	13.5	97.3	55.5

A.10 Model Uncertainty

There are three major elements of the model that are subject to error and uncertainty. The precision accuracy of the model predictions depends on how well these three elements, runoff relationship and climatic and water quality data, describe the actual site characteristics. Local and regional data are used to the fullest extent possible to minimize errors in model estimates, however, climatic and water quality data are subject to a high degree of variability that will add an element of uncertainty to the model results. An extensive model sensitivity analysis to examine this is beyond the scope of this document. The following is a qualitative description of the potential errors, variability, and proper interpretation of the modeling approach and results.

1) Rainfall Data. Rainfall is subject to a high degree of seasonal and spatial variability. A primary consideration in selection of the appropriate rainfall gauge was the proximity of the rain gauge to the watershed. Precipitation data collected from the Los Angeles International Airport gauge was used in this assessment. It is expected that any potential errors in the model estimates stemming from use of this rainfall data are small in comparison to other sources of model uncertainty. Seasonal variability in rainfall depths is greater than spatial differences in the project area. The pollutant loads model uses an average annual rainfall depth to represent the rainfall volume in the watershed. Thus, model results should be interpreted as representing the pollutant loads generated by average rainfall conditions, and that seasonal differences in rainfall in any given year can result in actual pollutant loads that are less than or greater than the model estimates. Gauge selection was based to a large degree on the duration of the available rainfall records, with longer rainfall records providing a better estimate of average conditions.

2) Runoff Calculation. Runoff volumes are estimated with the Rational Formula, an empirical expression that is commonly used to estimate runoff in urban drainages less than one-square mile in size. Although the Rational formula is simple to apply, it is

difficult to estimate the runoff coefficient, which is often expressed as a function of the percent of impervious cover in the watershed. Model estimates of average annual runoff are thus subject to uncertainty stemming from inability to accurately estimate the runoff coefficient. It is expected, however, that use of the Rational Formula will tend to overestimate runoff volumes, and will therefore provide a conservative estimate of pollutant loads to receiving waters.

3) Water Quality Estimation. Characterization of the stormwater quality is likely to be the greatest source of uncertainty in the model estimates. Stormwater monitoring data typically have a high degree of variability, both within and between storm events. However, to estimate average conditions, stormwater quality can be usefully characterized by an event mean concentration (EMC), which is a volume-weighted average concentration that does not indicate the variability in stormwater data. This is consistent with the use of average rainfall volume, which emphasizes that model results must be interpreted as representing the pollutant loads generated by average rainfall conditions, and that seasonal differences in rainfall and EMC in any given year can result in actual pollutant loads that are less than or greater than the model estimates. Because of the lack of local stormwater monitoring information in the project area, average concentrations of land-use based stormwater monitoring data collected in Los Angeles County were used to estimate stormwater quality in the project watershed. Thus, uncertainty in pollutant load estimates occurs because of the quality and hence adequacy of monitoring data used, the ability of the EMC to accurately portray the average concentration in the average storm runoff estimated from the rational equation, and estimating average conditions only and ignoring inter-storm variability.

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Appendix I –
Environmental Noise Study for the Proposed Dry-Stack Boat Storage Facility prepared by Wieland Acoustics, dated January 9, 2009

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Environmental Noise Study for the Proposed Dry-Stack Boat Storage Facility In the County of Los Angeles

Project File 07.071.00
January 9, 2009

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1 Executive Summary

This report identifies and assesses the potential noise and vibration impacts associated with the proposed Boat Central dry-stack boat storage facility in the County of Los Angeles. The 4.20 acre site (encompassing land and water areas) could accommodate up to 345 boats and 28 boat trailers within the dry-stack building, with outside parking for 30 mast-up sail boats. The Project would include a two-story building with a visitors' lounge and the Project's office, and would incorporate the existing Sheriff's boatwright shop in a new two-story Sheriff's boatwright/lifeguard facility with a fenced yard.

In order to identify the existing noise environment, measurements were taken at five locations throughout the study area. The introduction of new noise sources, such as construction activities and on-site operations, will result in a change to the noise environment at existing properties in the vicinity of the Project.

Using the criteria established in this study, it may be concluded that the Project will create a significant impact at commercial properties throughout the study area. Potentially significant impacts may occur at existing residential properties, depending on the construction methods used at the Project site. Potentially significant impacts may also occur at a natural habitat area in the vicinity of the Project, depending on where sensitive nests are located and whether construction activities occur during nesting season.

The following measures are recommended to mitigate the significant noise impact at the apartment community northeast of the Project site and to mitigate the significant vibration impacts at the commercial building southwest of the Project site:

1. Poured-in-place piles shall be used, with concrete piles being poured into pre-drilled holes. The feasibility and efficacy of this recommendation shall be reviewed by a qualified geotechnical engineer (such review shall include assessing the necessary depth of the holes to ensure piles are supported in bedrock or sufficiently dense soils).
2. Construction activities shall be limited to the hours and days permitted by the County of Los Angeles.
3. All construction and demolition equipment shall be fitted with properly sized mufflers.
4. Noisy construction equipment items shall be located as far as practicable from the surrounding properties.

Due to weak soil conditions at the Project site, additional measures are also suggested:

- Prior to construction, a qualified structural and/or geotechnical engineer should review the proposed construction methodologies to ensure that vibration from drilling and other activities does not pose a risk of building damage, particularly due to dynamic soil settlement.
- If any risks are identified a qualified structural and/or geotechnical engineer should be onsite during the activities of concern and perform such tests and observations as are necessary to ensure the structural stability of the structures in the vicinity of the construction area. Such

observations may include vibration velocity measurements inside and/or outside of potentially affected buildings.

Significant unavoidable impacts related to construction noise will remain, even after mitigation. These significant unavoidable impacts are as follows:

- Temporary increases in the ambient noise of more than 3 dB at commercial properties and at the natural habitat in the study area. It is noted that the significance of this impact is dependent on whether construction occurs during the nesting season and, if so, on the location of bird nests relative to the construction equipment.
- Noise levels in excess of 60 dB(A) at the natural habitat. It is noted that the significance of this impact is dependent on whether construction occurs during the nesting season and, if so, on the location of bird nests relative to the construction equipment.

It is not considered practical or feasible to mitigate these impacts to a less than significant level.

In the event that the poured-in-place pile technique of Mitigation Measure 1 is not considered feasible, then the following will also be unavoidable impacts:

- Maximum noise levels in excess of the County's standards at the apartment community to the northeast of the Project site.
- Increases in the ambient noise of more than 3 dB at commercial properties northwest of the Project site.
- Potentially excessive vibration levels at the commercial building to the southwest of the Project site.

In this case the following shall be implemented to minimize the impact of construction noise at the surrounding properties and to minimize the risk of vibration-induced building damage:

- An acoustical study shall be performed based on the final construction methodology to investigate alternative means of reducing noise impacts from impact pile driving or vibratory pile driving.
- Prior to construction, a qualified structural and/or geotechnical engineer should review the proposed construction methodologies to ensure that vibration from pile driving and other activities does not pose a risk of building damage, particularly due to dynamic soil settlement.
- If any risks are identified a qualified structural and/or geotechnical engineer should be onsite during the activities of concern and perform such tests and observations as are necessary to ensure the structural stability of the structures in the vicinity of the construction area. Such observations may include vibration velocity measurements inside and/or outside of potentially affected buildings.

2 Introduction / Project Description

Boat Central proposes to develop a state-of-the-art dry-stack boat storage facility (the "Project") to bring a new level of service to the marina boating community. Boat Central will be located on the 4.20 acre leasehold (encompassing land and water areas) composed of Parcels 52R and GG along Fiji Way, as shown in Figure 2-1. The Project could accommodate up to a maximum of 345 boats and 28 boat trailers within the dry-stack building, with outside parking for 30 mast-up sail boats, and a public waterside hoist. The boats will be delivered dockside upon reservation/request, fully fueled with the boaters' option to order necessary supplies including food and drinks. A public boat washdown facility will also be incorporated on-site. The Project's on-site visitor reception facility will expand the services and amenities available to boaters by including a visitor lounge, shower facilities, and personal lockers. This two-story visitor building has a gross floor area of 3,080 square feet and will house the Project's office. The Project will incorporate the existing Sheriff's boatwright shop in a new two-story Sheriff's boatwright/lifeguard facility (2,835 square foot building footprint with a 430 square foot second floor mezzanine) with an adjacent 2,200 square foot fenced yard. The Sheriff's boat dock will remain. The other existing public uses, including the temporary office space and temporary parking for charter fishing tours, will be relocated by the Department of Beaches & Harbors. No wet slip spaces are proposed as the dock facilities will be reserved for the queuing of boats scheduled for use. Finally, the Project will provide a waterfront park with direct access from Fiji Way. Refer to Figure 2-2 for the proposed site layout.

Figure 2-1. Project Location

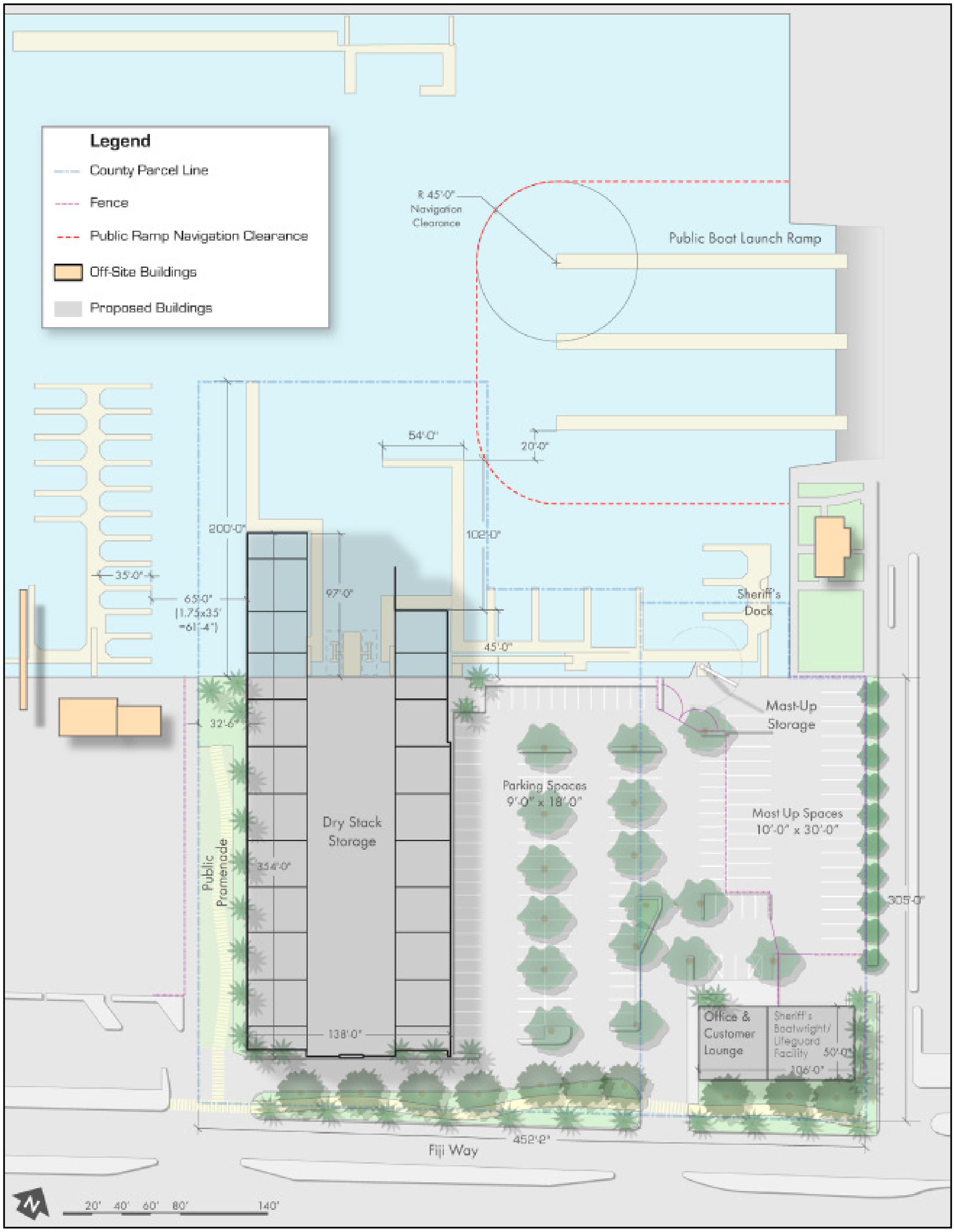


Figure 2-2. Proposed Site Plan

3 Noise Descriptors

The following sections briefly describe the noise descriptors that will be used throughout this study:

3.1 Decibels

Sound pressures can be measured in units called microPascals (μPa). However, expressing sound levels in terms of μPa would be very cumbersome since it would require a wide range of very large numbers. For this reason, sound pressure levels are described in logarithmic units of ratios of actual sound pressures to a reference pressure squared. These units are called bels. In order to provide a finer resolution, a bel is subdivided into 10 decibels, abbreviated dB.

Since decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces a sound pressure level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB. In fact, they would combine to produce 73 dB. This same principle can be applied to other traffic quantities as well. In other words, doubling the traffic volume on a street or the speed of the traffic will increase the traffic noise level by 3 dB. Conversely, halving the traffic volume or speed will reduce the traffic noise level by 3 dB.

3.2 A-Weighting

Sound pressure level alone is not a reliable indicator of loudness. The frequency or pitch of a sound also has a substantial effect on how humans will respond. While the intensity of the sound is a purely physical quantity, the loudness or human response depends on the characteristics of the human ear.

Human hearing is limited not only to the range of audible frequencies, but also in the way it perceives the sound pressure level in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and perceives both higher and lower frequency sounds of the same magnitude with less intensity. In order to approximate the frequency response of the human ear, a series of sound pressure level adjustments is usually applied to the sound measured by a sound level meter. The adjustments, or weighting network, are frequency dependent.

The A-scale approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. A range of noise levels associated with common in- and outdoor activities is shown in Figure 3-1.

The A-weighted sound level of traffic and other long-term noise-producing activities within and around a community varies considerably with time. Measurements of this varying noise level are accomplished by recording values of the A-weighted level during representative periods within a specified portion of the day.

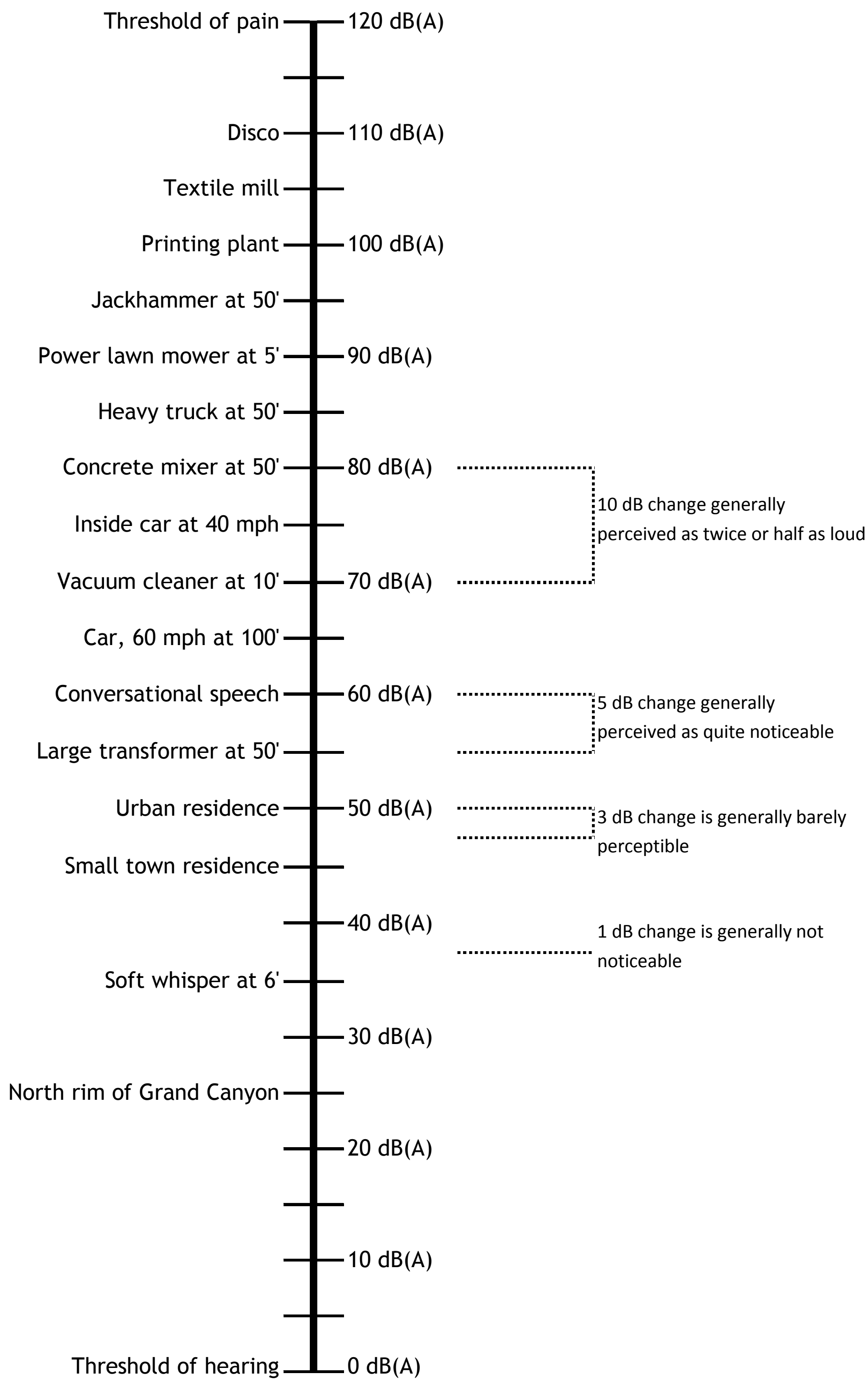


Figure 3-1. Common Noise Sources and A-Weighted Noise Levels

3.3 Community Noise Equivalent Level (CNEL)

It is recognized that a given level of noise may be more or less tolerable depending on the duration of exposure experienced by an individual. There are numerous measures of noise exposure that consider not only the A-level variation of noise but also the duration of the disturbance. The State Department of Aeronautics and the California Commission on Housing and Community Development have adopted the community noise equivalent level (CNEL). This measure weights the average noise levels for the evening hours (7:00 p.m. to 10:00 p.m.), increasing them by 5 dB, and weights the late evening and morning hour noise levels (10:00 p.m. to 7:00 a.m.) by 10 dB. The daytime noise levels are combined with these weighted levels and are averaged to obtain a CNEL value. Figure 3-2 indicates the outdoor CNEL at typical locations.

3.4 Peak Particle Velocity

Construction activities such as blasting, pile driving, and operation of heavy construction equipment induce ground and structure vibrations. Their effects can range from annoyance for the local residents to structural damage. The level of ground vibration experienced at any location depends mainly on the construction method, soil medium, distance from the vibratory source, and the structural dynamics of the building. There are several different methods that are used to quantify vibration amplitude. Of these, peak particle velocity (PPV) is most appropriate for evaluating potential building damage since it is related to the stresses that are exerted upon the buildings. PPV is most commonly assessed in the vertical direction because the floors of buildings vibrate mostly in the vertical direction. Near the source of vibration, the horizontal ground particle velocity is commonly lower than the vertical component. Far from the source of vibration, the ground horizontal and vertical velocities are about the same order of magnitude.

3.5 Vibration Velocity Level

Although PPV is appropriate for evaluating the potential for building damage, it is not the most suitable metric for evaluating human response to groundborne vibration. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to an “average” vibration amplitude. However, the actual average level is not a useful measure of vibration because the net average of a vibration signal is zero. Instead, vibration velocity level (Lv) is used for evaluating human response. Lv describes the root mean square (rms) velocity amplitude of the vibration. This rms value may be thought of as a “smoothed” or “magnitude-averaged” amplitude. The rms of a signal is typically calculated over a 1 second period. The maximum Lv describes the maximum rms velocity amplitude that occurs during a vibration measurement.

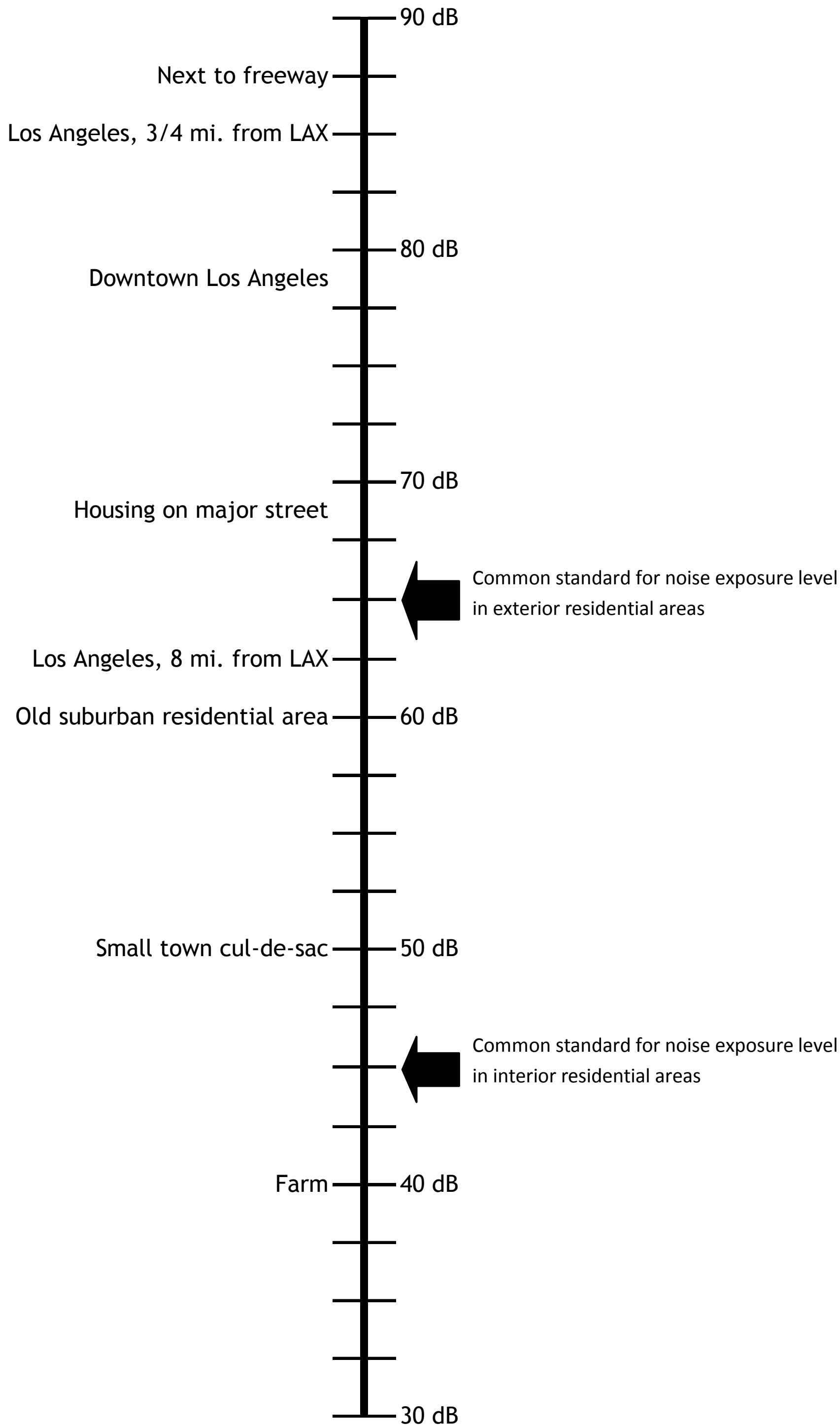


Figure 3-2. Common CNEL Noise Exposure Levels at Various Locations

4 Noise Criteria

The following sections discuss the various noise criteria that have been considered for this study.

4.1 County of Los Angeles Code

Chapter 12.08 of the Los Angeles County Code places the following limits on exterior noise levels that may intrude onto various land uses:

Table 4-1. Los Angeles County Exterior Noise Standards

Land Use of Receptor Property	Daytime, 7:00 am to 10:00 pm	Nighttime, 10:00 pm to 7:00 am
Noise-sensitive areas	45 dB(A)	45 dB(A)
Residential properties	50 dB(A)	45 dB(A)
Commercial properties	60 dB(A)	55 dB(A)
Industrial properties	70 dB(A)	70 dB(A)

The standards identified in Table 4-1 may not be exceeded for a cumulative period of more than 30 minutes in any hour. Higher noise levels are permitted for shorter cumulative periods in an hour. Specifically, the standards in Table 4-1 are increased by 5 dB for a cumulative period of more than 15 minutes in any hour, by 10 dB for a cumulative period of more than 5 minutes in any hour, and by 15 dB for a cumulative period of more than 1 minute in any hour. At no time may the intruding noise exceed the standards of Table 4-1 plus 20 dB. For example, a noise intruding onto a residential property may not exceed 50 dB(A) for more than 30 minutes per hour, or 55 dB(A) for more than 15 minutes per hour, or 60 dB(A) for more than 5 minutes per hour, or more than 65 dB(A) for more than 1 minute per hour, or more than 70 dBA for any length of time. If the ambient noise level exceeds the noise standard, then the ambient noise level becomes the standard.

For measurement locations on the boundary of two different zones, the exterior noise standard is the arithmetic average of the noise standards for both zones. However, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise standard is the daytime standard indicated in Table 4-1 for the receptor property.

For any source of sound that emits a pure tone or impulsive noise, the standards of Table 4-1 are reduced by 5 dB.

Construction noise limits are addressed in Section 12.08.440 of the County Code. This section prohibits construction work between the weekday hours of 7:00 pm and 7:00 am, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial property line. In addition, the maximum construction noise level may not exceed the limits identified in Table 4-2 when measured at the affected buildings.

Table 4-2. Los Angeles County Construction Noise Limits

	Single-Family Residential	Multi-Family Residential	Semi-residential / Commercial	Business Structures
Mobile Equipment Daily, except Sundays and legal holidays, 7 am to 8 pm Daily, 8 pm to 7 am and all day Sunday and legal holidays	75 dB(A) 60 dB(A)	80 dB(A) 64 dB(A)	85 dB(A) 70 dB(A)	85 dB(A) 85 dB(A)
Stationary Equipment Daily, except Sundays and legal holidays, 7 am to 8 pm Daily, 8 pm to 7 am and all day Sunday and legal holidays	60 dB(A) 50 dB(A)	65 dB(A) 55 dB(A)	70 dB(A) 60 dB(A)	N/A N/A

Section 12.08.460 of the County Code prohibits the loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 pm and 6:00 am in such a manner as to cause a noise disturbance.

Section 12.08.530 of the County Code prohibits the operation of any air conditioning or refrigeration equipment in such a manner that exceeds 55 dB(A) at any point on a neighboring property, or 50 dB(A) at the center of a neighboring patio, or 50 dB(A) outside the neighboring living area window nearest the equipment location.

Section 12.08.560 of the County Code prohibits the operation of any device that creates vibration velocity levels of more than 0.01 in/sec over the frequency range of 1 to 100 Hz at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way.

Section 12.08.570 of the County Code specifically exempts all legal vehicles operating in a legal manner within the public right-of-way or on private property from the provisions of the noise ordinance.

4.2 County of Los Angeles General Plan

The Noise Element of the General Plan for the County of Los Angeles, updated through 1993, provides the following policies:

1. Promote the necessary organization adjustments within county government to establish a central authority which identifies technological opportunities, conducts studies, assesses effectiveness of programs, sets standards, and recommends transportation noise mitigation techniques, programs and alternatives.
2. Establish acceptable noise standards consistent with health and quality of life goals and employ effective techniques of noise abatement through such means as building code, noise, subdivision and zoning ordinances.
3. Determine and evaluate the present noise levels associated with all major transportation facilities in the county.

4. Coordinate with and assist the various cities in dealing with the problem of noise and provide leadership and technical expertise when requested by other jurisdictions.
5. Coordinate with federal, state, and city governments in developing and implementing noise abatement programs.
6. Monitor the programs and policies of the responsible special districts, regional, state and federal agencies in order to ensure that they effectively exercise their mandate to control the sources of noise for new, proposed, or existing transportation facilities, vehicles or aircraft.
7. Encourage the state Department of Transportation to conduct an active highway noise abatement program with scenic/aesthetic considerations.
8. Determine and evaluate the future noise levels associated with all major transportation facilities in the county.
9. Establish noise criteria in the specifications for purchase of vehicles, aircraft, and their components intended for use by the County including all equipment needed for maintenance and repair of such vehicles and aircraft.
10. Encourage the federal and state governments and other agencies to work for standardization and simplification of the measurement methods used in assessing noise impact.
11. Reduce the present and future impact of excessive noise from transportation sources through judicious use of technology, planning and regulatory measures.
12. Seek funds from the appropriate levels of government to underwrite the costs of noise abatement programs.
13. Urge continued federal and State research into the noise problem and recommend additional research programs as problems are identified.
14. Recommend needed legislation to the State and federal government which will provide for noise abatement and the distribution of the costs of noise abatement programs among the producers of noise.
15. Promote increased public awareness concerning the effects of noise.
16. Encourage cities to adopt definitive noise ordinances and policies that are consistent throughout the county.

The County's adopted General Plan does not provide any quantitative standards for regulating acceptable exterior and interior noise environments at residential land uses. However, the County is currently in the process of updating their General Plan. Policy N-1.2 of this unadopted plan states that residential development should be avoided in areas of the County where outdoor ambient noise levels exceed a CNEL of 55 dB unless interior noise levels from exterior sources can be mitigated to less than 45 dB CNEL. Policy N-1.6 encourages the construction of noise barriers – either separately or in conjunction with other acoustical mitigation techniques – in new development projects where the circumstances warrant their inclusion. And finally, Policy N-1.7 encourages landscaping and vegetation berms along roadways and adjacent to other noise-generating sources as a means of increasing the absorption of noise energy and separation distance.

4.3 Bird Habitat Recommendations

Based on a study conducted by Regional Environmental Consultants (RECON) for the San Diego Association of Governments (SANDAG) in 1989, it was theoretically estimated that average noise levels (Leq) in excess of 60 dB(A) in bird habitats may mask a bird's song, potentially having some effect on reproductive behavior during the breeding season, and presumably its ability to defend its territory. In 1991, the U.S. Fish and Wildlife Service (USFWS) also recommended a policy that noise levels not exceed 60 dB(A) to protect various bird species.

4.4 Vibration Safety Limits for Buildings

General vibration damage criteria developed by the Federal Transit Administration **[4]** are summarized as follows:

Table 4-3. FTA Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Caltrans **[5]** uses the following criteria to evaluate the severity of problems associated with vibration:

Table 4-4. Caltrans Vibration Damage Criteria

Building Category	PPV (in/sec)	
	Continuous Sources	Transient Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.08	0.12
Fragile buildings	0.1	0.2
Historic and some old buildings	0.25	0.5
Older residential structures	0.3	0.5
New residential structures	0.5	1.0
Modern industrial/commercial buildings	0.5	2.0

It is noteworthy that the risk of structural damage still exists even at relatively low vibration velocities (in particular due to dynamic settlements caused in loose soils).

5 Thresholds of Significance

Based on the noise criteria discussed above, and the CEQA guidelines, a significant impact will be assessed if the Project will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. This impact will occur if:
  1. The noise levels generated by the Project exceed the exterior limits specified in the County of Los Angeles Code. (Refer to Section 4.1.); or
  2. Construction or Project-related activities generate an average noise level in excess of 60 dB(A) at a nesting site during the bird breeding season.
- Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels. This impact will occur if any device on the Project site causes the vibration velocity level to exceed 0.01 in/sec at an adjacent property. Because of the potential for damage, a significant impact will also be assessed if the PPV exceeds 0.20 in/sec at any existing building.
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. This impact will occur if:
  1. Project traffic increases the CNEL at any off-site residence by a perceptible amount of 3 dB or more if the exterior CNEL without Project is 65 dB or less; or
  2. Project traffic increases the CNEL at any off-site residence by any amount if the exterior CNEL without Project exceeds 65 dB; or
  3. Activity noise levels at the Project site increase the ambient noise level at any off-site sensitive receptor by 3 dB or more.
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. This condition will occur if:
  1. Construction of the proposed Project increases the ambient noise level at any off-site receptor by 3 dB or more; and
  2. The construction equipment generates noise levels in excess of the Los Angeles County standards. (Refer to Table 4-2.)
- Exposure of persons residing or working in the study area to excessive noise levels as a result of activities at an airport.

6 Existing Noise Environment

The nearest sensitive receptors to the Project site include:

- An existing commercial building approximately 55 feet to the southwest.
- An existing natural habitat approximately 125 feet to the southeast.
- Existing commercial properties approximately 290 feet to the northwest.
- Existing commercial properties approximately 835 feet to the northeast.
- The nearest residential area to the Project site is an apartment community on Lincoln Boulevard, approximately 1,440 feet to the northeast.

6.1 Noise Measurements

The primary noise sources in the study area include traffic on the local streets, takeoffs from Los Angeles International Airport, and activities in the marina. In order to document the existing noise environment, measurements were obtained at five locations throughout the study area. (Refer to Figure 6-1.)

To obtain the measurements, the microphone was positioned at a height of 5 feet above the ground. The results of the noise measurements are provided in Appendix I, and are summarized in Table 6-1.

Table 6-1. Summary of Ambient Noise Measurements

Location #	Location Description	Average Noise Level, L_{eq}
1	Natural habitat	49.0 dB(A)
2	Entry of Marina Terrace Apartments	71.1 dB(A)
3	Dental & pharmacy building on Admiralty near Bali	69.3 dB(A)
4	Near Marina del Rey Hotel	51.8 dB(A)
5	The Boathouse off Mindanao Way	55.7 dB(A)

The instrumentation used to obtain the noise measurements consisted of an integrating sound level meter (Model 820) and an acoustical calibrator (Model CAL200) manufactured by Larson Davis Laboratories. The accuracy of the calibrator is maintained through a program established by the manufacturer, and is traceable to the National Bureau of Standards. All instrumentation meets the requirements of the American National Standards Institute (ANSI) S1.4-1971.

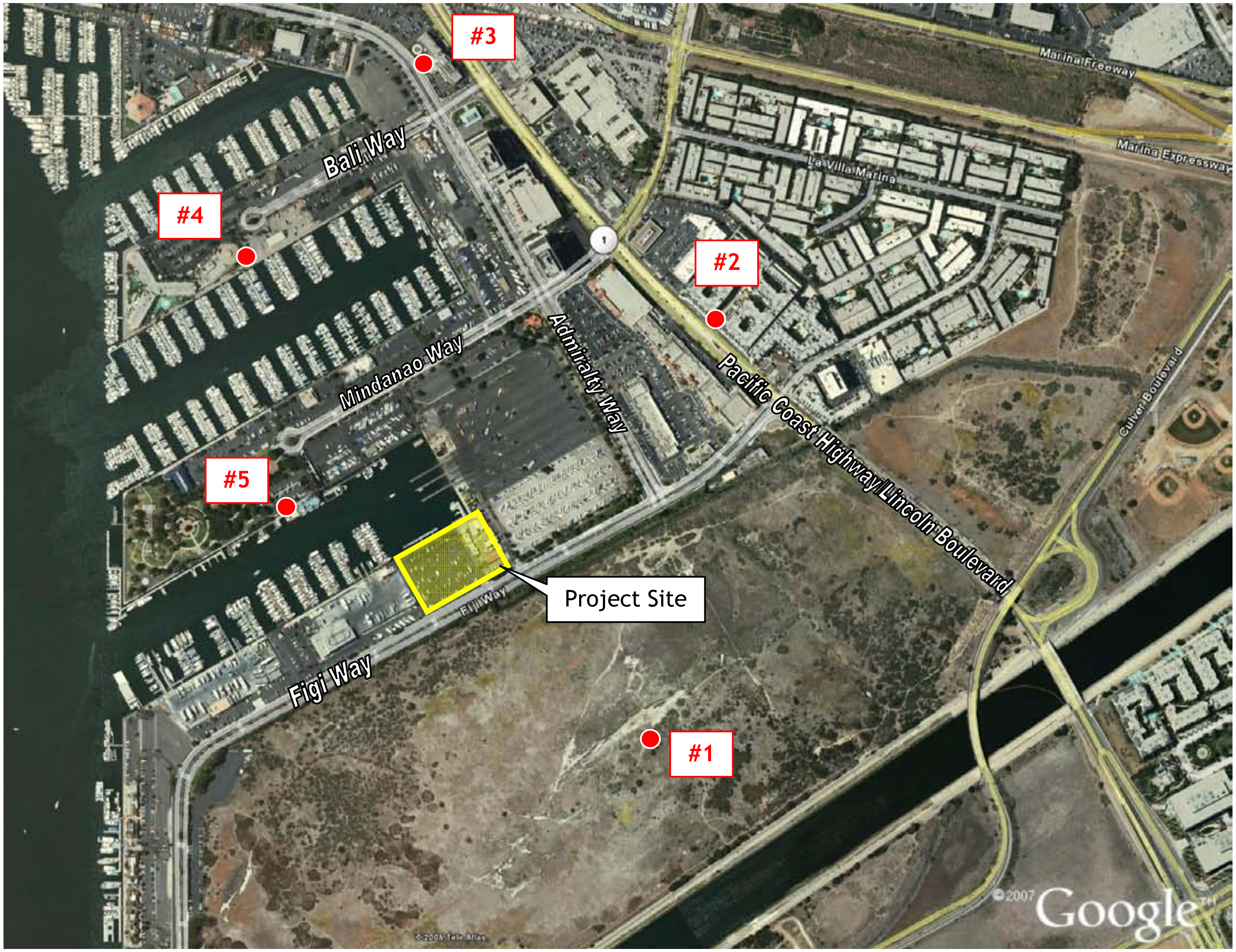


Figure 6-1. Noise Measurement Locations

6.2 Traffic Noise Exposures

Using data provided by Linscott, Law & Greenspan **[1]**, an analysis was conducted to identify the existing traffic noise exposures in the study area. The analysis was conducted using a proprietary version of the highway traffic noise prediction model developed by the Federal Highway Administration **[7]**. The model was used to estimate traffic noise levels adjacent to various street segments in the study area based on traffic volumes, speeds, truck mix, site conditions, and distance from the roadway to the receptor. The California reference energy mean emission (Calveno) levels developed by Caltrans were used in the prediction model. The results of the modeling effort, provided in Appendix II, are summarized in Table 6-2. Referring to the table, the results are presented in terms of an unmitigated CNEL at a distance of 50 feet from the centerline of the nearest travel lane. This distance has been used in the analysis because it is the reference distance used in the Federal Highway Administration's highway traffic noise prediction model.

Table 6-2. Existing Traffic Noise Levels

Street Segment	Average Daily Traffic Volume	Estimated CNEL 50' from Near Lane Centerline	Distance to CNEL Contour from Near Lane Centerline		
			60 dB	65 dB	70 dB
Admiralty Way					
North of Bali	28,010	67.5 dB	200'	83'	--
Bali to Mindanao	23,140	69.0 dB	255'	110'	--
Mindanao to Fiji	14,570	67.0 dB	185'	75'	--
Bali Way					
West of Admiralty	1,370	56.5 dB	--	--	--
Admiralty to Lincoln	7,660	64.0 dB	110'	--	--
Fiji Way					
West of Admiralty	6,360	62.5 dB	83'	--	--
Admiralty to Lincoln	17,260	66.5 dB	170'	69'	--
East of Lincoln	2,100	59.0 dB	--	--	--
Lincoln Boulevard					
North of Bali	35,100	70.5 dB	320'	143'	56'
Bali to Mindanao	30,790	70.0 dB	300'	130'	50'
Mindanao to Fiji	34,690	70.5 dB	320'	143'	56'
South of Fiji	45,460	73.0 dB	460'	215'	90'
Mindanao Way					
West of Admiralty	1,090	55.5 dB	--	--	--
Admiralty to Lincoln	13,150	64.0 dB	110'	--	--
East of Lincoln	18,090	65.5 dB	143'	56'	--

6.3 Los Angeles International Airport

Los Angeles International Airport (LAX), located south of the Project site, is the fifth busiest airport in the world for passengers and ranks 11th in the world in air cargo tonnage handled. Referring to Figure 6-2, the Project site is located well outside the 65 dB CNEL noise contour from LAX. However, noise from aircraft overflights may occasionally be experienced in the study area.

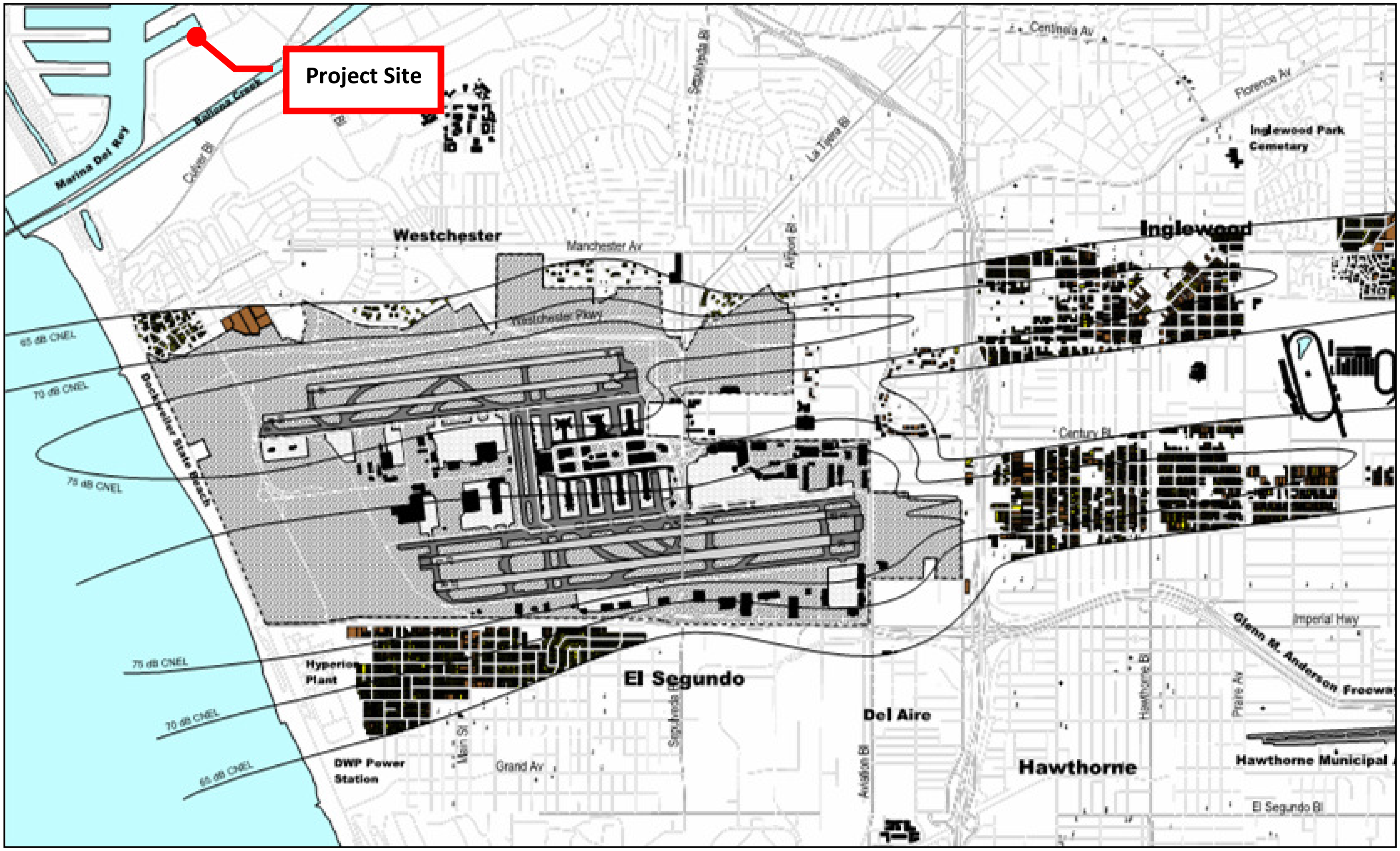


Figure 6-2. Noise Contours for Los Angeles International Airport
(Source: Los Angeles World Airport, 2Q07)

7 Future Noise Environment

For ease of presentation, the discussion of future conditions in the study area with the Project has been divided into two sections: construction and operation. Each is discussed in greater detail in the following sections.

7.1 Construction of the Project

7.1.1 Construction Noise

In compliance with the County Code requirements, construction of the Project will occur only between 7:00 a.m. and 7:00 p.m. on Monday through Saturday. There will be no construction activities on Sundays or legal holidays.

Construction noise levels in the vicinity of the Project will fluctuate depending on the particular type, number and duration of use of various pieces of construction equipment. The exposure of persons to the periodic increase in noise levels will be short-term. Table 7-1 shows typical noise levels associated with various types of construction-related machinery.

Table 7-1. Typical Construction Equipment Noise Levels

Equipment Type or Activity	Typical Average Noise Level at 50 ft. in dB(A)
Auger Drilling Rig	85
Backhoe	80
Concrete Pump	81
Crane	85
Dozer	85
Grader	85
Impact Wrench	85
Impact Pile Driver	101
Vibratory Pile Driver	96
Paver	89
Portable Power Generator	82
Saws	85
Truck (18 wheel flatbed)	84
Truck (2,500 gallon water)	85
Truck (concrete pump)	82
Truck (concrete transport)	85
Vibrator	83
Welder	74

Source: Federal Highway Administration's *Roadway Construction Noise Model* Version 1.0. February 2, 2006

Based on the geotechnical report for the Project **[9]**, pile foundations will be used to support the dry-stack storage structure, the visitors' center/office/boatwright/lifeguard building and the new dock and boat slips. A number of techniques are available for pile installation, each producing different levels of noise. The actual technique to be used at the Project site is yet to be determined. For the purposes of evaluating potential noise impacts, three possible pile installation techniques have been considered. The first technique is impact pile driving; this is the most common type of pile driving, where a mass (or "hammer") is dropped onto the top of the pile such that the impact drives the pile into the ground. The second considered technique is vibratory pile driving; this technique uses rotating masses attached to the pile head to create vertical vibrations in the pile which disturb the soil next to the pile, reducing the friction between the soil particles and the pile surface, allowing the pile to move downward under its own weight. The third considered technique is the use of poured-in-place piles; this technique uses a drill to create a hole in the ground and then concrete piles are poured into the pre-drilled holes.

Referring to Table 7-1, if impact pile driving or is vibratory pile driving is to be used at the Project site then the noisiest piece of construction equipment is expected to be the pile driving equipment. If poured-in-place piles are to be used then the noisiest equipment item will not be related to pile installation but rather will be the paver used to finish the site surface. Table 7-2 provides the estimated maximum noise levels at the nearby sensitive receivers due to Project construction under each of the three considered scenarios.

Table 7-2. Maximum Construction Noise Levels at Sensitive Receptors

Noise Source	Maximum Noise Level, dB(A) at…					
	50' from Noise Source	Commercial Building to SW (≈55' from Noise Source)	Natural Habitat to SE (≈125' from Noise Source)	Commercial Properties to NW (≈290' from Noise Source)	Commercial Properties to NW (≈835' from Noise Source)	Apartment Community to NE (≈1,440' from Noise Source)
Impact Pile Driver	101	100	93	86	77	72
Vibratory Pile Driver	96	95	88	81	72	67
Paver (Poured-in-Place Piles)	89	88	81	74	65	60

For stationary equipment (such as pile drivers) the County does not have a maximum noise level standard for business structures or for natural habitats; therefore the impact at these locations is not significant. At the apartment community, the County's standard of 65 dB(A) will be exceeded if impact pile driving or vibratory pile driving is used; therefore the temporary impact at this location is potentially significant. The impact will not be significant if the piles are poured in place.

The average noise level (L_{eq}) due to construction equipment can be estimated by applying a usage factor to the maximum noise levels (this factor reflects the fact that equipment does not operate constantly in its noisiest possible mode). Assuming a usage factor of 20% for impact pile driving or vibratory pile driving, and 50% for a paver **[6]**, Table 7-3 provides the estimated average noise levels at the nearby sensitive receivers due to Project construction under each of the three considered scenarios.

Table 7-3. Average Construction Noise Levels at Sensitive Receptors

Noise Source	Maximum Noise Level, dB(A) at… 50' from Noise Source	Commercial Building to SW (≈55' from Noise Source)	Natural Habitat to SE (≈125' from Noise Source)	Commercial Properties to NW (≈290' from Noise Source)	Commercial Properties to NW (≈835' from Noise Source)	Apartment Community to NE (≈1,440' from Noise Source)
Impact Pile Driver	94	93	86	79	70	65
Vibratory Pile Driver	89	88	81	74	65	60
Paver (Poured-in-Place Piles)	86	85	78	71	62	57

Referring to Table 7-3, the average noise level experienced at the natural habitat will exceed 60 dB(A) during construction, regardless of which pile installation technique is used. This is a potentially significant temporary impact depending on the location of bird nests relative to the construction activity, and on whether construction occurs during the nesting season.

Table 7-4 estimates the increase in existing noise levels at sensitive receptors in the study area due to Project construction for each of the three construction scenarios.

Table 7-4. Estimated Noise Increases Due to Project Construction

Sensitive Receptor Location	Pile Installation Technique Used	Estimated Average Construction Noise Level, L_{eq}	Existing Noise Level, L_{eq}[1]	Estimated Noise Increase Due to Project Construction
Commercial building to the southwest	Impact Pile Driver	93 dB(A)	54.4 dB(A)[2]	39 dB
	Vibratory Pile Driver	88 dB(A)		34 dB
	Poured-in-Place	85 dB(A)		31 dB
Natural habitat to the southeast	Impact Pile Driver	86 dB(A)	49.0 dB(A)	37 dB
	Vibratory Pile Driver	81 dB(A)		32 dB
	Poured-in-Place	78 dB(A)		29 dB
Commercial properties to the northwest	Impact Pile Driver	79 dB(A)	55.7 dB(A)	23 dB
	Vibratory Pile Driver	74 dB(A)		18 dB
	Poured-in-Place	71 dB(A)		15 dB
Commercial properties to the northeast	Impact Pile Driver	70 dB(A)	64.9 dB(A)[2]	6 dB
	Vibratory Pile Driver	65 dB(A)		3 dB
	Poured-in-Place	62 dB(A)		2 dB
Apartment community to the northeast, on Lincoln Boulevard	Impact Pile Driver	65 dB(A)	71.1 dB(A)	1 dB
	Vibratory Pile Driver	60 dB(A)		0 dB
	Poured-in-Place	57 dB(A)		0 dB

Notes:
1. Existing noise levels are measured unless otherwise noted.
2. Estimated based on existing traffic data.

Referring to Table 7-4, the noise level due to construction of the Project is expected to increase the ambient noise level by more than 3 dB at the nearby commercial properties to the northwest and southwest, and at the natural habitat, producing a significant temporary impact at the commercial properties and a potentially significant temporary impact at the natural habitat (depending on the location of bird nests relative to the construction equipment, and on whether construction occurs during the nesting season). There is a potentially significant impact at the commercial properties to the northeast, depending on the construction technique to be utilized (impact pile driving or vibratory pile driving are anticipated to cause a noise increase of 3 dB or greater, whereas poured-in-place piles are not). At the apartments on Lincoln Boulevard, the noise level due to construction will increase the ambient noise level by less than 3 dB; therefore the impact is less than significant at this location.

7.1.2 Construction Vibration

The primary vibratory source during the construction of the Project will be pile installation at the Project site. Based on the geotechnical report for the Project **[9]**, pile foundations will be used to support the dry-stack storage structure, the visitors' center/office/boatwright/lifeguard building and the new dock and boat slips. As discussed in Section 7.1.1, various pile installation techniques are available and the actual technique to be used at the Project site is yet to be determined. For the purposes of evaluating potential vibration impacts, three possible pile installation techniques have been considered: 1) impact pile driving; 2) vibratory pile driving; and, 3) use of poured-in-place piles. These techniques are discussed in further detail in Section 7.1.1.

Based on published information **[4]**, typical impact pile driving produces a peak particle velocity (PPV) of 0.644 in/sec at a distance of 25 feet, typical vibratory pile driving produces a PPV of 0.170 in/sec at a distance of 25 feet, and typical pile drilling (for poured-in-place piles) produces a PPV of 0.089 in/sec at a distance of 25 feet. The PPV that will be experienced at the nearby sensitive properties can be estimated using the following formula **[5]**:

$$PPV_{equipment} = PPV_{reference} \times \left(\frac{25}{D}\right)^{1.1}$$

where,

$PPV_{equipment}$ is the peak particle velocity in in/sec of the equipment adjusted for distance,

$PPV_{reference}$ is the reference peak particle velocity in in/sec at 25 feet (e.g., 0.644 in/sec for impact pile driving), and

D is the distance from the equipment to the receiver

Based on published information **[4]**, typical impact pile driving produces an average vibration velocity level (Lv) of 0.158 in/sec at a distance of 25 feet, typical vibratory pile driving produces an Lv of 0.045 in/sec at a distance of 25 feet, and typical pile drilling produces an Lv of 0.022 in/sec at a distance of 25 feet. The vibration velocity level that will be experienced at the nearby sensitive properties can be estimated using the following formula **[4]**:

$$Lv_{equipment} = 10\wedge\left(\frac{20\times\log_{10}\left(Lv_{reference}\right) - 30\times\log_{10}\left(\frac{D}{25}\right)}{20}\right)$$

where,

$Lv_{equipment}$ is the vibration velocity of the equipment adjusted for distance,

$Lv_{reference}$ is the reference vibration velocity level at 25 feet, and

D is the distance from the equipment to the receiver

Based on the above formulae and typical vibration levels, it is possible to estimate the distances from the construction activities at which vibration levels will exceed the thresholds identified for this study. Table 7-5 summarizes the estimated distances for each of the considered pile driving techniques.

Table 7-5. Estimated Distances at Which Vibration Thresholds are Exceeded

Pile Driving Technique	Estimated Distance at Which Threshold for Potential Building Damage (0.2 in/sec PPV) is Exceeded	Estimated Distance at Which County Standard (0.01 in/sec Lv) is Exceeded
Impact Pile Driving	73’	164’
Vibratory Pile Driving	22’	70’
Drilling for Poured-in-Place Piles	12’	44’

The only sensitive building considered in this study that is within the critical distances identified in Table 7-5 is the commercial building to the southwest of the Project, which is located within approximately 55 feet of the proposed Project structures. If impact pile driving is used then vibration levels at this building are expected to exceed both the threshold of 0.2 in/sec PPV for potential building damage and the County’s Lv standard of 0.01 in/sec. If vibratory pile driving is used then vibration levels at this building are expected to be below the threshold of 0.2 in/sec PPV for potential building damage but exceed the County’s Lv standard of 0.01 in/sec. Therefore, the temporary impact is considered significant at the commercial building to the southwest if impact pile driving or vibratory pile driving is employed at the Project site. If poured-in-place piles are to be used then impacts at the commercial building to the southwest are anticipated to be less than significant.

The remaining sensitive buildings considered in the study are outside the critical distances identified in Table 7-5. Therefore, the impacts at these locations are anticipated to be less than significant regardless of the pile driving technique used. Construction vibration levels are not assessed at the habitat area because there are no sensitive buildings that may be damaged and no standards regarding the impact of vibration on habitat areas.

It should be noted that the most reliable way to evaluate vibration is in situ. The theoretical analysis in this study provides approximate results and may not be accurate.

7.2 Project Operation

The proposed Project will introduce a number of new noise sources into the study area. The primary noise sources (i.e., those that have the potential to cause a significant impact at sensitive locations in the study area) include increased traffic on the surrounding streets and the operation of the crane equipment at the dry-stack boat storage building. Operation of the Project will be passive and will not generate groundborne vibration or noise levels.

An additional on-site noise source is the Sheriff's boatwright facility. The facility is currently located within a fenced area used by the Department of Beaches & Harbors. The facility includes a workshop building and an exterior area where work can be conducted on boats or other vehicles. The facility will be relocated to a new building with an adjacent fenced yard. The new building will be about 100 feet south of the existing building and the fenced yard area will be within about 50 feet of the existing exterior work area. The Project site was visited on two separate occasions but noise-generating activity was not occurring at the existing Sheriff's boatwright facility on either occasion. Based on information provided by staff at the Department of Beaches & Harbors, activities at the facility are sporadic, with activity levels ranging from periods of more than a week with little or no noise-generating activity to days when noisy activity occurs almost continuously. Noisy activities at the Sheriff's boatwright facility include grinding, sand blasting and hammering. This has not been analyzed in this study because it is an existing use that will continue operations as part of the Project.

7.2.1 Future Traffic Noise Exposures

Using data provided by Linscott, Law & Greenspan **[2, 3]**, analyses were conducted to identify the future traffic noise exposures in the study area, both with and without the Project in the year 2011. The analyses were conducted using a proprietary version of the highway traffic noise prediction model developed by the Federal Highway Administration **[7]**. The model was used to estimate traffic noise levels adjacent to various street segments in the study area based on traffic volumes, speeds, truck mix, site conditions, and distance from the roadway to the receptor. The California reference energy mean emission (Calveno) levels developed by Caltrans were used in the prediction model. The results of the modeling effort, provided in Appendix II, are summarized in Tables 7-6 and 7-7 for future-without-Project and future-with-Project conditions, respectively. Referring to the tables, the results are presented in terms of an unmitigated CNEL at a distance of 50 feet from the centerline of the nearest travel lane. This distance has been used in the analysis because it is the reference distance used in the Federal Highway Administration's highway traffic noise prediction model.

Referring to Tables 7-6 and 7-7, it may be concluded that the future traffic-generated CNEL within the study area will be the same with or without the Project. Therefore, referring to the thresholds of Section 5, the impact of Project-generated traffic noise is less than significant.

Table 7-6. Future-Without-Project Traffic Noise Levels

Street Segment	Average Daily Traffic Volume	Estimated CNEL 50' from Near Lane Centerline	Distance to CNEL Contour from Near Lane Centerline		
			60 dB	65 dB	70 dB
Admiralty Way					
North of Bali	33,808	68.0 dB	215'	90'	--
Bali to Mindanao	29,759	70.0 dB	300'	130'	50'
Mindanao to Fiji	18,303	68.0 dB	215'	90'	--
Bali Way					
West of Admiralty	1,500	57.0 dB	--	--	--
Admiralty to Lincoln	8,991	65.0 dB	130'	50'	--
Fiji Way					
West of Admiralty	9,995	64.0 dB	110'	--	--
Admiralty to Lincoln	20,012	67.0 dB	185'	75'	--
East of Lincoln	2,140	59.0 dB	--	--	--
Lincoln Boulevard					
North of Bali	38,877	71.0 dB	340'	155'	62'
Bali to Mindanao	33,686	70.5 dB	320'	143'	56'
Mindanao to Fiji	38,406	71.0 dB	340'	155'	62'
South of Fiji	51,726	73.5 dB	490'	235'	100'
Mindanao Way					
West of Admiralty	1,170	56.0 dB	--	--	--
Admiralty to Lincoln	17,644	65.5 dB	143'	56'	--
East of Lincoln	22,164	66.5 dB	170'	69'	--

Table 7-7. Future-With-Project Traffic Noise Levels

Street Segment	Average Daily Traffic Volume	Estimated CNEL 50’ from Near Lane Centerline	Distance to CNEL Contour from Near Lane Centerline		
			60 dB	65 dB	70 dB
Admiralty Way					
North of Bali	33,820	68.0 dB	215’	90’	--
Bali to Mindanao	29,790	70.0 dB	300’	130’	50’
Mindanao to Fiji	18,340	68.0 dB	215’	90’	--
Bali Way					
West of Admiralty	1,500	57.0 dB	--	--	--
Admiralty to Lincoln	9,010	65.0 dB	130’	50’	--
Fiji Way					
West of Admiralty	10,120	64.0 dB	110’	--	--
Admiralty to Lincoln	20,100	67.0 dB	185’	75’	--
East of Lincoln	2,140	59.0 dB	--	--	--
Lincoln Boulevard					
North of Bali	38,940	71.0 dB	340’	155’	62’
Bali to Mindanao	33,730	70.5 dB	320’	143’	56’
Mindanao to Fiji	38,450	71.0 dB	340’	155’	62’
South of Fiji	51,770	73.5 dB	490’	235’	100’
Mindanao Way					
West of Admiralty	1,170	56.0 dB	--	--	--
Admiralty to Lincoln	17,650	65.5 dB	143’	56’	--
East of Lincoln	22,170	66.5 dB	170’	69’	--

7.2.2 Dry-Stack Building

The dominant source of noise at the proposed dry-stack storage building is a Stack & Stow™ crane system that will be used to move boats between the water and their dry-stack storage bays. This system will be able to traverse the entire length of the dry-stack storage building and lift boats from water level (at the boat queuing basin) to any of the six stacked storage levels throughout the building. Based on information provided by ACE World Companies, the Stack & Stow™ machinery generates noise levels of up to 85 dB(A) at a distance of 12 feet. Based on information provided by Pacific Marina Development, up to 12 boats may be moved between the queuing basin and their bays during the busiest hour of operations at the facility. A computer noise model was constructed using SoundPLAN software to predict noise levels that will occur at nearby sensitive receptors due to the Stack & Stow™ operations. This model takes a number of significant variables into account including the distance to the receptors, noise reduction provided by the dry-stack building, reverberation within the building, ground conditions between the noise source and the receptor, and barrier effects that will be provided by intervening buildings. Based on this modeling, Table 7-8 provides the estimated average noise level at the nearest sensitive receptors during the busiest hour of operation. The table also indicates the existing noise levels at each receptor and the estimated noise increase at each receptor due to dry-stack building operations.

Table 7-8. Estimated Dry-Stack Building Noise Levels

Sensitive Receptor Location	Estimated Average Dry-Stack Building Noise Level, L_{eq}	Existing Noise Level, L_{eq} [1]	Estimated Noise Increase Due to Dry-Stack Building
Commercial building to the southwest	50 dB(A)	54.4 dB(A) [2]	1 dB
Natural habitat to the southeast	36 dB(A)	49.0 dB(A)	0 dB
Commercial properties to the northwest	40 dB(A)	55.7 dB(A)	0 dB
Commercial properties to the northeast	39 dB(A)	64.9 dB(A) [2]	0 dB
Apartment community to the northeast, on Lincoln Boulevard	35 dB(A)	71.1 dB(A)	0 dB

Notes:
3. Existing noise levels are measured unless otherwise noted.
4. Estimated based on existing traffic data.

Referring to Table 7-8, the predicted noise levels at all commercial properties in the study area are below the County of Los Angeles' daytime and nighttime noise standards of 60 dB(A) and 55 dB(A), respectively. The predicted noise level at the natural habitat to the southeast of the Project site is below 60 dB(A). The predicted noise level at the apartment community to the northeast is below the County of Los Angeles' daytime and nighttime residential noise standards of 50 dB(A) and 45 dB(A), respectively. The estimated dry-stack building noise levels will not increase the noise level at any of the receptors by 3 dB or more. Therefore, the impact of noise from the dry-stack building is less than significant.

8 Impacts on the Project Site

The primary off-site source of noise that will affect the Project site is traffic on Fiji Way. There are no standards to address the impact of traffic noise on the uses that occur at the Project site. Therefore, the impact on the Project is less than significant.

Employees at the Project site will not be exposed to significant noise levels as a result of activities at Los Angeles International Airport. Therefore, the impact is less than significant.

9 Assessment of Impact

Using the criteria established in this study, the following may be concluded regarding the impact of the proposed Project:

- The Project may result in the exposure of persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. This potentially significant impact will occur at the apartment community to the northeast of the Project site if impact pile driving or vibratory pile driving is used during construction. This potentially significant impact may also occur at the natural habitat to the southeast of the Project site due to construction activities (regardless of the pile installation technique) if nests exist and activities occur during the nesting season.

- The Project may generate excessive groundborne vibration or groundborne noise levels. This potentially significant impact may occur at the commercial building to the southwest of the Project site if impact pile driving or vibratory pile driving is used during construction.

  Because it is outside our area of expertise, the risk of structural damage due to transmitted vibrations or dynamic settlements has not been evaluated in this study. It is noteworthy that at relatively short distances from pile drivers, damage to buildings caused by soil settlement incited by vibration can be more significant than the structural damage caused by vibration fatigue **[8]**. *In particular, notable dynamic settlements can result from even relatively small ground vibrations in loose soils. While this study does not address the issues of structural damage, it should be noted that the buildings located very close to the Project site are at risk of structural damage.*

- The Project will not produce a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

- Construction of the Project will produce a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. This significant impact will occur at commercial properties to the southwest and northwest of the project site regardless of the pile installation technique used. A potentially significant impact may occur at commercial properties northeast of the Project site if impact pile driving or vibratory pile driving is used. A potentially significant impact may occur at the natural habitat to the southeast of the Project site regardless of the pile installation technique used if nests exist and construction activities occur during the nesting season.

- The Project will not result in the exposure of persons residing or working in the study area to excessive noise levels as a result of activities at Los Angeles International Airport. Therefore, the impact is not significant.

10 Mitigation Measures

The following measures shall be considered in the Project's design in order to mitigate the significant noise impact at the apartment community northeast of the Project site and to mitigate the significant vibration impacts at the commercial building southwest of the Project site:

1. Poured-in-place piles shall be used, with concrete piles being poured into pre-drilled holes. The feasibility and efficacy of this recommendation shall be reviewed by a qualified geotechnical engineer (such review shall include assessing the necessary depth of the holes to ensure piles are supported in bedrock or sufficiently dense soils).
2. Construction activities shall be limited to the hours and days permitted by the County of Los Angeles.
3. All construction and demolition equipment shall be fitted with properly sized mufflers.
4. Noisy construction equipment items shall be located as far as practicable from the surrounding properties.

Although the mitigation measures provided above will reduce vibration to less-than-significant levels, it is noted that the geotechnical investigation for the Project **[9]** indicates weak soils at the Project site that are susceptible to liquefaction. Therefore, it is recommended that the following additional measures be considered:

- Prior to construction, a qualified structural and/or geotechnical engineer should review the proposed construction methodologies to ensure that vibration from drilling and other activities does not pose a risk of building damage, particularly due to dynamic soil settlement.
- If any risks are identified a qualified structural and/or geotechnical engineer should be onsite during the activities of concern and perform such tests and observations as are necessary to ensure the structural stability of the structures in the vicinity of the construction area. Such observations may include vibration velocity measurements inside and/or outside of potentially affected buildings.

11 Impacts after Mitigation

11.1 Unavoidable Impacts

The proper implementation of the mitigation measures provided in Section 10 will mitigate potential impacts due to construction vibration. However, some potential impacts related to construction noise will remain, even after mitigation. These significant unavoidable impacts are as follows:

1. Temporary increases in the ambient noise of more than 3 dB at commercial properties and at the natural habitat in the study area. It is noted that the significance of this impact at the natural habitat is dependent on whether construction occurs during the nesting season and, if so, on the location of bird nests relative to the construction equipment.
2. Noise levels in excess of 60 dB(A) at the natural habitat. It is noted that the significance of this impact is dependent on whether construction occurs during the nesting season and, if so, on the location of bird nests relative to the construction equipment.

It is not considered practical or feasible to mitigate these impacts to a less than significant level.

11.2 Potentially Unavoidable Impacts

In the event that the poured-in-place pile technique of Mitigation Measure 1 (see Section 10) is not considered feasible, then the following will also be unavoidable impacts:

3. Maximum noise levels in excess of the County's standards at the apartment community to the northeast of the Project site.
4. Increases in the ambient noise of more than 3 dB at commercial properties northwest of the Project site.

5. Potentially excessive vibration levels at the commercial building to the southwest of the Project site.

In this case the following shall be implemented to minimize the impact of construction noise at the surrounding properties and to minimize the risk of vibration-induced building damage:

- An acoustical study shall be performed based on the final construction methodology to investigate alternative means of reducing noise impacts from impact pile driving or vibratory pile driving.
- Prior to construction, a qualified structural and/or geotechnical engineer should review the proposed construction methodologies to ensure that vibration from pile driving and other activities does not pose a risk of building damage, particularly due to dynamic soil settlement.
- If any risks are identified a qualified structural and/or geotechnical engineer should be onsite during the activities of concern and perform such tests and observations as are necessary to ensure the structural stability of the structures in the vicinity of the construction area. Such observations may include vibration velocity measurements inside and/or outside of potentially affected buildings.

12 Project Alternative

Only the "No Project" alternative has been considered in this study. Under this alternative, the status quo would be maintained and the proposed Project would not be built. However, development in the area would continue in accordance with the County's General Plan and zoning map. Traffic volumes on the streets, and hence traffic noise levels, would increase as the area grows. This is illustrated in Table 7-6 for Future-Without-Project conditions. New noise sources associated with the Project would not be introduced into the study area.

13 References

1. *Figure A, Existing Average Daily Traffic Volumes, Dry Stack Boat Storage, Marina Del Rey.* Linscott, Law & Greenspan. January 23, 2008.
2. *Figure C, Year 2011 Cumulative Daily Traffic Volumes, Dry Stack Boat Storage, Marina Del Rey.* Linscott, Law & Greenspan. January 23, 2008.
3. *Figure F, Year 2011 Cumulative Daily Traffic Volumes Without Project Traffic, Dry Stack Boat Storage, Marina Del Rey.* Linscott, Law & Greenspan. January 24, 2008.
4. *Transit Noise and Vibration Impact Assessment*. U.S. Department of Transportation/Federal Transit Administration (FTA-VA-90-1003-06). May 2006.
5. *Transportation- and Construction-Induced Vibration Guidance Manual*. Jones & Stokes (J&S 02-039). Contract No. 43A0049 for California Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA. June 2004.

6. *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). January 2006.
7. *FHWA Highway Traffic Noise Prediction Model*. Federal Highway Administration Report No. FHWA-RD-77-108. December 1978.
8. *Dredging and Dock Reconfiguration, Balboa Marina, Newport Beach, California*. Geotechnical Professionals, Inc. February 6, 2004.
9. *Report of Geotechnical Investigation, Proposed Boat Storage Facility*. Van Beveren & Butelo (Project 07-025). February 25, 2008.
10. *Noise Element of the General Plan for the County of Los Angeles*.
11. *County of Los Angeles Municipal Code*.

APPENDIX I

Noise Measurements

Table I-1. Noise Survey

Project: Dry-Stack Boat Storage Facility, LA County

Position: Position #1 - in natural habitat area

Date: February 13, 2008

Time: Noted

Noise Source: Ambient/traffic

Distance: Approximately 890' from Fiji Way & 1650' from PCH/Lincoln Blvd.

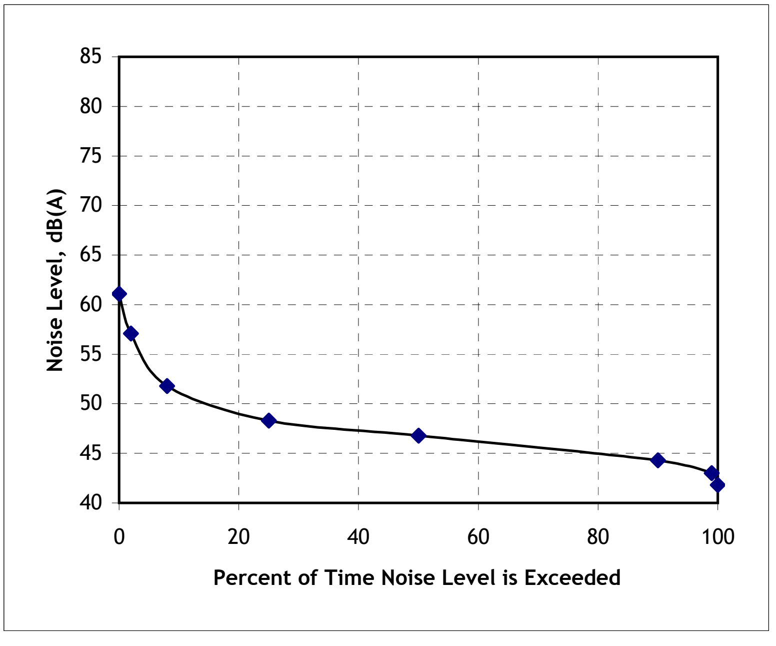
SLM Height: 5'

LD 820 S/N: 0996

LD CAL200 Calibrator S/N: 2916

Operator: David Limberg

	Measurement Period		
	10:40 AM to 11:05 AM	to	to
n*	Ln	Ln	Ln
2	57.1		
8	51.8		
25	48.3		
50	46.8		
90	44.3		
99	43.0		
Leq	49.0		
Lmax	61.1		
Lmin	41.8		



* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

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Table I-2. Noise Survey

Project: Dry-Stack Boat Storage Facility, LA County

Position: Position #2 - at entry of Marina Terrace Apartments

Date: February 13, 2008

Time: Noted

Noise Source: Traffic on Lincoln Blvd./ambient

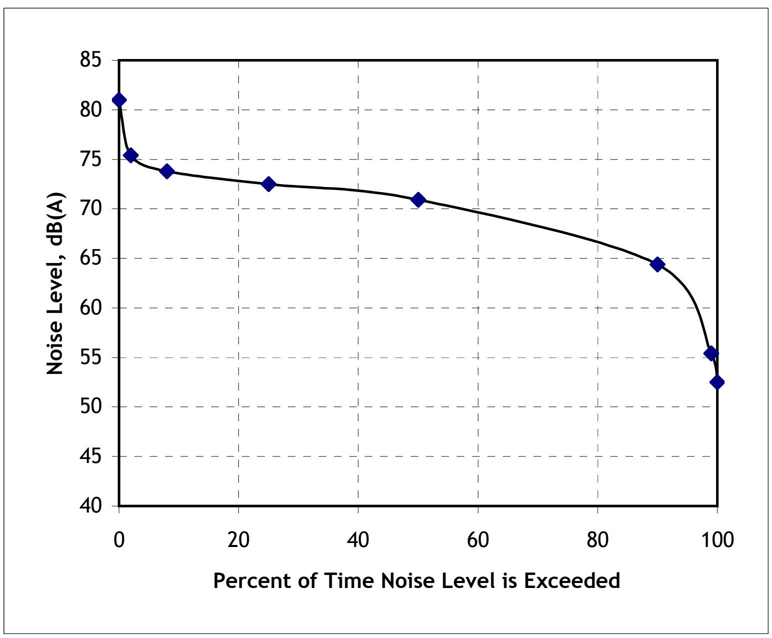
Distance: Approximately 50' from center of nearest lane

SLM Height: 5'

LD 820 S/N: 0996

LD CAL200 Calibrator S/N: 2916

Operator: David Limberg



	Measurement Period		
	11:25 AM to 11:45 AM	to	to
n*	Ln	Ln	Ln
2	75.4		
8	73.8		
25	72.5		
50	70.9		
90	64.4		
99	55.4		
Leq	71.1		
Lmax	81.0		
Lmin	52.5		

* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

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Table I-3. Noise Survey

Project: Dry-Stack Boat Storage Facility, LA County

Position: Position #3 - dental & pharmacy building on Admiralty Way near Bali Way

Date: February 13, 2008

Time: Noted

Noise Source: Traffic on Admiralty Way/ambient

Distance: Approximately 23' from center of nearest lane

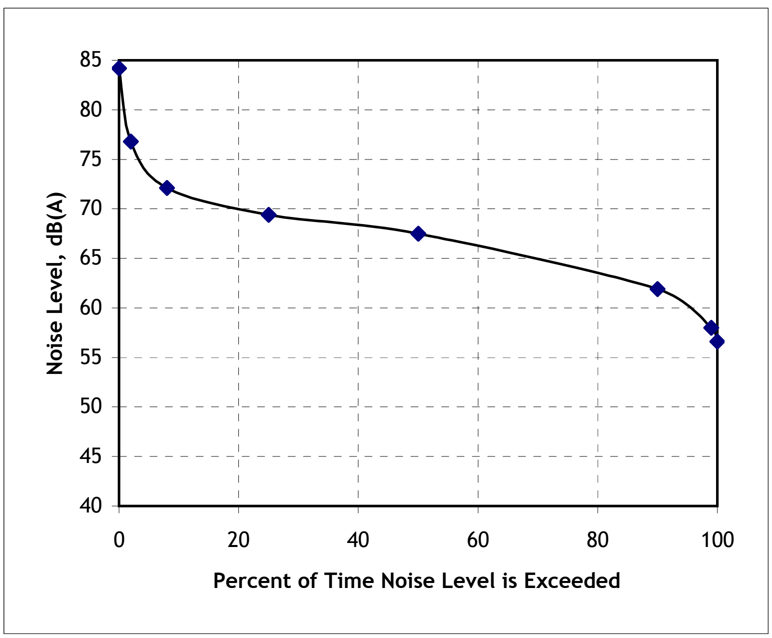
SLM Height: 5'

LD 820 S/N: 0996

LD CAL200 Calibrator S/N: 2916

Operator: David Limberg

	Measurement Period		
	12:05 PM to 12:25 PM	to	to
n*	**Ln**	**Ln**	**Ln**
2	76.8		
8	72.1		
25	69.4		
50	67.5		
90	61.9		
99	58.0		
Leq	69.3		
Lmax	84.2		
Lmin	56.6		



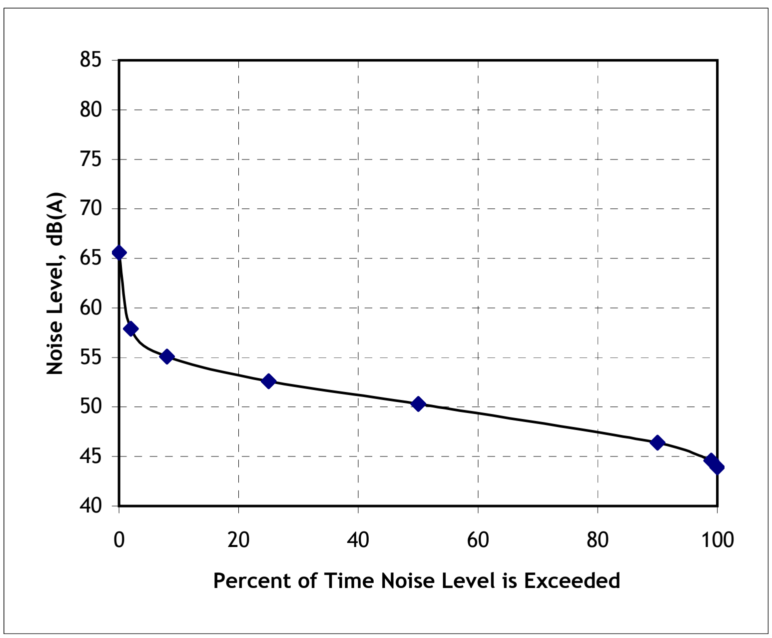
* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

WIELAND ACOUSTICS, INC.

Table I-4. Noise Survey

Project:	Dry-Stack Boat Storage Facility, LA County
Position:	Position #4 - near Marina del Rey Hotel (parking lot of 13524 Bali Way)
Date:	February 13, 2008
Time:	Noted
Noise Source:	Marina activity/ambient
Distance:	N/A
SLM Height:	5'
LD 820 S/N:	0996
LD CAL200 Calibrator S/N:	2916
Operator:	David Limberg

	Measurement Period		
	12:35 PM to 12:55 PM	to	to
n*	**Ln**	**Ln**	**Ln**
2	57.9		
8	55.1		
25	52.6		
50	50.3		
90	46.4		
99	44.6		
Leq	51.8		
Lmax	65.6		
Lmin	43.9		



* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

WIELAND ACOUSTICS, INC.

Table I-5. Noise Survey

Project: Dry-Stack Boat Storage Facility, LA County

Position: Position #5 - the Boathouse, 13640 Mindanao Way

Date: February 13, 2008

Time: Noted

Noise Source: Marina activity/boat repair/ambient

Distance: N/A

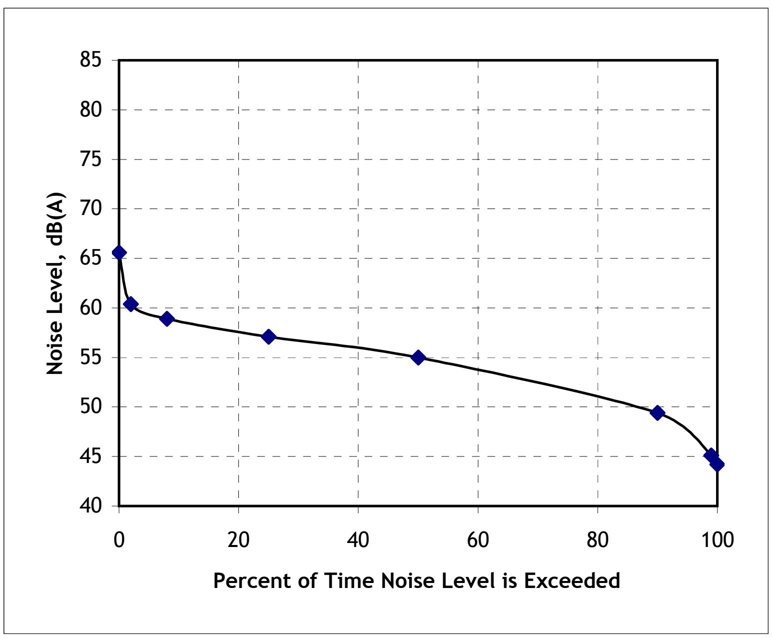
SLM Height: 5'

LD 820 S/N: 0996

LD CAL200 Calibrator S/N: 2916

Operator: David Limberg

	Measurement Period		
	1:08 PM to 1:30 PM	to	to
n*	Ln	Ln	Ln
2	60.4		
8	58.9		
25	57.1		
50	55.0		
90	49.4		
99	45.1		
Leq	55.7		
Lmax	65.6		
Lmin	44.2		



* Leq is the average sound level during the measurement period.
Ln is the sound level exceeded n% of the time during the measurement period.
Lmax and Lmin are the maximum and minimum sound levels during the measurement period.

WIELAND ACOUSTICS, INC.

APPENDIX II

Traffic Noise Analysis

Table II-1. Distance to CNEL Contour Lines, Existing

Arrerial / Reach	Arterial Type*	Speed Limit, mph	Elev.	% Trucks Med.	% Trucks Hvy	Avg. Daily Traffic 2008	CNEL @ 50' From Near Lane C/L 2008	Distance to Existing Contours From Near Lane Centerline, feet 60dB	65dB	70dB	75dB	80dB
ADMIRALTY WAY												
N/O Bali Way	4	30	AT	1.84%	0.74%	28,010	67.5	200	83	---	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	23,140	69.0	255	110	---	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	14,570	67.0	185	75	---	---	---
BALI WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,370	56.5	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	5	40	AT	1.84%	0.74%	7,660	64.0	110	---	---	---	---
FIJI WAY												
W/O Admiralty Way	4	35	AT	1.84%	0.74%	6,360	62.5	83	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	35	AT	1.84%	0.74%	17,260	66.5	170	69	---	---	---
E/O Lincoln Boulevard	1	35	AT	1.84%	0.74%	2,100	59.0	---	---	---	---	---
LINCOLN BOULEVARD												
N/O Bali Way	5	40	AT	1.84%	0.74%	35,100	70.5	320	143	56	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	30,790	70.0	300	130	50	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	34,690	70.5	320	143	56	---	---
S/O Fiji Way	6	45	AT	1.84%	0.74%	45,460	73.0	460	215	90	---	---
MINDANAO WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,090	55.5	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	30	AT	1.84%	0.74%	13,150	64.0	110	---	---	---	---
E/O Lincoln Boulevard	4	30	AT	1.84%	0.74%	18,090	65.5	143	56	---	---	---

* Arterial Types: 1) 2 lanes, 35 mph or less; 2) 2 lanes, 40 mph; 3) 2 lanes, 45 mph or more; 4) 4-6 lanes, 35 mph or less; 5) 4-6 lanes, 40 mph; 6) 4-6 lanes, 45 mph or more; 7) 4-6 lane freeway, 55 mph or more; 8) 8 lane freeway, 55 mph or more.

Notes:

'AT', 'ABOVE', and 'BELOW' refer to the elevation of the arterial relative to the surrounding area.

Table II-2. Distance to CNEL Contour Lines, Year 2011 Without Project

Arterial / Reach	Arterial Type*	Speed Limit, mph	Elev.	% Trucks Med.	% Trucks Hvy	Avg. Daily Traffic 2011	CNEL @ 50' From Near Lane C/L 2011	Distance to Future Without Project Contours From Near Lane Centerline, feet 60dB	65dB	70dB	75dB	80dB
ADMIRALTY WAY												
N/O Bali Way	4	30	AT	1.84%	0.74%	33,808	68.0	215	90	---	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	29,759	70.0	300	130	50	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	18,303	68.0	215	90	---	---	---
BALI WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,500	57.0	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	5	40	AT	1.84%	0.74%	8,991	65.0	130	50	---	---	---
FIJI WAY												
W/O Admiralty Way	4	35	AT	1.84%	0.74%	9,995	64.0	110	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	35	AT	1.84%	0.74%	20,012	67.0	185	75	---	---	---
E/O Lincoln Boulevard	1	35	AT	1.84%	0.74%	2,140	59.0	---	---	---	---	---
LINCOLN BOULEVARD												
N/O Bali Way	5	40	AT	1.84%	0.74%	38,877	71.0	340	155	62	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	33,686	70.5	320	143	56	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	38,406	71.0	340	155	62	---	---
S/O Fiji Way	6	45	AT	1.84%	0.74%	51,726	73.5	490	235	100	---	---
MINDANAO WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,170	56.0	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	30	AT	1.84%	0.74%	17,644	65.5	143	56	---	---	---
E/O Lincoln Boulevard	4	30	AT	1.84%	0.74%	22,164	66.5	170	69	---	---	---

* Arterial Types: 1) 2 lanes, 35 mph or less; 2) 2 lanes, 40 mph; 3) 2 lanes, 45 mph or more; 4) 4-6 lanes, 35 mph or less; 5) 4-6 lanes, 40 mph; 6) 4-6 lanes, 45 mph or more; 7) 4-6 lane freeway, 55 mph or more; 8) 8 lane freeway, 55 mph or more.

Notes:
'AT', 'ABOVE', and 'BELOW' refer to the elevation of the arterial relative to the surrounding area.

Table II-3. Distance to CNEL Contour Lines, Year 2011 With Project

Arterial / Reach	Arterial Type*	Speed Limit, mph	Elev.	% Trucks Med.	% Trucks Hvy	Avg. Daily Traffic 2011	CNEL @ 50' From Near Lane C/L 2011	Distance to Future With Project Contours From Near Lane Centerline, feet 60dB	65dB	70dB	75dB	80dB
ADMIRALTY WAY												
N/O Bali Way	4	30	AT	1.84%	0.74%	33,820	68.0	215	90	---	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	29,790	70.0	300	130	50	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	18,340	68.0	215	90	---	---	---
BALI WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,500	57.0	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	5	40	AT	1.84%	0.74%	9,010	65.0	130	50	---	---	---
FIJI WAY												
W/O Admiralty Way	4	35	AT	1.84%	0.74%	10,120	64.0	110	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	35	AT	1.84%	0.74%	20,100	67.0	185	75	---	---	---
E/O Lincoln Boulevard	1	35	AT	1.84%	0.74%	2,140	59.0	---	---	---	---	---
LINCOLN BOULEVARD												
N/O Bali Way	5	40	AT	1.84%	0.74%	38,940	71.0	340	155	62	---	---
Bali Way to Mindanao Way	5	40	AT	1.84%	0.74%	33,730	70.5	320	143	56	---	---
Mindanao Way to Fiji Way	5	40	AT	1.84%	0.74%	38,450	71.0	340	155	62	---	---
S/O Fiji Way	6	45	AT	1.84%	0.74%	51,770	73.5	490	235	100	---	---
MINDANAO WAY												
W/O Admiralty Way	1	30	AT	1.84%	0.74%	1,170	56.0	---	---	---	---	---
Admiralty Way to Lincoln Boulevard	4	30	AT	1.84%	0.74%	17,650	65.5	143	56	---	---	---
E/O Lincoln Boulevard	4	30	AT	1.84%	0.74%	22,170	66.5	170	69	---	---	---

* Arterial Types: 1) 2 lanes, 35 mph or less; 2) 2 lanes, 40 mph; 3) 2 lanes, 45 mph or more; 4) 4-6 lanes, 35 mph or less; 5) 4-6 lanes, 40 mph; 6) 4-6 lanes, 45 mph or more; 7) 4-6 lane freeway, 55 mph or more; 8) 8 lane freeway, 55 mph or more.

Notes:
'AT', 'ABOVE', and 'BELOW' refer to the elevation of the arterial relative to the surrounding area.

Appendix J – Traffic Impact Analysis: Dry Stack Boat Storage, dated May 20, 2010 prepared by Linscott, Law & Greenspan Engineers

1. Appendix A - Traffic Study Scope of Work
2. Traffic Counts, prepared by Transportation Studies, Inc.
3. Parking Utilization Assessment dated July 30, 2007 prepared by Hirsch Green Transportation Consulting, Inc.

LINSCOTT
LAW &
GREENSPAN
engineers

TRAFFIC IMPACT ANALYSIS

DRY STACK BOAT STORAGE

Marina Del Rey, California
January 26, 2011
(original dated May 20, 2010)

Prepared for:

Pacific Marina Development
3416 Via Lido, Suite G
Newport Beach, California 92663

LLG Ref. 2.07.2915.1

REGISTERED PROFESSIONAL ENGINEER
DANIEL A. KLOOS
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Exp. 9-30-11
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STATE OF CALIFORNIA

Prepared by:

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E. Project Driveway Intersection Level of Service Calculation Worksheets

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TRAFFIC IMPACT ANALYSIS

DRY STACK BOAT STORAGE

Marina Del Rey, California
January 26, 2011
(original dated May 20, 2010)

1.0 INTRODUCTION

This traffic impact analysis addresses the potential traffic impacts and circulation needs associated with the Dry Stack Boat Storage Project (hereinafter referred to as Project). The project site is located at 13483 Fiji Way within the Marina Del Rey area of unincorporated Los Angeles County, California.

This traffic report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the operating conditions at six (6) key study intersections within the project vicinity, estimates the trip generation potential of the proposed project, and forecasts future operating conditions without and with the proposed project. Where necessary, intersection improvements/mitigation measures are identified.

The traffic analysis follows Los Angeles County Department of Public Works (LACDPW) and City of Los Angeles Department of Transportation (LADOT) traffic study guidelines and is consistent with the Transportation Improvement Program (Appendix G) of the *Marina Del Rey Land Use Plan*, 1996, as well as the traffic impact assessment guidelines set forth in the current *Congestion Management Program for Los Angeles County*. The Scope of Work for this traffic study was developed in conjunction with LACDPW Traffic and Lighting Division staff.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at six (6) key study locations on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched. Based on our research, there are thirty-nine (39) related projects within a two-mile radius of the site that are located within the City of Los Angeles, the City of Culver City and the County of Los Angeles. These 39 related projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2013) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2013 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of 0.6% per year and adding traffic volumes generated by thirty-nine (39) related projects.

1.1 Study Area

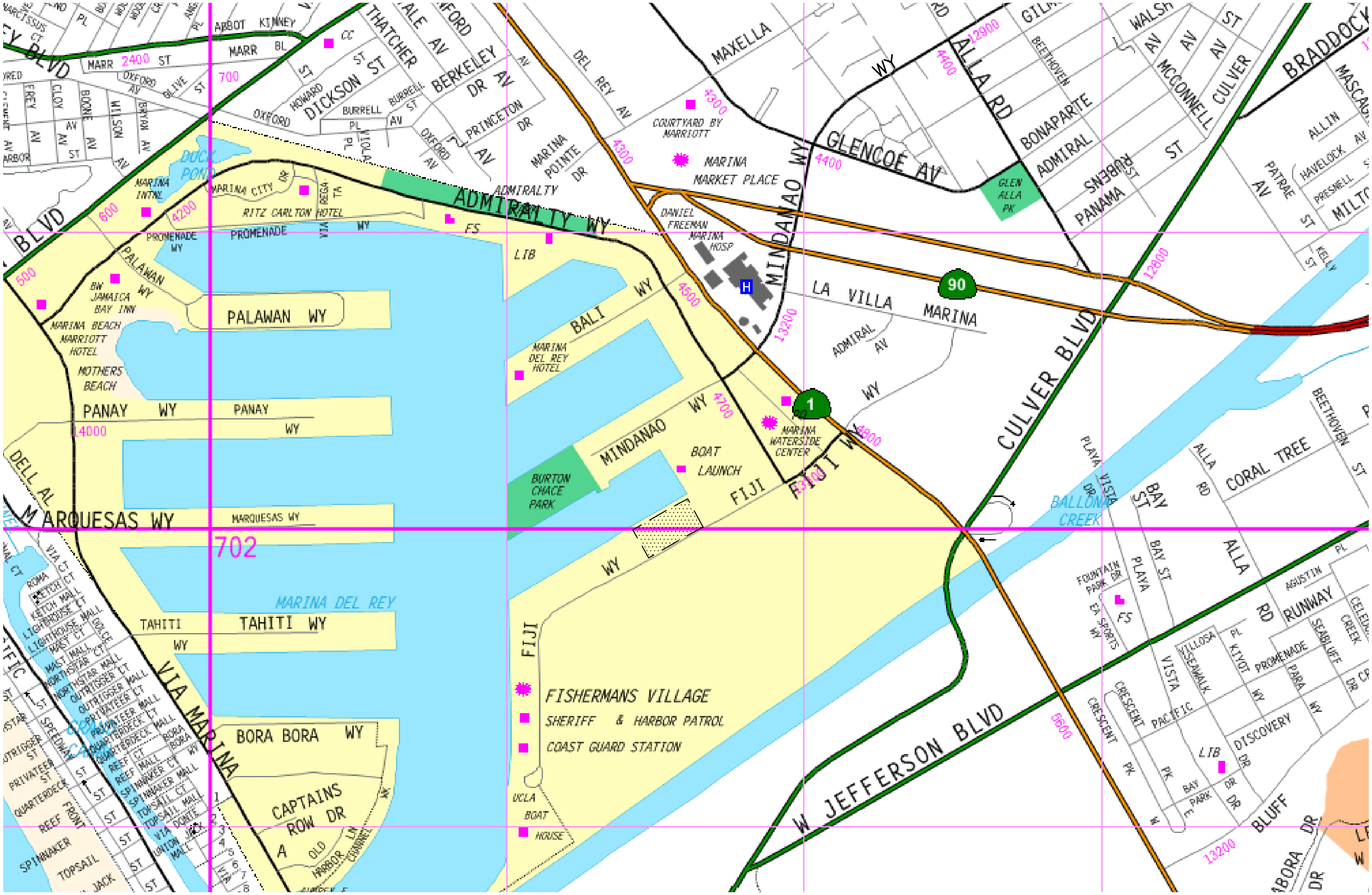
The six (6) key study intersections selected for evaluation were determined based on the approved Traffic Study Scope of Work and discussions with County of Los Angeles staff. ***Appendix A*** contains a copy of the approved Traffic Study Scope of Work. The key study intersections listed below provide both local and regional access to the study area and define the extent of the boundaries for this traffic impact investigation. The jurisdictions where the study intersections are located are identified as well. As shown below, the three study intersections along Lincoln Boulevard are under the jurisdiction of both the County of Los Angeles and the City of Los Angeles.

1. Admiralty Way at Fiji Way (County of Los Angeles)
2. Admiralty Way at Mindanao Way (County of Los Angeles)
3. Admiralty Way at Bali Way (County of Los Angeles)
4. Lincoln Boulevard at Fiji Way (County of Los Angeles/City of Los Angeles)
5. Lincoln Boulevard at Mindanao Way (County of Los Angeles/City of Los Angeles)
6. Lincoln Boulevard at Bali Way (County of Los Angeles/City of Los Angeles)

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the project and depicts the study locations and surrounding street system. The Volume-Capacity (V/C) and Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, related projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service, and/or mitigate the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing traffic conditions (Year 2010)
- AM and PM peak hour capacity analyses for existing plus ambient growth without and with project traffic conditions
- AM and PM peak hour capacity analyses for future (Year 2013) conditions without and with project traffic,
- Area-Wide Traffic Improvements,
- Project-Related Fair-Share Contributions,
- Site Access and Internal Circulation Evaluation,
- Parking Evaluation,
- Congestion Management Program Compliance Assessment and,
- Construction Traffic Impact Assessment.



SOURCE: THOMAS BROS.

KEY

= PROJECT SITE

NO SCALE

LINSCOTT LAW & GREENSPAN engineers

FIGURE 1–1

VICINITY MAP

DRY STACK BOAT STORAGE, MARINA DEL REY

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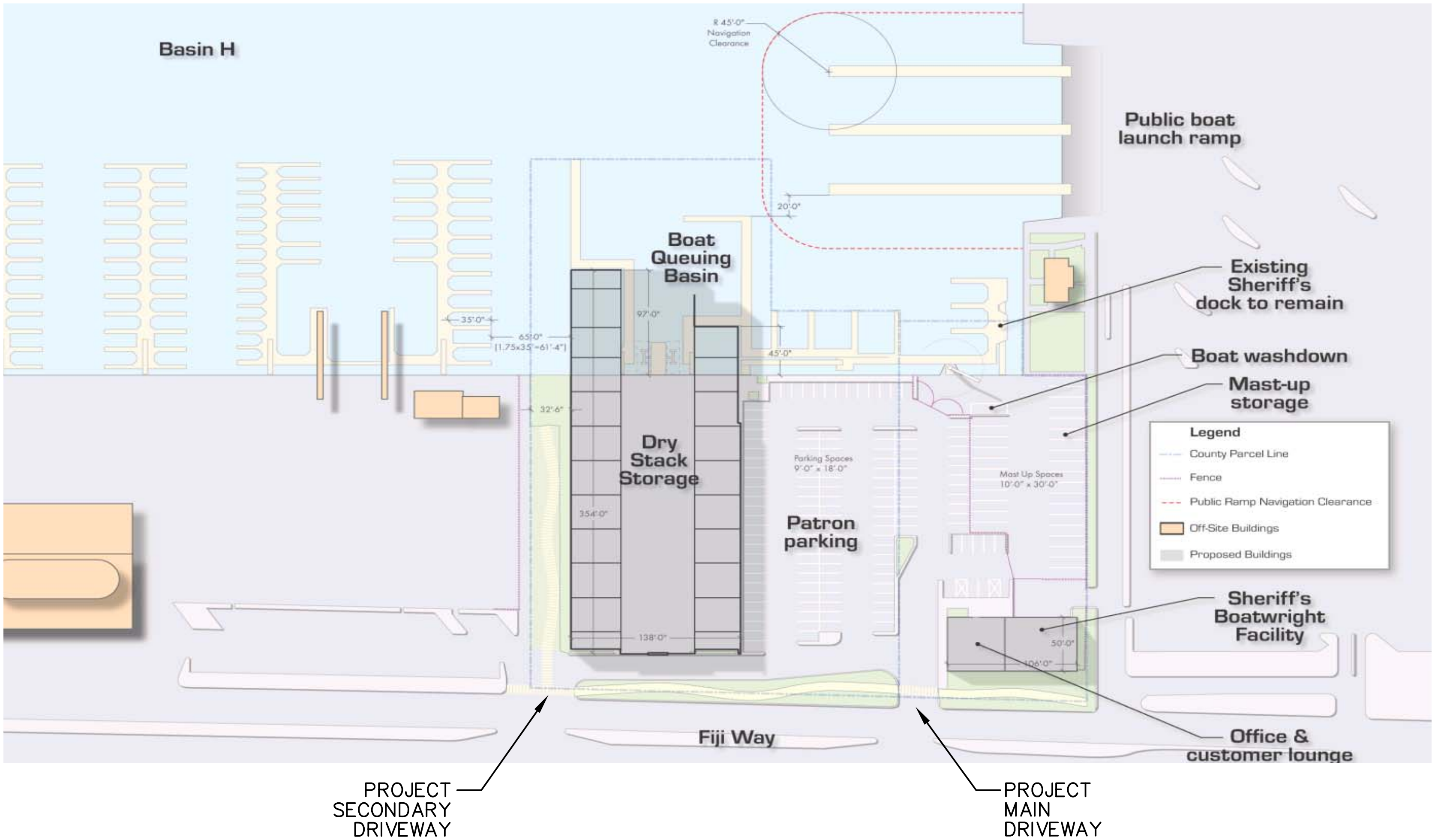
2.0 PROJECT DESCRIPTION

The project site is located at 13483 Fiji Way within the Marina Del Rey area of unincorporated Los Angeles County, California. The project site is located within Mindanao Development Zone 9 (DZ 9) on County-owned parcels 52R and GG. Parcel 52R currently supports Dock 52 and is developed as a surface parking lot with free parking for Fisherman's Village, Marina Cruise Line, and other boat charters. Parcel GG is now developed as an Administrative Annex for the Department of Beaches and Harbors. Sheriff's facilities are also co-located on Parcel GG. The existing on-site surface parking and the Administrative Annex for the Department of Beaches and Harbors will be relocated further west on Fiji Way as part of the development of this project.

Figure 2-1 presents the proposed site plan for the Dry Stack Boat Storage project prepared by AC Martin Partners, Inc. As shown, the proposed Project consists of a boat storage facility with approximately 345 "dry slips" in a structure and 30 mast-up sailboat storage spaces in the adjacent parking lot for a total of 375 boat storage spaces. Additionally, conventional "wet slips" will be provided adjoining the bulkhead for the temporary staging of boats being retrieved from or returned to their individual storage spaces. A boat wash down facility will also be incorporated on-site. A proposed two-story, 3,080 square-foot (SF) building will house the Project office and will also provide services and amenities to boaters such as a visitor lounge, shower facilities, and personal lockers. The proposed Project will also incorporate the existing Sheriff's boatwright shop in a new two-story building (a 2,850 SF building footprint with a 500 SF second floor mezzanine). The existing Sheriff's boat dock will remain. A total of 135 surface parking spaces will be provided on-site and the project is expected to be completed by the Year 2013.

2.1 Site Access

Access to the proposed Project will be provided via two full access unsignalized driveways along Fiji Way. The easterly driveway will provide primary access to the site and the westerly driveway will provide an incidental second access. It should be noted that the westerly driveway currently exists and will continue to provide joint access to property immediately to the west.



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LINSCOTT LAW & GREENSPAN engineers

NO SCALE

SOURCE: AC MARTIN PARTNERS, INC.

FIGURE 2-1

PROPOSED SITE PLAN

DRY STACK BOAT STORAGE, MARINA DEL REY

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The **Marina Freeway (SR-90)** provides regional access to the proposed project site. The Marina Freeway (SR-90) is an east-west oriented freeway that extends from Culver City to Marina del Rey. Between Slauson Avenue and east of Culver Boulevard, the Marina Freeway (SR-90) provides three travel lanes in each direction. From that point to Lincoln Boulevard (SR-1), two travel lanes are generally provided in each direction. Signalized intersections are provided at Lincoln Boulevard, Mindanao Way and Culver Boulevard and provide regional connectivity. The posted speed limit on the Marina Freeway (SR-90) is 45 miles per hour (mph) in the vicinity of the proposed Project.

The principal local network of streets serving the proposed Project includes Lincoln Boulevard, Admiralty Way, Fiji Way and Mindanao Way. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Lincoln Boulevard is generally a six-lane, divided roadway oriented in the north-south direction in the vicinity of the proposed project. Parking is generally prohibited along both sides of Lincoln Boulevard within the vicinity of the proposed project. The posted speed limit on Lincoln Boulevard is 40 mph north of Fiji Way and 45 mph south of Fiji Way. Traffic signals control the study intersections of Lincoln Boulevard at Fiji Way, Mindanao Way and Bali Way. Lincoln Boulevard is classified as a Major Highway in the County of Los Angeles Highway Plan.

Admiralty Way is generally a four-lane, divided roadway oriented in the north-south direction in the vicinity of the proposed project. Parking is generally prohibited along both sides of Admiralty Way. The posted speed limit on Admiralty Way is 40 mph. Traffic signals control the study intersections of Admiralty Way at Fiji Way, Mindanao Way and Bali Way. Admiralty Way provides access through the Marina del Rey area between Via Marina and Fiji Way, and is classified as a Secondary Highway in the County of Los Angeles Highway Plan.

Fiji Way is generally a two-lane, undivided roadway east of Lincoln Boulevard and is generally a four-lane, divided roadway west of Lincoln Boulevard oriented in the east-west direction. Fiji Way borders the project site to the south and will provide access to the project site via two proposed driveways. Parking is prohibited on both sides of Fiji Way west of Lincoln Boulevard; however, east of Lincoln Boulevard curbside parking is generally provided. The posted speed limit on Fiji Way is 35 mph. Traffic signals control the study intersections of Fiji Way at Lincoln Boulevard and Admiralty Way.

Mindanao Way is generally a four-lane, divided roadway generally oriented in the east-west direction. Parking is generally prohibited along both sides of Mindanao Way in the vicinity of the proposed project. The posted speed limit on Mindanao Way is 30 mph. Traffic signals control the study intersections of Mindanao Way at Lincoln Boulevard and Admiralty Way. Mindanao Way is classified as a Secondary Highway in the County of Los Angeles Highway Plan.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.2 Existing Public Transit Service

Public bus transit service in the project study area is currently provided by the Los Angeles County Metropolitan Transit Authority (MTA), LADOT Commuter Express, the City of Santa Monica, and the City of Culver City. A summary of the existing transit routes, including the transit route, destinations and number of buses during the peak hours is presented in ***Table 3–1***. The existing public transit routes provided within the project site vicinity are illustrated in ***Figure 3–2***.

3.3 Existing Traffic Volumes

Six (6) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the project. These key study intersections were selected for evaluation based on discussions with County of Los Angeles Public Works Department staff.

Existing AM and PM peak hour traffic volumes for the key study intersections evaluated in this report were obtained from manual morning and evening peak hour turning movement counts conducted by Transportation Studies Inc. in March 2010. ***Figures 3-3*** and ***3-4*** illustrate the existing AM and PM peak hour traffic volumes at the key study intersections evaluated in this report, respectively. ***Appendix B*** contains the detailed peak hour count sheets for the key intersections evaluated in this report.

3.4 Existing Intersection Conditions

In conformance with County of Los Angeles requirements, AM and PM peak hour operating conditions for the six (6) key study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections.

3.4.1 *Intersection Capacity Utilization (ICU) Method of Analysis*

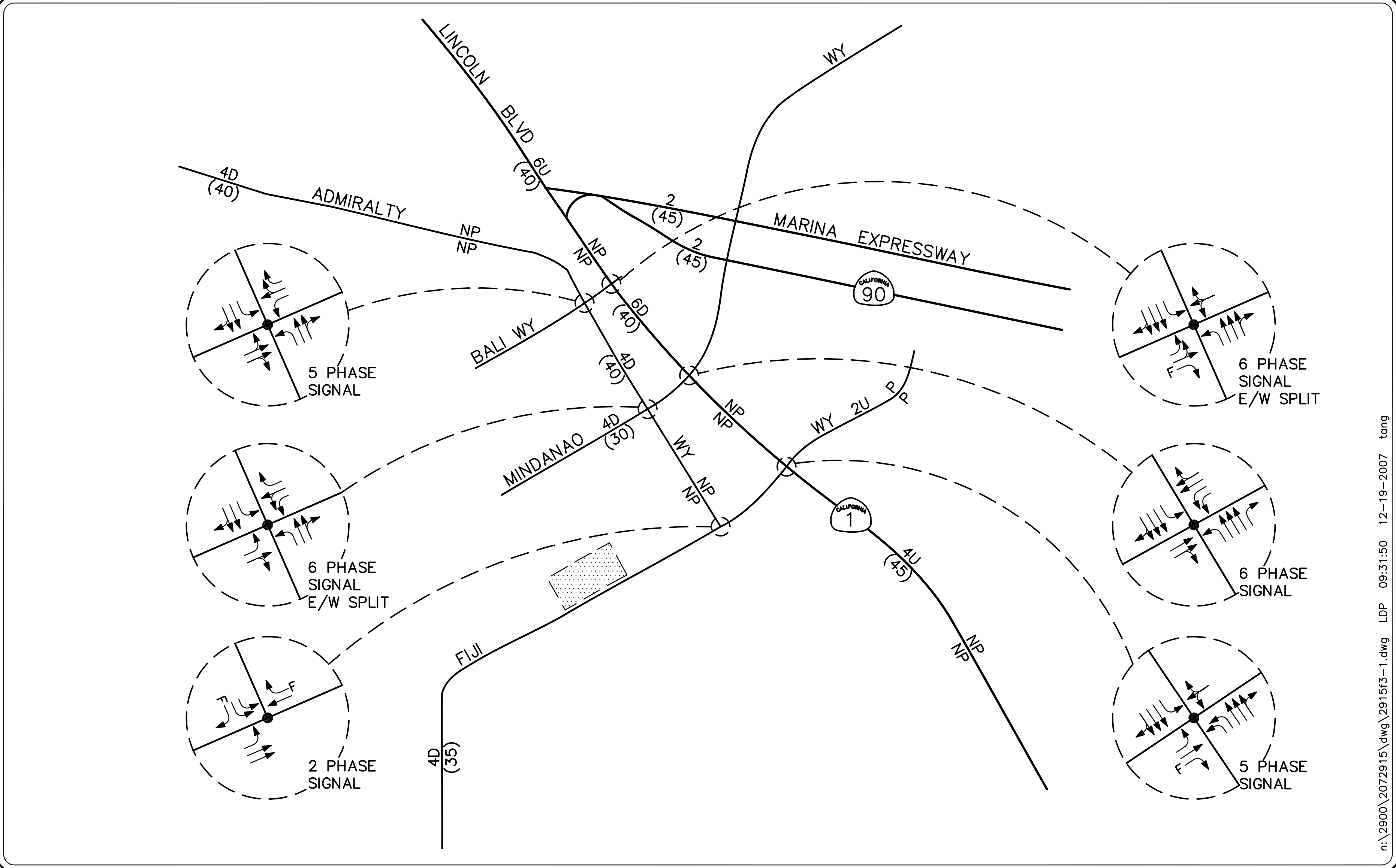
The *Intersection Capacity Utilization* (ICU) technique estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance adjustment factor of 0.10 was added to each Level of Service calculation.

TABLE 3-1
EXISTING TRANSIT ROUTES

Route	Destinations	Roadway Near Site	No. of Buses During Peak Hour DIR	AM	PM
MTA 108[1]	Marina Del Rey to Pico Rivera (via Culver City, Los Angeles, Huntington Park)	Lincoln Boulevard, Mindanao Way	EB WB	2 3	2 2
MTA 220[1]	LAX to West Hollywood (via Playa Del Rey, Marina Del Rey, Palms)	Lincoln Boulevard, Mindanao Way	NB SB	1 1	1 1
Culver City Route 1[2]	Venice to West Los Angeles (via Mar Vista, Palms, Culver City)	Lincoln Boulevard, Washington Boulevard	EB WB	5 5	5 5
Culver City Route 7[2]	Venice & Culver City to Marina Del Rey (via Culver City and Marina Del Rey, primarily along Culver Boulevard)	Mindanao Way, Admiralty Way, Fiji Way	EB WB	2 2	1 1
LA DOT Commuter Express 437[3]	Venice to Downtown Los Angeles (via Marina Del Rey, Mar Vista, Culver City)	Via Marina, Admiralty Way, Mindanao Way	EB WB	2 0	0 1
Santa Monica Route 3[4]	UCLA Transit Center to Metro Green Line (via Santa Monica, Marina Del Rey, Westchester)	Lincoln Boulevard, Washington Boulevard	NB SB	4 4	4 5

1 Source: Los Angeles County Metropolitan Transportation Authority (LACMTA) Website.
2 Source: Culver CityBus Website.
3 Source: LADOT Transit – Commuter Express Website.
4 Source: City of Santa Monica, Big Blue Bus Website.



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

←	= APPROACH LANE ASSIGNMENT
●	= TRAFFIC SIGNAL
P	= PARKING, NP = NO PARKING
U	= UNDIVIDED, D = DIVIDED
2	= NUMBER OF TRAVEL LANES
(XX)	= POSTED SPEED LIMIT (MPH)
F	= FREE RIGHT TURN
	= PROJECT SITE

FIGURE 3–1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

DRY STACK BOAT STORAGE, MARINA DEL REY

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N NO SCALE

SOURCE: LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (LACMTA)

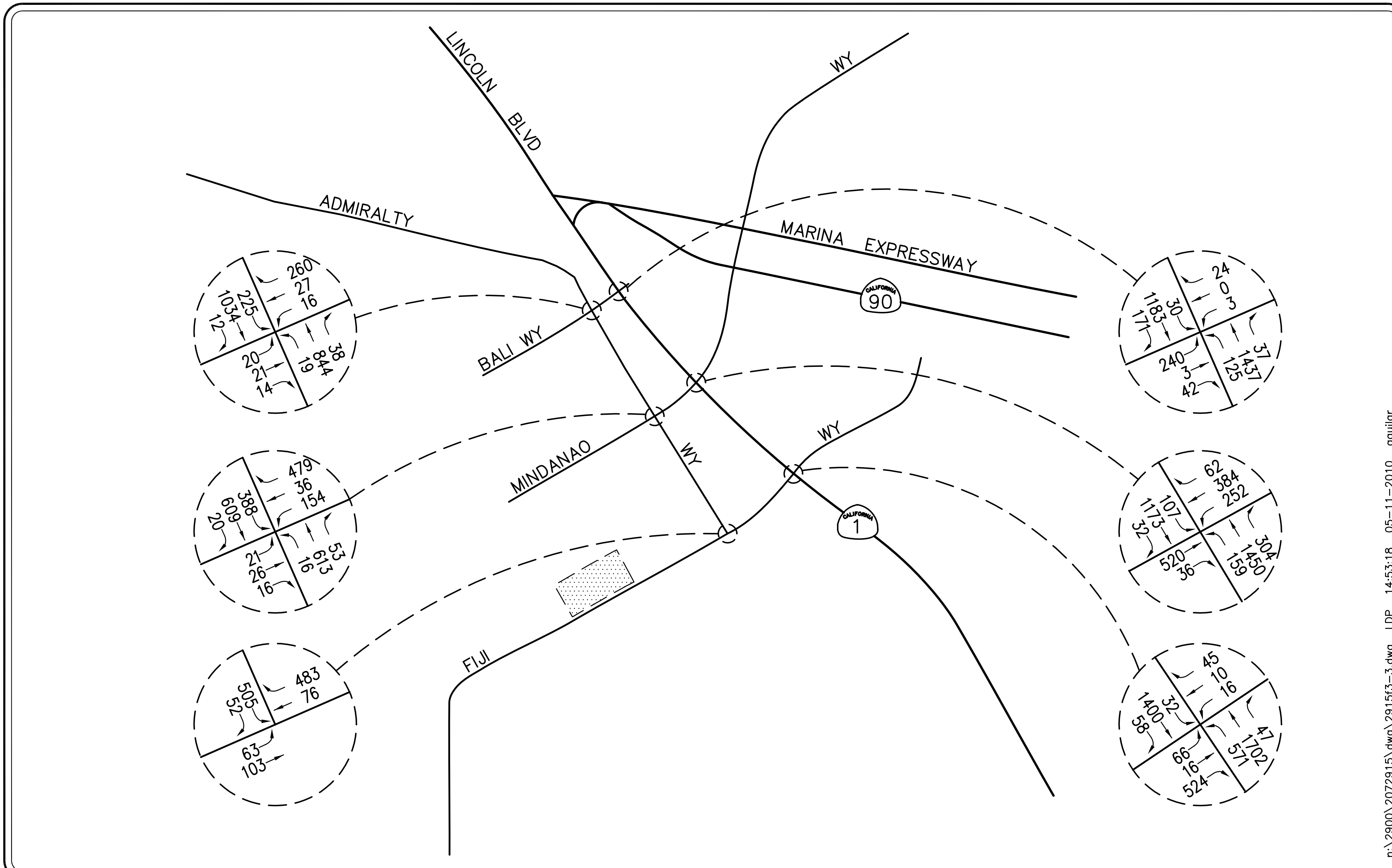
KEY

= PROJECT SITE

FIGURE 3-2

EXISTING PUBLIC TRANSIT ROUTES

DRY STACK BOAT STORAGE, MARINA DEL REY



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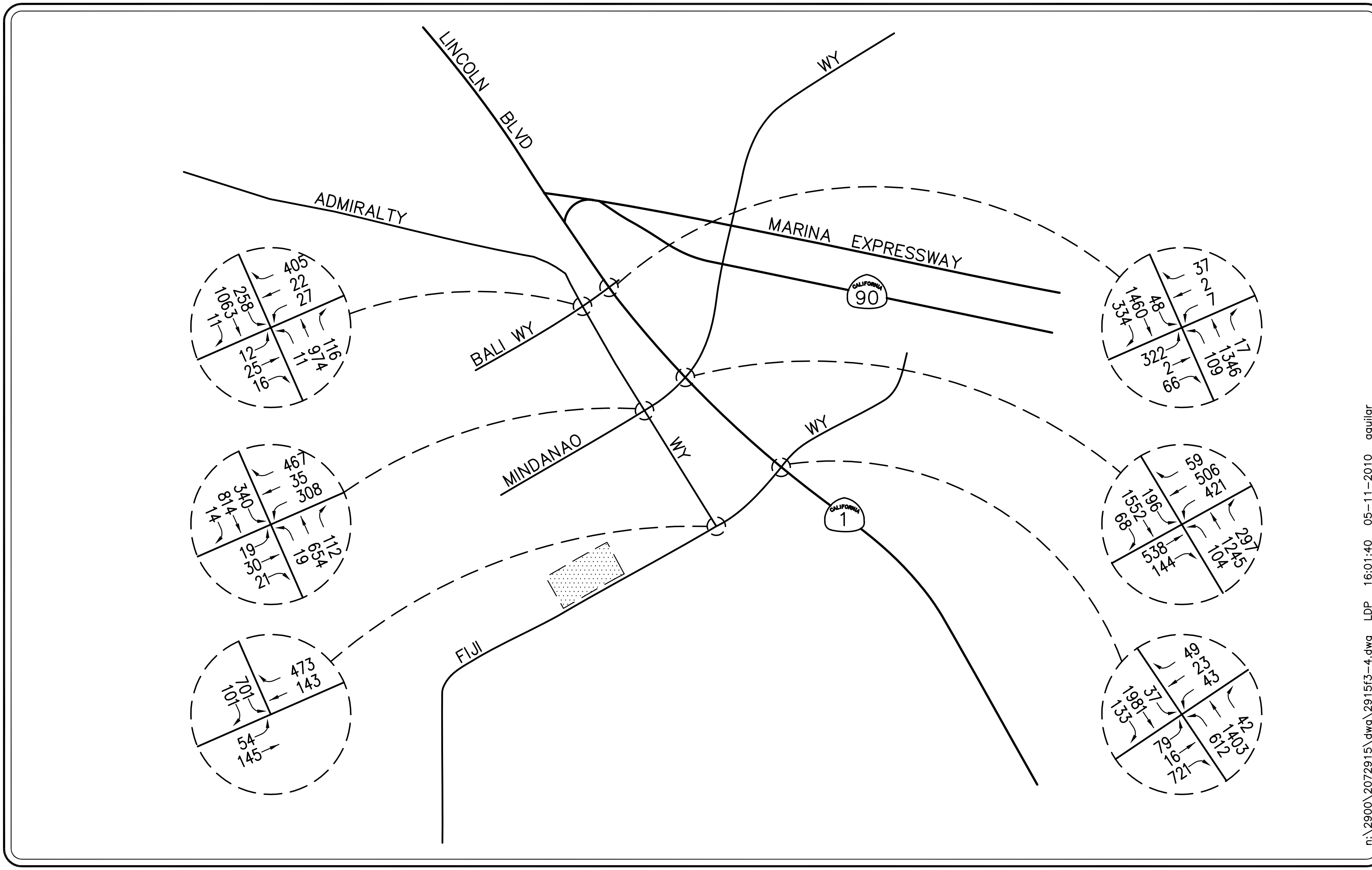
NO SCALE

KEY
= PROJECT SITE

FIGURE 3-3

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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N NO SCALE

KEY

= PROJECT SITE

FIGURE 3-4

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-2***. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

For the three (3) key study intersections also located within the City of Los Angeles (i.e. Lincoln Boulevard/Fiji Way, Lincoln Boulevard/Mindanao Way and Lincoln Boulevard/Bali Way), AM and PM peak hour operating conditions were also evaluated using the *Critical Movement Analysis* (CMA) methodology for signalized intersections per LADOT traffic study guidelines.

Please note that per the direction of LACDPW Traffic and Lighting Division staff, the level of service calculations for the six (6) key study intersections include a ten percent reduction (i.e. 0.10) to account for the LADOT Automated Traffic Surveillance and Control (ATSAC) system and the LADOT Adaptive Traffic Control System (ATCS). ATSAC accounts for a seven percent reduction and ATCS accounts for a three percent reduction for a total of ten percent.

3.5 Existing Level of Service Results

Table 3-3 summarizes the existing peak hour service level calculations for the six (6) key study intersections based on existing traffic volumes and current street geometry. Review of *Table 3-3* indicates that all six (6) key study intersections currently operate at LOS C or better during the AM and PM peak hours.

Given that the three study intersections along Lincoln Boulevard are under the jurisdiction of both the County of Los Angeles and the City of Los Angeles, *Table 3-3* reports both the ICU/LOS and CMA/LOS values per each jurisdictions methodology.

Appendix C presents the ICU/LOS and CMA/LOS calculations for the six (6) key study intersections for the AM peak hour and PM peak hour.

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS[5]

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

5 Source: *Transportation Research Board Circular 212 - Interim Materials on Highway Capacity*.

TABLE 3-3
EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersections	Time Period	Control Type	ICU/CMA	LOS
1. Admiralty Way at Fiji Way	AM PM	2Ø Traffic Signal	0.262 0.366	A A
2. Admiralty Way at Mindanao Way	AM PM	6Ø Traffic Signal	0.536 0.591	A A
3. Admiralty Way at Bali Way	AM PM	5Ø Traffic Signal	0.444 0.594	A A
4. Lincoln Boulevard at Fiji Way	AM PM	5Ø Traffic Signal	0.587/0.558 0.774/0.767	A/A C/C
5. Lincoln Boulevard at Mindanao Way	AM PM	6Ø Traffic Signal	0.631/0.632 0.762/0.785	B/B C/C
6. Lincoln Boulevard at Bali Way	AM PM	6Ø Traffic Signal	0.527/0.461 0.672/0.612	A/A B/B

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are typically found in the 8th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2003] and *San Diego Traffic Generators*, dated April 2002, published by San Diego Association of Governments (SANDAG). Appendix G of the *Marina Del Rey Land Use Plan* contains trip rates for uses within the marina, however no specific trip rates are provided for a "Dry Stack Boat Storage" Land Use. Since neither of the above reference manuals include trip rates specific to a "Dry Stack Boat Storage" Land Use, a trip generation study of a similar facility was conducted.

5.1.1 *Trip Generation Study*

Dry Stack Boat Storage facilities differ from conventional marinas in that their primary, if not sole function, is to store a boat, out of the water, between uses. While slip tenants in a "wet" marina may visit and "use" their boat (ie: perform maintenance, entertain, pass the time, and even stay aboard overnight) without actually leaving a slip, such is not the case in a dry stack facility. That is because boats are stored in a racking system, and are inaccessible to the boater unless retrieved by site personnel and "dropped" to a staging ("wet") slip. This retrieval process is typically initiated by a telephone call from the boat owner to the facility, and the vessel's retrieval timed to occur in advance of the arrival of the boat owner and their party.

Once in the staging slip, the boater boards the boat, and typically within a short time, heads out on the water for their planned activity. Following that activity, the boater returns the boat to a staging slip, disembarks with their party and personal items, and (typically following a wash down of the hull) facility personnel return the boat to its designated position within the racking system. This utilization pattern results in a trip-making pattern per storage space that is significantly less than that for a conventional "wet" slip.

The trip generation investigation input to this study was conducted at an existing "Dry Stack Boat Storage" facility located at 151 Shipyard Way in the City of Newport Beach, California. Key attributes of the field study facility, as reported by its management, were as follows:

- a total of 230 dry stack storage spaces
- staging/queuing area in the water for 30 boats
- summer weekday use (Tuesday thru Thursday) by about 20 boats per day
- summer weekend use (Friday thru Monday) by about 60 boats per day
- non-summer weekday use (Tuesday thru Thursday) by about 10-15 boats per day
- non-summer weekend use (Friday thru Monday) by 30-40 boats per day

From the above, it is apparent that even on summer weekend days, the dry stack handles only about 26% (60/230) of the boats it stores. On summer weekdays, that value drops to about 9% (20/230), and is on the order of 6% (15/230) on non-summer weekdays.

The trip generation investigation was structured to obtain a weekday daily, AM peak hour and PM peak hour trip rate specific to a "Dry Stack Boat Storage" Land Use. Observations were conducted at the existing facility on Wednesday September 26, 2007 (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM), Thursday September 27, 2007 (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM) and Friday September 28, 2007 (7:00 AM to 6:00 PM). The trip generation study observed and recorded the number of vehicles entering and exiting the existing facility in fifteen-minute intervals during the aforementioned hours. ***Appendix D*** contains the trip generation study data (see ***Tables D-1, D-2, D-3*** and ***D-4***).

Please note that the highest in and out values amongst the three days for each fifteen-minute interval were utilized to develop the trip generation rates to provide a conservative trip generation forecast.

5.1.2 *Trip Generation Study Results*

A daily trip generation rate, AM peak hour trip generation rate (total rate, inbound rate and outbound rate) and PM peak hour trip generation rate (total rate, inbound rate and outbound rate) was determined based on the information gathered in the trip generation study. The daily trip generation rate was determined by dividing the total number of vehicle trips (inbound and outbound) by the total number of dry stack storage spaces. To account for daily fluctuations in the facility's operations, and for the fact that observations were not conducted "after hours" (following the closing time of the facility) on Wednesday September 26^{th} and Thursday September 27^{th}, the actual field study data was increased by ten percent (10%) to arrive at the daily trip generation rate. The AM peak hour and PM peak hour trip generation rates were determined by dividing the total number of vehicle trips during the respective peak hour (inbound and outbound) by the total number of dry stack storage spaces. The peak hour inbound and outbound trip generation rates are based on the relationship of the inbound and outbound vehicle trips during the peak hour to the total vehicle trips during the peak hour.

As shown in *Table D-4* of *Appendix D*, a total of 70 vehicles (37 inbound and 33 outbound) were observed from 7:00 AM to 6:00 PM. The AM peak hour occurred between 8:00 AM and 9:00 AM where 11 vehicles (7 inbound, 4 outbound) were observed and the PM peak hour occurred between 5:00 PM and 6:00 PM where 11 vehicles (1 inbound, 10 outbound) were observed. Based on the results of the trip generation study and the methodology described above, a daily trip generation rate of 0.334 trips/dry stack storage space, an AM peak hour trip generation rate of 0.048 trips/dry stack storage space (inbound = 0.031 and outbound = 0.017) and a PM peak hour trip generation rate of 0.048 trips/dry stack storage space (inbound = 0.004 and outbound = 0.044) were calculated for the existing Newport Beach "Dry Stack Boat Storage" facility.

Table 5-1 summarizes the trip generation study rates used in forecasting the vehicular trips generated by the proposed project and also presents the project's forecast peak hour and daily traffic volumes. Review of *Table 5-1* indicates that the proposed Project is forecast to generate approximately 125 daily trips, with 18 trips (12 inbound, 6 outbound) produced in the AM peak hour and 18 trips (2 inbound, 16 outbound) produced in the PM peak hour on a "typical" weekday.

For comparison purposes, *Table 5-1* also shows the trip generation rates and respective trip generation forecasts for a Marina Land Use (i.e. trip end per wet slip) as contained within Appendix G of the *Marina Del Rey Land Use Plan*. It should be noted that “wet slips” provide both a storage and recreational component (boaters and guests may visit the boat as a recreational activity in and of itself, without actually leaving the slip), while dry stack is typically purely a storage venue. Even though these “wet slip” rates would result in a greater trip generation forecast for the proposed Project, the trip generation forecast resulting from the trip generation study (i.e. 125 daily trips, 18 AM peak hour trips and 18 PM peak hour trips) is consistent with a like facility, and therefore most appropriate for this traffic analysis given the uniqueness of the proposed land use.

5.2 Consistency With Marina Del Rey LUP

The Marina del Rey Land Use Plan (LUP) outlines the amount of allowable new development within Marina del Rey based on the amount of additional traffic generated and identifies improvement measures to be installed incrementally with the new development. Appendix G (Transportation Improvement Program) outlines recommended improvement measures to mitigate the traffic generation associated with the anticipated development in Marina del Rey. As mentioned previously, the project site is located on the County-owned Parcels 52R and GG in the Mindanao DZ 9. The development potential of the Mindanao development zone as outlined in the Marina del Rey LUP includes 14,500 SF of retail space and 26,000 SF of office space. In addition, the LUP currently designates the proposed project site as “Public Facility”, which does not allow the proposed Project and the proposal is to request an amendment to the Marina del Rey Local Coastal Program (the "LCP") to designate the Property "Boat Storage". This proposal is particularly well aligned with the intent of the LCP, as reflected in its goals and policies, by providing enhanced recreational boating opportunities. As a result, while the proposed project is not consistent with the LUP, the project trip generation forecast is significantly less than the development potential for the zone if developed as visitor-serving commercial and office uses.

5.3 Project Traffic Distribution and Assignment

The general, directional traffic distribution pattern for the proposed Project is presented in ***Figure 5-1.*** Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Lincoln Boulevard, Washington Boulevard, etc.),
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- input from County of Los Angeles staff, and
- ingress/egress availability at the project site.

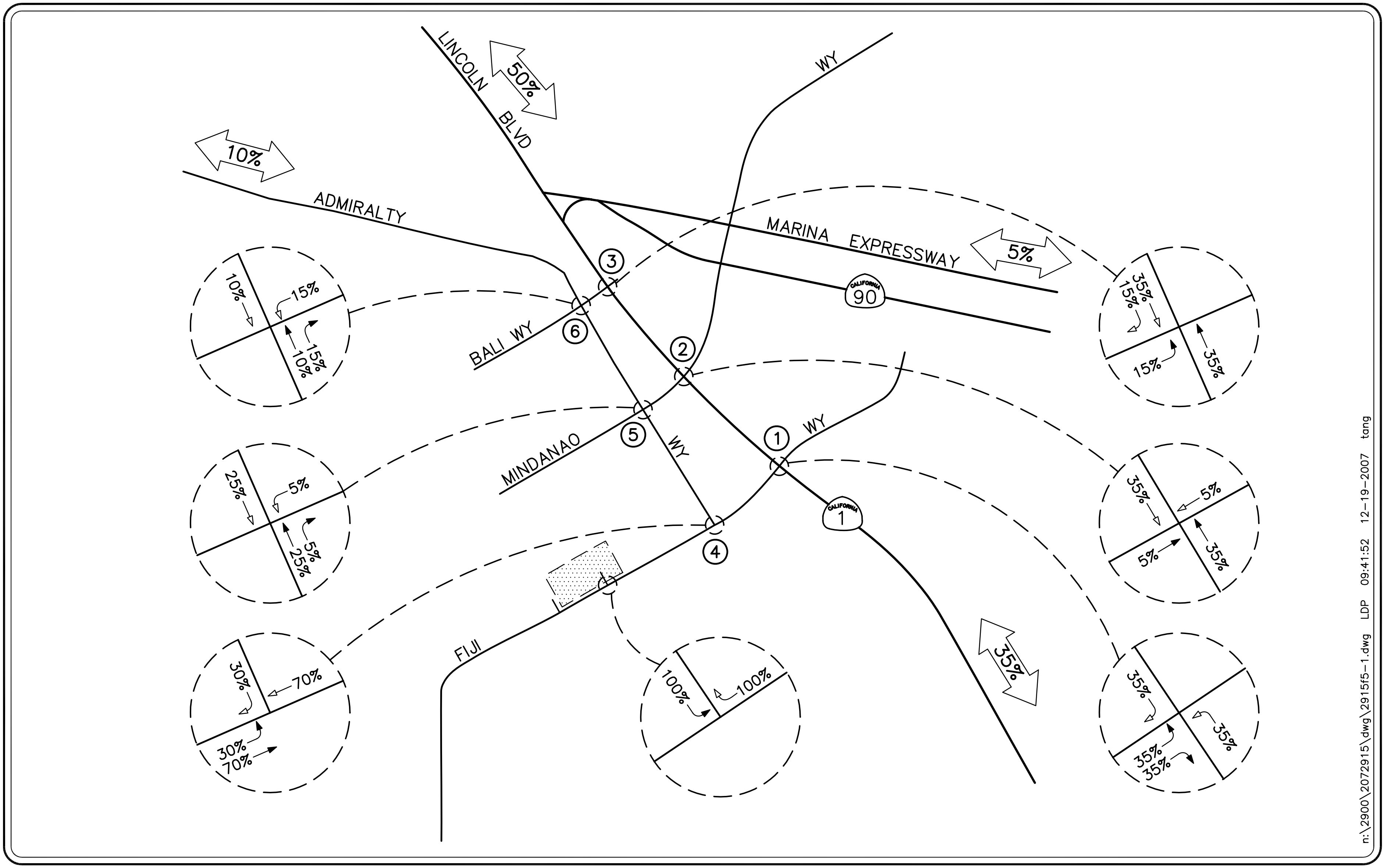
The anticipated AM and PM peak hour project volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3***, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

TABLE 5-1
PROJECT TRAFFIC GENERATION FORECAST

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
Marina (TE/Wet Slip)[6]	--	0.044	0.083	0.126	0.050	0.087	0.137
Dry Stack Boat Storage (TE/Dry Stack Space)[7]	0.334	0.031	0.017	0.048	0.004	0.044	0.048
Proposed Project Generation Forecast:							
▪ Based on Marina Rates (375 Spaces)	--	16	31	47	19	32	51
▪ Based on Dry Stack Rates (375 Spaces)	125	12	6	18	2	16	18
Traffic Generation Forecast	**125**	**12**	**6**	**18**	**2**	**16**	**18**

6 Source: Appendix G of the Specific Plan for the Marina (Table 2-11 from the Marina Del Rey Traffic Study, prepared by DKS Associates, dated January 17, 1991).

7 Source: Rates developed from the trip generation study conducted at the Newport Beach Dry Stack Boat Storage facility on September 26, 27 and 28, 2007.



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N NO SCALE

KEY

= INBOUND PERCENTAGE

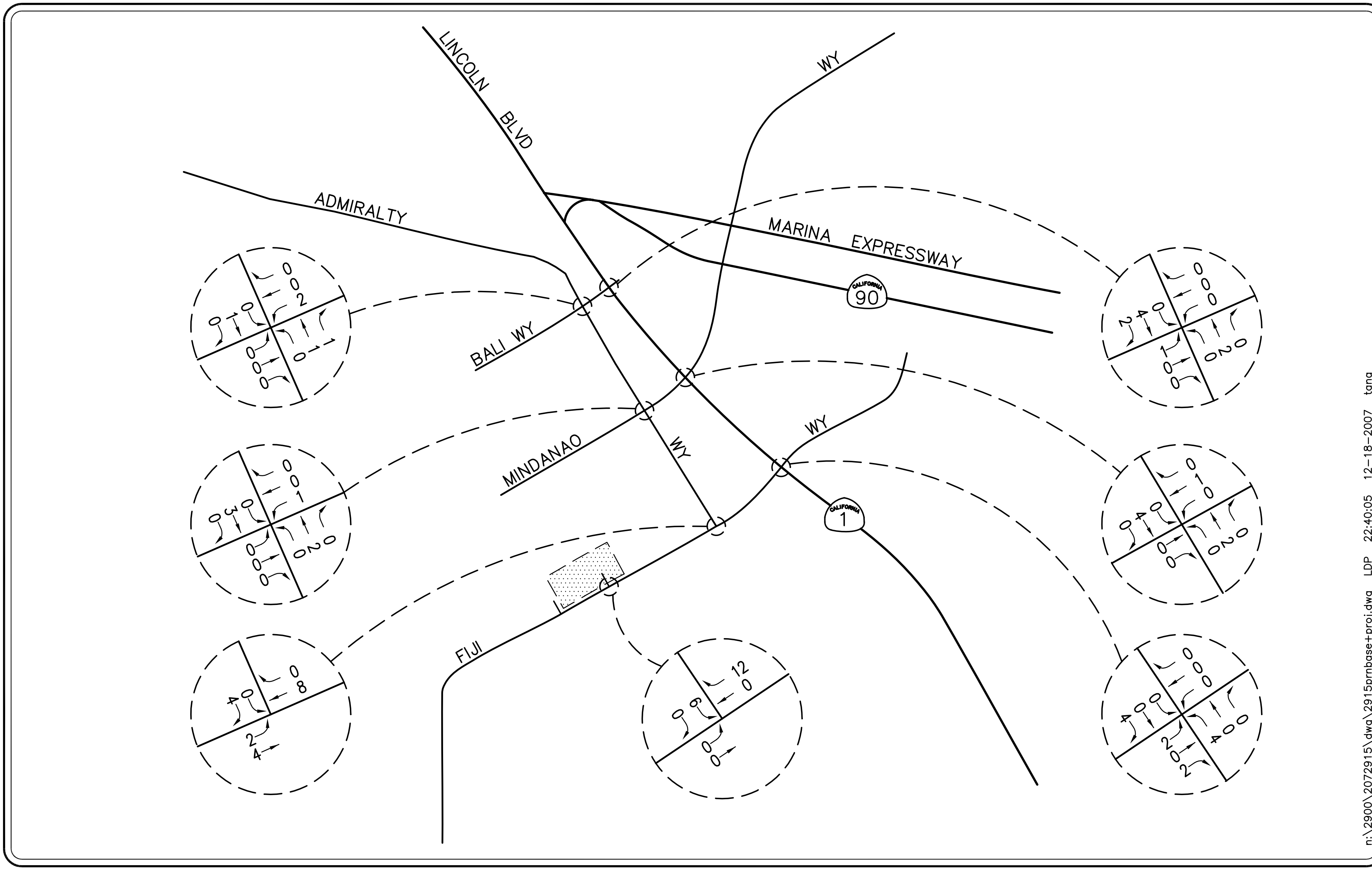
= OUTBOUND PERCENTAGE

= PROJECT SITE

FIGURE 5–1

PROJECT TRAFFIC DISTRIBUTION PATTERN

DRY STACK BOAT STORAGE, MARINA DEL REY



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N NO SCALE

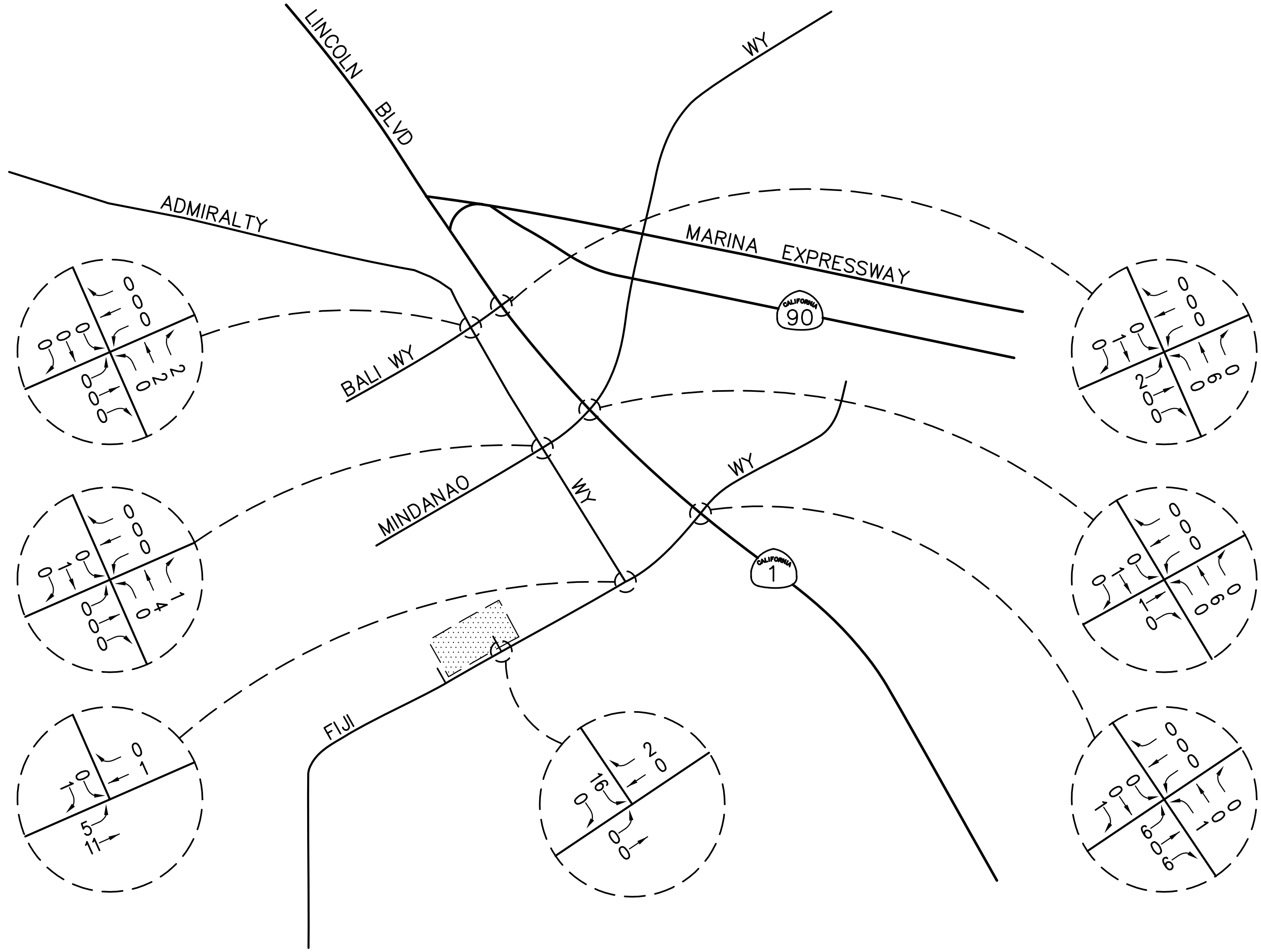
KEY

= PROJECT SITE

FIGURE 5-2

AM PEAK HOUR PROJECT TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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N NO SCALE

KEY
= PROJECT SITE

FIGURE 5-3

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at 0.60% per year. Applied to existing Year 2010 traffic volumes results in a 1.80% increase growth in existing volumes to horizon year 2013.

6.2 Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (related projects) within a two-mile radius of the proposed project has been researched at the City of Los Angeles, City of Culver City and the County of Los Angeles. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are thirty-nine (39) related projects either located in the City of Los Angeles, the City of Culver City or the County of Los Angeles that have either been built, but not yet fully occupied, or are being processed for approval. These thirty-nine (39) related projects have been included as part of the cumulative background setting.

Table 6-1 provides the location and a brief description for each of the thirty-nine (39) related projects. ***Figure 6-1*** graphically illustrates the location of the related projects. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the development totals and resultant trip generation for the 39 related projects. As shown in *Table 6-2*, the related projects are expected to generate a combined total of 78,780 daily trips on a "typical" weekday, with 6,960 trips (4,190 inbound and 2,770 outbound) forecast during the AM peak hour and 9,096 trips (4,389 inbound and 4,707 outbound) during the PM peak hour.

6.3 Year 2013 Traffic Volumes

The AM and PM peak hour traffic volumes associated with the 39 related projects in the Year 2013 are presented in ***Figures 6-2*** and ***6-3***, respectively. ***Figures 6-4*** and ***6-5*** present AM and PM peak hour existing plus ambient growth to the Year 2013 traffic volumes at the key study intersections, respectively. ***Figures 6-6*** and ***6-7*** present AM and PM peak hour existing plus ambient growth to the Year 2013 plus project traffic volumes at the key study intersections, respectively.

Figures 6-8 and ***6-9*** present future AM and PM peak hour background plus project traffic volumes (cumulative) at the key study intersections for the future horizon year (Year 2013). Please note that the background traffic volumes represent the accumulation of existing traffic, ambient growth traffic and related projects traffic.

TABLE 6-1
LOCATION AND DESCRIPTION OF RELATED PROJECTS

Cumulative Project Location/Address		Land Use	Size
***County of Los Angeles Development*[8]**			
1.	Parcel 9 – Woodfin Hotel	Hotel Wetland Park	288 Rooms 1.46 Acres
2.	Parcels 10/FF – Neptune Marina	Apartment Boat Dock Slip (Less Existing Apartment) (Less Existing Boat Dock)	526 DU 161 Slips (136 DU) (184 Slips)
3.	Parcels 100/101 – Del Rey Shores	Apartment (Less Existing Apartment)	544 DU (202 DU)
4.	Parcels 95/LLS – Marina West Shopping Center	Retail Restaurant Office (Less Existing Office) (Less Existing Restaurant)	15,612 SF 368 Seats 7,888 SF (9,180 SF) (165 Seats)
5.	Parcel OT – Oceana Retirement Facility	Congregate Care Facility Retail (Less Existing Parking Lot)	114 DU 3,500 SF (186 Spaces)
6.	Parcels 33/NR – The Waterfront	Apartment Retail Restaurant (Less Existing Restaurant)	292 DU 24,300 SF 266 Seats (1,067 Seats)
7.	Parcel 21 – Holiday Harbor Courts	Mixed-Use Boat Dock Slip	29,348 SF[9] 92 Slips
8.	Parcel 44 – Pier 44	Commercial Boat Dock Slips Dry Stack Spaces	91,090 SF 143 Slips 234 Spaces
9.	Parcels 55/56/W – Fisherman's Village	Hotel Restaurant Retail Office Boat Dock Slip (Less Existing Retail/Commercial) (Less Existing Restaurant) (Less Existing Boat Dock Slip)	132 Rooms 1,230 Seats 24,250 Retail 5,200 SF 30 Slips (12,984 SF) (16,149 SF) (17 Slips)

8 Source: Los Angeles County Department of Regional Planning.

9 The 29,348 SF is comprised of a 10,000 SF health club, 2,916 SF of retail uses, 11,432 SF of marine commercial uses and a 5,000 SF yacht club.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF RELATED PROJECTS

Cumulative Project Location/Address		Land Use	Size
10.	Jamaica Bay Inn	Hotel Expansion	69 Rooms
11.	Parcel 1 – Fuel Dock	Fuel Dock Accessory Building	1,400 SF
12.	Parcel 15 – Esprit II	Apartment (Less Existing Apartment)	585 DU (288 DU)
City of Los Angeles Development[10]			
13.	841 California Avenue	Charter High School	420 Students
14.	1430 Lincoln Boulevard	Retail Apartment	197,000 SF 280 DU
15.	2005 Lincoln Boulevard	Gas Station w/Convenient Store	6 Pumps
16.	2100 Abbot Kinney Boulevard	Office	15,180 SF
17.	Millennium-Playa Del Mar Residential Project 5550 Grosvenor Boulevard	Apartment	216 DU
18.	4004 Lincoln Boulevard Mixed-Use Project	Condominium Retail	98 DU 6,020 SF
19.	4350 Lincoln Boulevard – Villa Marina Project	Condominium Retail (Less Existing Retail)	244 DU 9,000 SF (21,038 SF)
20.	N/W Corner Princeton Drive/ Carter Avenue	Apartment (Less Existing Light Manufacturing) (Less Existing Office) (Less Existing Auto Service/Repair)	298 DU (24,000 SF) (21,600 SF) (40,000 SF)
21.	4155 Redwood Avenue Condominium Project	Condominium	118 DU
22.	4055, 4063, 4071 Redwood Avenue Condominium Project	Condominium	140 DU
23.	4050 Glencoe Avenue Condominium Project	Condominium	77 DU
24.	4080 Glencoe Avenue Apartment Project	Apartment	64 DU
25.	4115 Glencoe Ave and 4133 Redwood Ave Del Rey Lofts	Condominium Apartment	49 DU 52 DU

10 Source: City of Los Angeles Planning Department.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF RELATED PROJECTS

Cumulative Project Location/Address		Land Use	Size
26.	4131 Glencoe Avenue Condominium Project	Condominium	117 DU
27.	12700 Braddock Drive	Warehouse Office (Less Existing Laundry Building)	134,557 SF 1,357 SF (58,323 SF)
28.	Trolley Place and Vista Del Mar	Condominium	46 DU
29.	220 Culver Boulevard Mixed-Use Project	Apartment Retail (Less Existing Restaurant)	63 DU 6,000 SF (4,000 SF)
30.	6819 Pacific Avenue Mixed-Use Project	Apartment Retail Restaurant	29 DU 1,000 SF 3,000 SF
31.	138 Culver Boulevard Mixed-Use Project	Condominium Retail	63 DU 10,051 SF
32.	The Village at Playa Vista Project South of the intersection of Jefferson Boulevard/Westlawn Avenue	Office Apartment Retail Community Serving Uses	175,000 SF 2,600 DU 150,000 SF 40,000 SF
33.	Playa Vista Phase I Jefferson Blvd between Lincoln Blvd and Centinela Avenue[11]	Apartments/Condominiums Office Retail Production/Staging Support Community Uses	3,246 DU 2,142,050 SF 35,000 SF 1,129,900 SF 65,000 SF
34.	Lincoln Place Project - terminus of California Avenue north of Frederick Street	Apartments	99 DU
<u>City of Culver City Development</u>[12]			
35.	11957 Washington Boulevard Office Project	Office	73,569 SF
36.	12803 Washington Blvd – Baldwin Site	Office Retail	24,872 SF 12,436 SF
37.	13340 Washington Blvd – Live Work Units	Condominium	41 DU
38.	13365 Washington Blvd Mixed-Use Project	Retail Condominium	4,183 SF 19 DU
39.	12402 Washington Place	Office Retail	30,400 SF 9,300 SF

11 Based on discussions with Playa Vista staff 3,100 dwelling units, 500,000 SF of office space, 25,000 SF of retail space and 65,000 SF of community uses are currently built and occupied.

12 Source: City of Culver City Planning Department.

TABLE 6-2
RELATED PROJECTS TRAFFIC GENERATION FORECAST

Cumulative Project Description		Daily 2-Way	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
County of Los Angeles Development								
1.	Parcel 9 – Woodfin Hotel[13]	1,408	64	53	117	46	56	102
2.	Parcels 10/FF – Neptune Marina[13]	1,343	24	111	135	86	39	125
3.	Parcels 100/101 – Del Rey Shores[14]	1,354	21	99	120	75	36	111
4.	Parcels 95/LLS – Marina West Shopping Center	1,108	19	21	40	61	51	112
5.	Parcel OT – Oceana Retirement Facility[13]	387	5	5	10	20	21	41
6.	Parcels 33/NR – The Waterfront	938	36	127	163	-3	26	23
7.	Parcel 21 – Holiday Harbor Courts[13]	-109	4	-2	2	-10	-1	-11
8.	Parcel 44 – Pier 44	3,309	14	16	30	105	147	252
9.	Parcels 55/56/W – Fisherman's Village[15]	2,375	41	57	98	114	95	209
10.	Jamaica Bay Inn[16]	375	15	13	28	11	13	24
11.	Parcel 1 – Fuel Dock	62	2	2	4	2	2	4
12.	Parcel 15 – Esprit II	1,040	18	85	103	67	30	97
County of Los Angeles Cumulative Projects (No. 1-12) Trip Generation Potential Subtotal		***13,590***	***263***	***587***	***850***	***574***	***515***	***1,089***

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13 Source: Traffic Analysis for *Parcels OT and 21*, prepared by Crain & Associates (February 2010).

14 Source: Traffic Impact Study for the *Del Rey Shores Project*, prepared by Crain & Associates (August 2005).

15 Source: Traffic Impact Study for the Neptune Marina Apartments and Anchorage/Woodfin Suites Hotel and Timeshare Resort Project, Administrative Draft EIR, prepared by Crain & Associates (July 2007).

16 Source: Traffic Impact Study for the *Jamaica Bay Inn Project*, prepared by LLG Pasadena (revised January 17, 2007).

TABLE 6-2 (CONTINUED)
RELATED PROJECTS TRAFFIC GENERATION FORECAST[17]

Cumulative Project Description		Daily 2-Way	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
City of Los Angeles Development								
13.	841 California Avenue[18]	718	119	53	172	28	31	59
14.	1430 Lincoln Boulevard[19]	11,359	168	205	373	446	409	855
15.	2005 Lincoln Boulevard[18]	977	30	30	60	11	11	22
16.	2100 Abbot Kinney Boulevard[18]	167	21	3	24	7	36	43
17.	Millennium Playa Del Mar Residential Project	1,078	8	80	88	78	37	115
18.	4004 Lincoln Boulevard Mixed-Use Project	841	11	39	50	59	40	99
19.	Villa Marina Project	903	11	84	95	73	10	83
20.	Princeton Drive/Carter Avenue Apartments	860	-70	103	33	47	-79	-32
21.	4155 Redwood Ave Condominium Project	691	9	43	52	41	20	61
22.	4055-4071 Redwood Ave Condominium Project	820	11	51	62	49	24	73
23.	4050 Glencoe Avenue Condominium Project	451	6	28	34	27	13	40
24.	4080 Glencoe Avenue Apartment Project	430	7	26	33	26	14	40
25.	Del Rey Lofts	636	9	40	49	38	19	57
26.	4131 Glencoe Avenue Condominium Project	686	9	42	51	41	20	61
27.	12700 Braddock Drive	493	22	2	24	36	136	172
28.	Trolley Place/Vista Del Mar Condominiums	270	3	17	20	21	11	32
29.	220 Culver Boulevard Mixed-Use Project	180	13	7	20	29	31	60
30.	6819 Pacific Avenue Mixed-Use Project	620	22	29	51	37	25	62
31.	138 Culver Boulevard Mixed-Use Project	712	10	28	38	46	36	82
32.	The Village at Playa Vista Project	24,220	577	1,049	1,626	1,275	1,027	2,302
33.	Playa Vista Phase I	14,475	2,724	126	2,850	1,261	2,083	3,344
34.	Lincoln Place Project[18]	665	10	40	50	45	24	69
City of Los Angeles Cumulative Projects (No. 13-34) Trip Generation Potential Subtotal		***62,252***	***3,730***	***2,125***	***5,855***	***3,721***	***3,978***	***7,699***

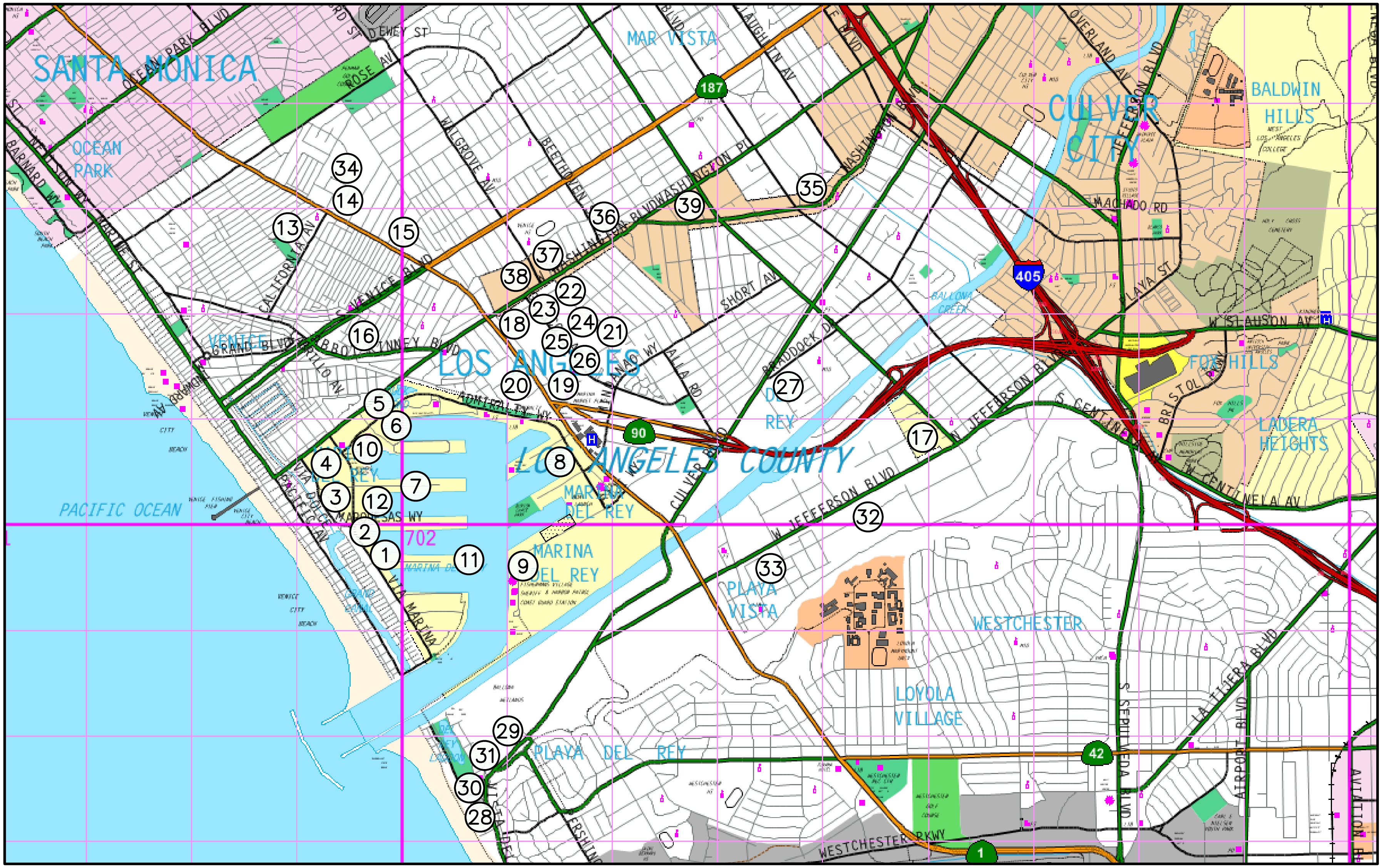
17 Unless otherwise noted; Source: Traffic Impact Study for the *Millennium-Playa Del Mar Residential Project*, prepared by Raju Associates (December 2009).
18 Source: Traffic Impact Assessment for the *Lincoln Place Project*, prepared by Gibson Transportation Consulting, Inc. (June 2009).
19 Source: *Trip Generation*, 8th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2008).

TABLE 6-2 (CONTINUED)

RELATED PROJECTS TRAFFIC GENERATION FORECAST[20]

Cumulative Project Description		Daily 2-Way	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
City of Culver City Development								
35.	11957 Washington Boulevard Office Project	810	100	14	114	19	91	110
36.	12803 Washington Blvd – Baldwin Site	808	41	10	51	29	54	83
37.	13340 Washington Blvd – Live Work Units	240	3	15	18	14	7	21
38.	13365 Washington Blvd Mixed-Use Project	333	5	9	14	13	11	24
39.	12402 Washington Place	747	48	10	58	19	51	70
City of Culver City Cumulative Projects (No. 35-39) Trip Generation Potential Subtotal		***2,938***	***197***	***58***	***255***	***94***	***214***	***308***
Cumulative Projects (No. 1-39) Total Trip Generation Potential		**78,780**	**4,190**	**2,770**	**6,960**	**4,389**	**4,707**	**9,096**

20 Unless otherwise noted; Source: Traffic Impact Study for the *Millennium-Playa Del Mar Residential Project*, prepared by Raju Associates (December 2009).



SOURCE: THOMAS BROS.

KEY

(#) = RELATED PROJECTS

= PROJECT SITE

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 6–1

RELATED PROJECT LOCATION MAP

DRY STACK BOAT STORAGE, MARINA DEL REY

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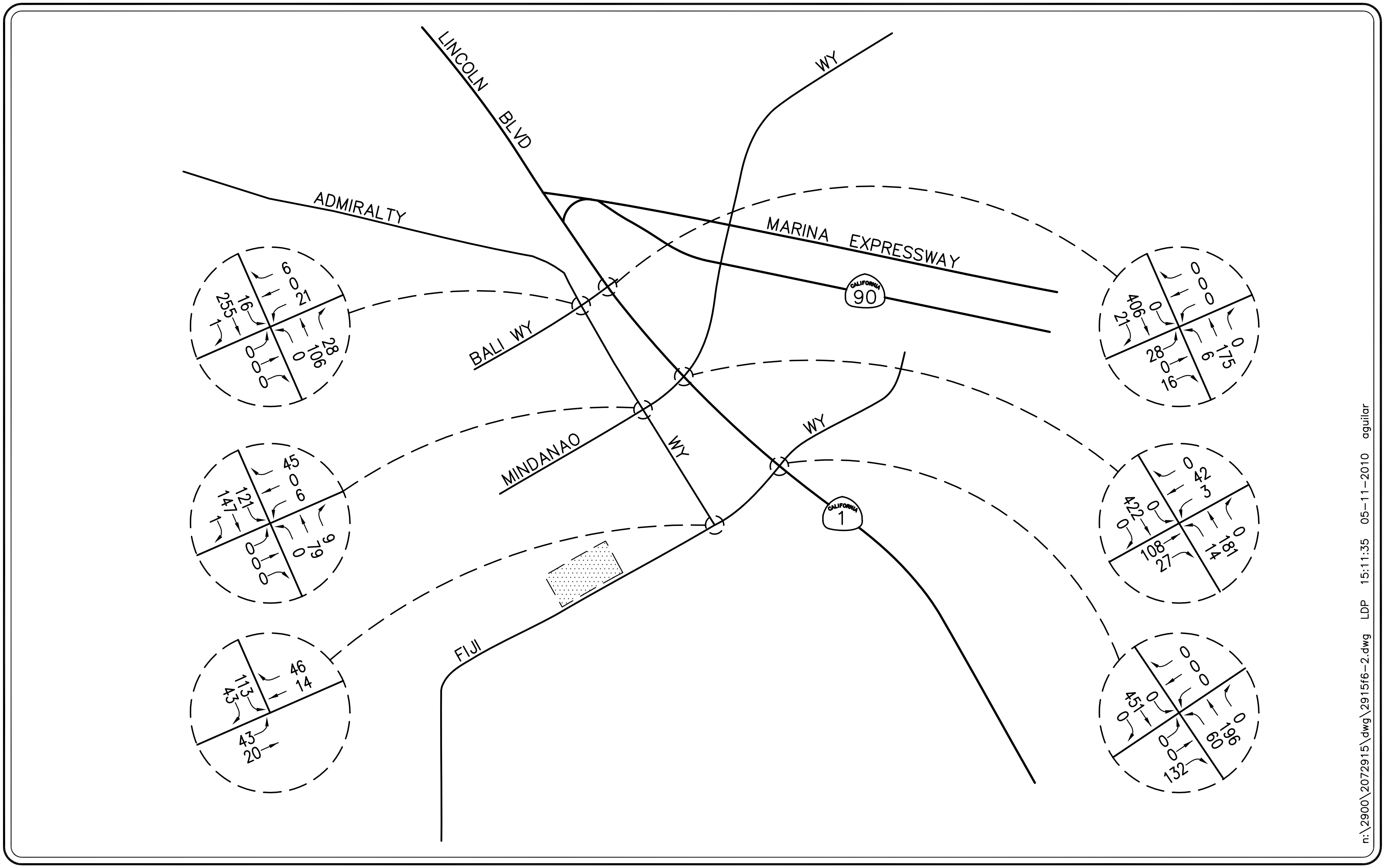


KEY
= PROJECT SITE

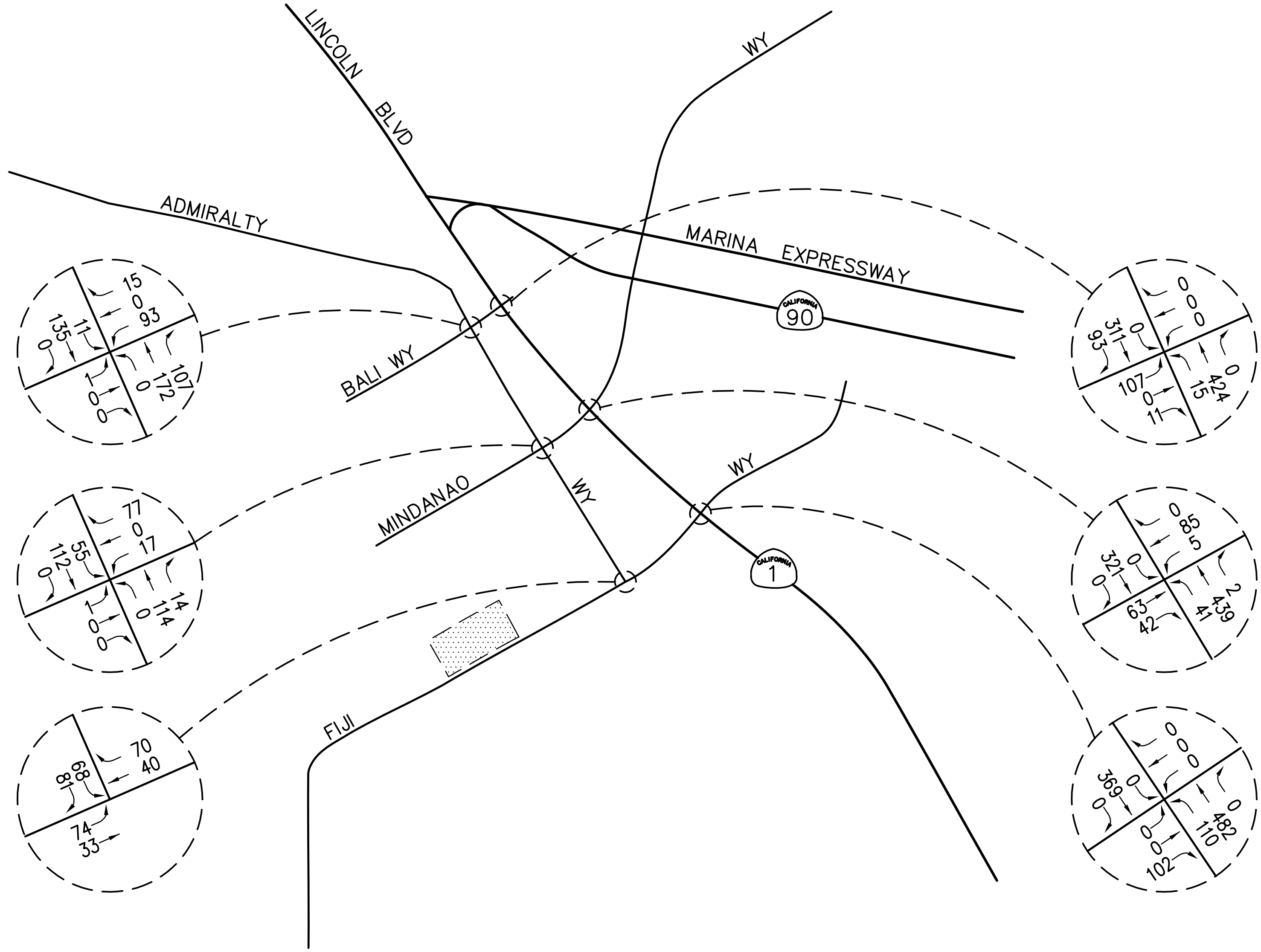
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 6-2

RELATED PROJECTS AM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

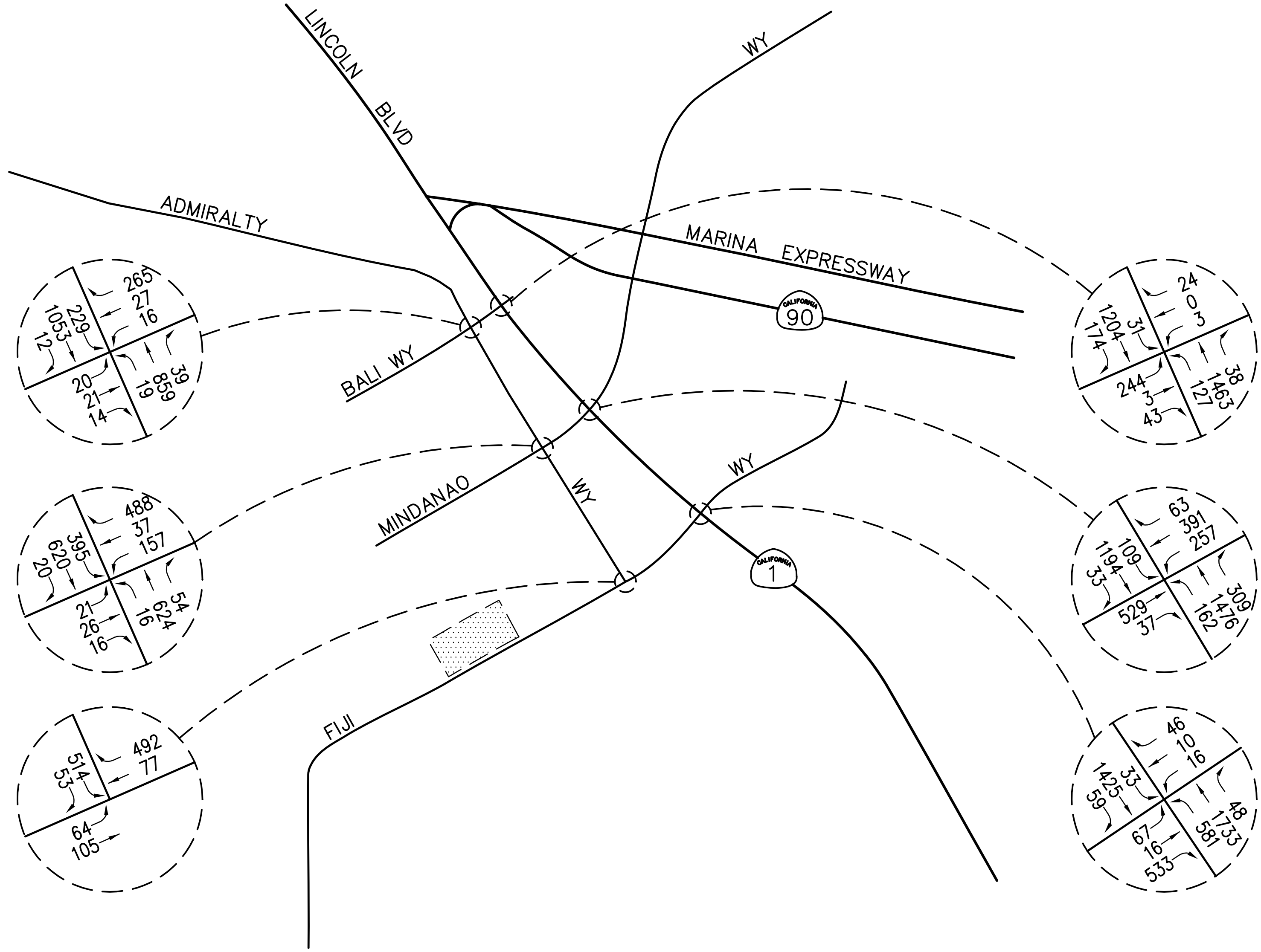
KEY

= PROJECT SITE

FIGURE 6-3

RELATED PROJECTS PM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

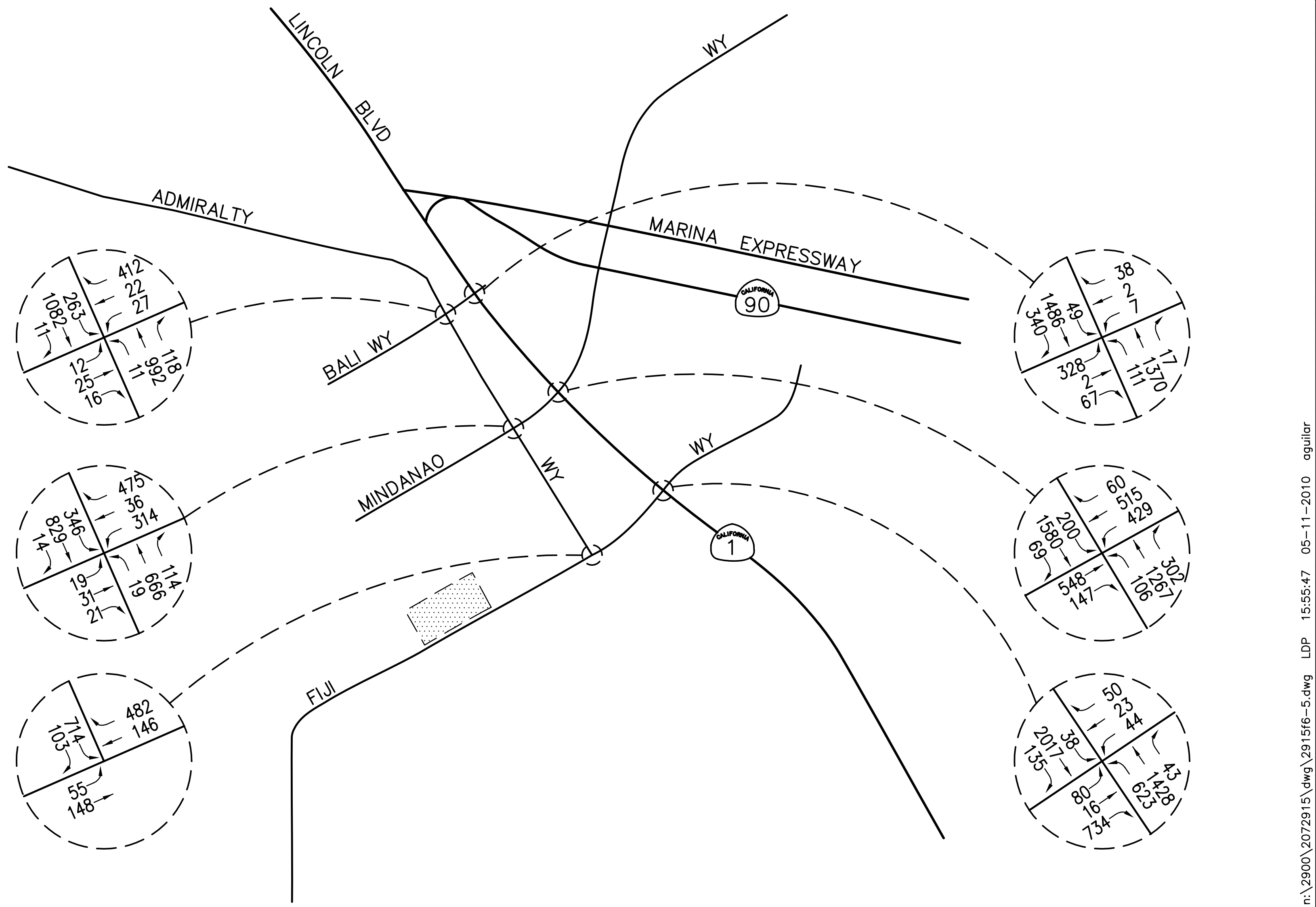
KEY

= PROJECT SITE

FIGURE 6-4

EXISTING PLUS AMBIENT GROWTH AM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

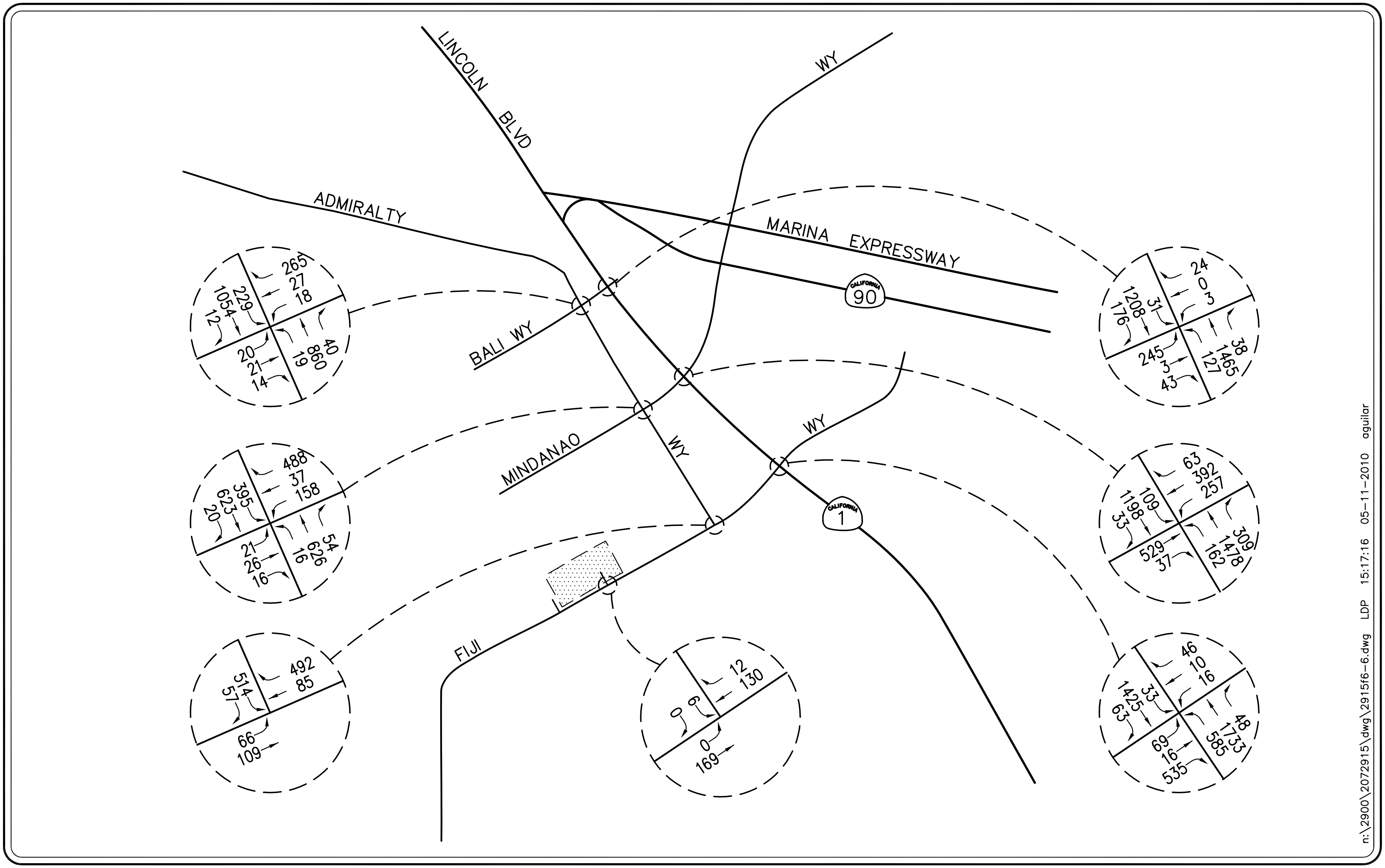
KEY

= PROJECT SITE

FIGURE 6-5

EXISTING PLUS AMBIENT GROWTH PM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

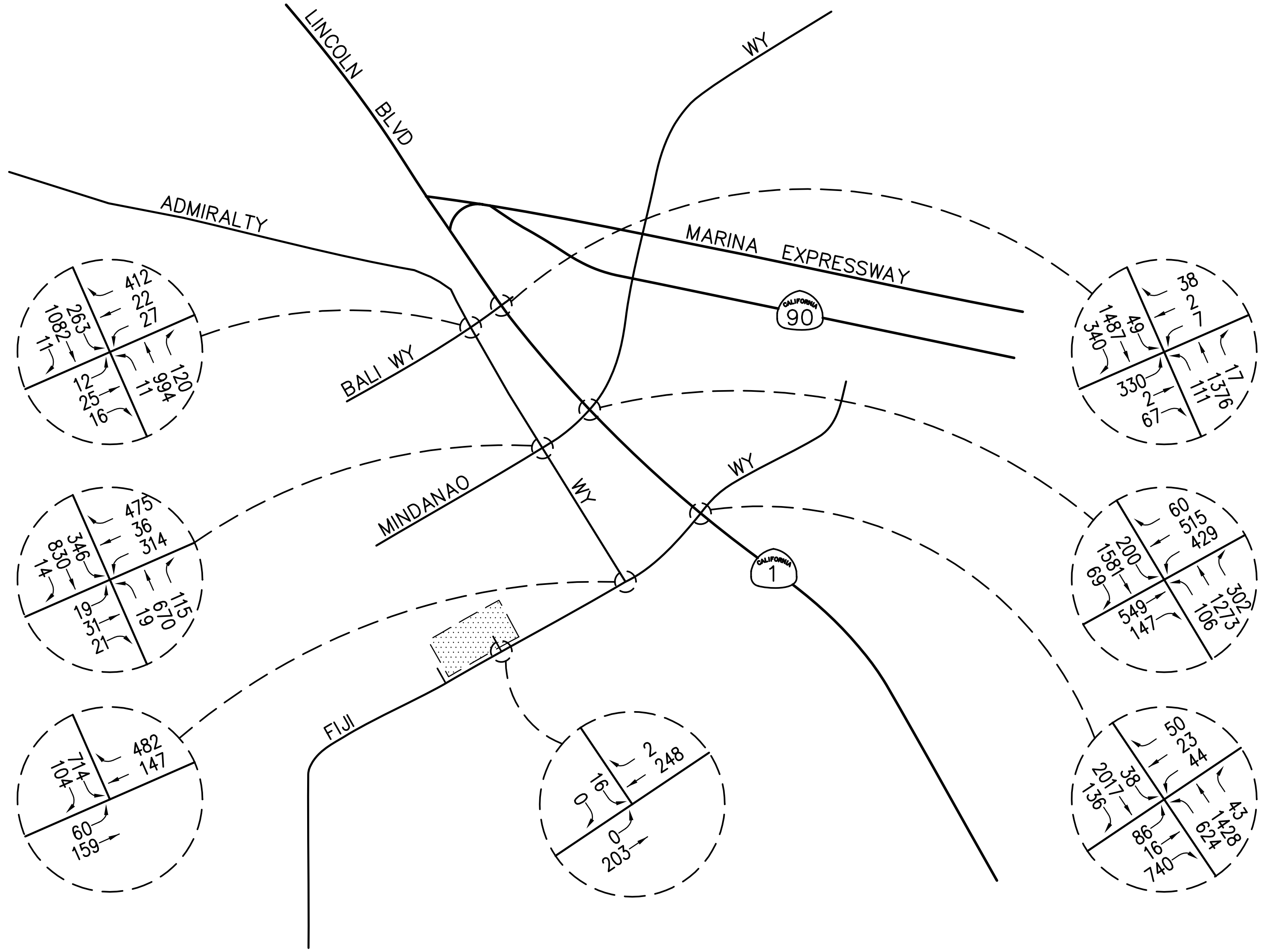
KEY

= PROJECT SITE

FIGURE 6-6

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

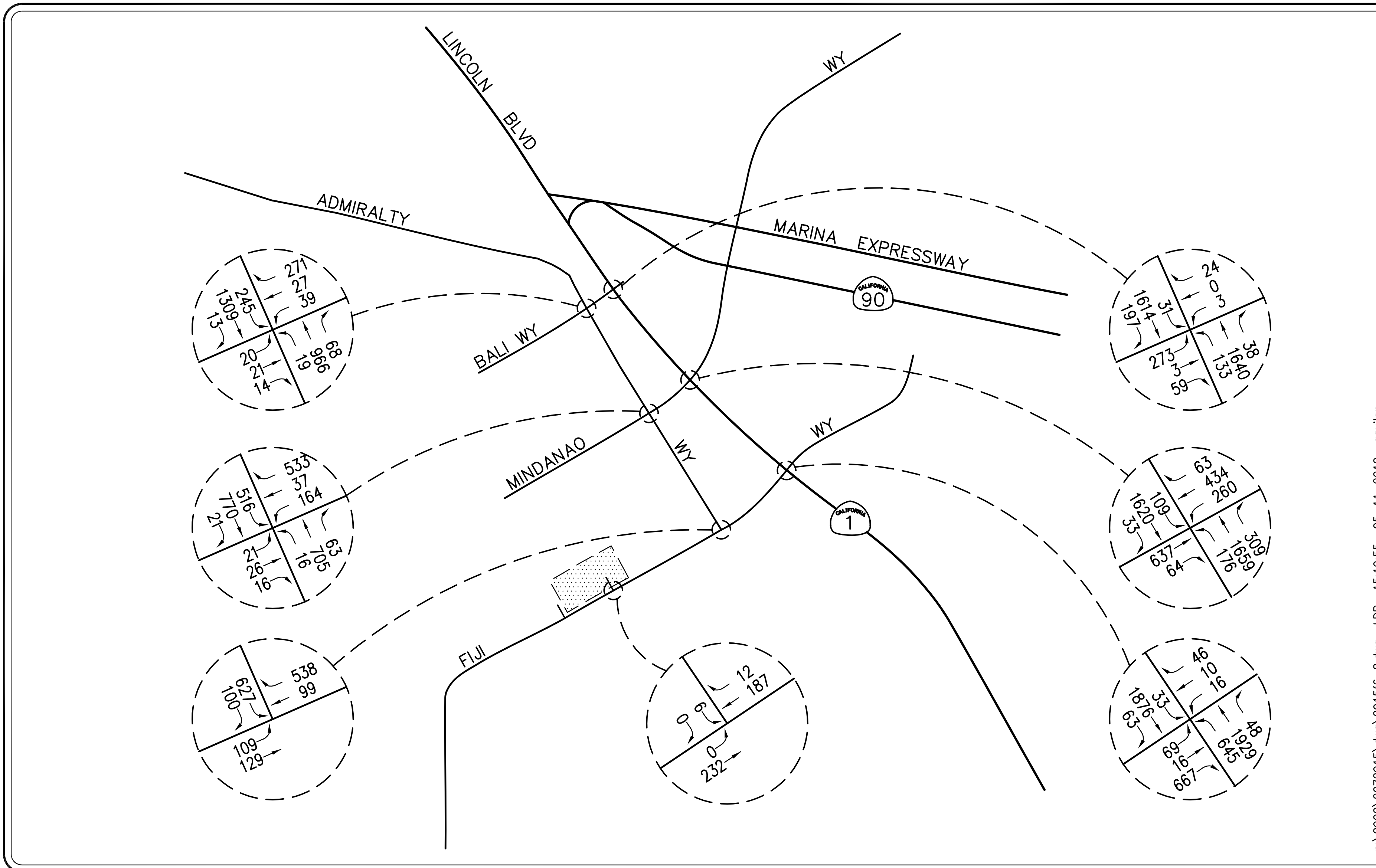
KEY

= PROJECT SITE

FIGURE 6–7

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

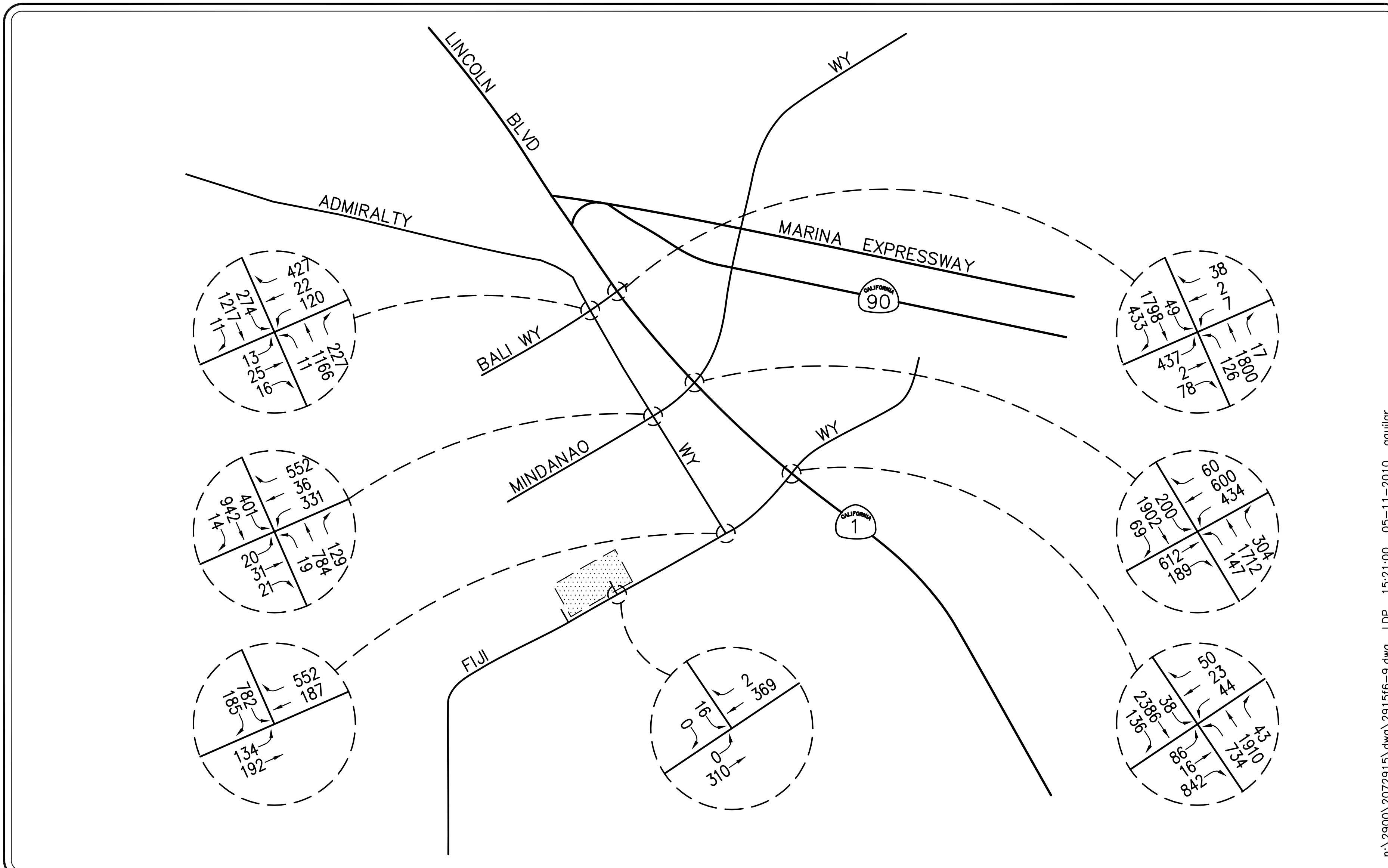
KEY

= PROJECT SITE

FIGURE 6-8

YEAR 2013 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

FIGURE 6-9

YEAR 2013 CUMULATIVE PM PEAK HOUR TRAFFIC VOLUMES

DRY STACK BOAT STORAGE, MARINA DEL REY

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The relative impact of the proposed Project during the AM peak hour and PM peak hour was evaluated based on analysis of future operating conditions at the six (6) key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the following traffic impact criteria.

7.1 Impact Criteria and thresholds

7.1.1 *County of Los Angeles Criteria*

For those study intersections within the jurisdiction of the County of Los Angeles (i.e. all six key study intersections), a significant transportation impact is determined based on the sliding scale criteria presented in ***Table 7-1***. As indicated in *Table 7-1*, the project-related increase in ICU value that defines a significant impact varies with LOS. At LOS C or LOS D, the threshold of significance is an increase of 0.04 or greater or 0.02 or greater, respectively, in the ICU value. This is reduced to 0.01 or greater under LOS E and F.

7.1.2 *City of Los Angeles Criteria*

For those study intersections also within the jurisdiction of the City of Los Angeles (i.e. Fiji Way/Lincoln Boulevard, Mindanao Way/ Lincoln Boulevard and Bali Way/ Lincoln Boulevard), a significant transportation impact is also determined based on the sliding scale criteria presented in *Table 7-1*.

7.2 Traffic Impact Analysis Scenarios

7.2.1 *Peak Traffic Hour Baseline*

While the project and its surrounding coastal setting have a significant recreational orientation, key arterial roadways serving the site area are subject to commuter period traffic flow patterns that are the basis of peak traffic conditions. Thus, this study has focused to the weekday AM and PM commuter peak hours, and utilized traffic count data collected during those periods as the basis to assess the project's impacts in a cumulative setting. Accordingly, a "weekend" evaluation was not required through the traffic study scoping process with LACDPW Traffic and Lighting Division staff (see *Appendix A* for a copy of the approved Traffic Study Scope of Work).

In general, prior traffic counting and related studies of coastal settings in southern California have revealed that while weekend or other hours may have traffic volumes and service level conditions approaching those experienced during the AM and PM commuter peak hours, with very limited exceptions, peak conditions actually occur during those commuter-influenced hours. A similar conclusion was drawn by the Marina Del Rey Land Use Plan, Section C.11 – Circulation, page 11-6 (footnote four), as follows:

Table 7-1
County of Los Angeles and City of Los Angeles
Intersection Impact Threshold Criteria

Pre-Project		Project-Related V/C Increase
Level of Service	**V/C**	
C[21]	0.701 – 0.800	0.04 or more
D	0.801 – 0.900	0.02 or more
E, F	0.901 or more	0.01 or more

21 It should be noted that the County has adopted the following interpretation for pre-project conditions that are less than 0.71. In that situation, County staff has interpreted the guidelines to mean that an increase that results in a with-project condition of 0.75 or more is considered significant. The interpretation is based on the following scenario, which is addressed by the guidelines: 0.71 (pre-project) + 0.04 (project increment) = 0.75 and is a significant impact.

- “The heaviest congestion is during the 4th of July fireworks show and during the Christmas boat parade. Outside of these two events, the weekday PM peak hour has the highest consistent congestion. Summer weekend traffic volumes approach the weekday PM peak hour, but are typically slightly lower in volume.

The above conclusion supports the focus of this study to weekday AM peak hour and PM peak hour operating conditions at key intersections within the project area.

7.2.2 *County of Los Angeles Requirements*

The following scenarios are those for which weekday AM peak hour and PM peak hour volume/capacity calculations have been performed at the six (6) key intersections that are located in the County of Los Angeles:

1. Existing Traffic Conditions;
2. Existing Traffic Conditions Plus Ambient Growth Traffic to the Year 2013;
3. Scenario (2) plus Project Traffic;
4. Scenario (3) with Mitigation (if necessary);
5. Scenario (3) plus Related Projects Traffic; and
6. Scenario (5) with Mitigation, if necessary.

7.2.3 *City of Los Angeles Requirements*

The following scenarios are those for which weekday AM peak hour and PM peak hour volume/capacity calculations have been performed at the three (3) key intersections that are also located in the City of Los Angeles:

1. Existing Traffic Conditions;
2. Year 2013 Future Traffic Conditions;
3. Year 2013 Future Traffic Conditions plus Project Traffic;
4. Scenario (3) with Mitigation, if necessary.

8.0 COUNTY OF LOS ANGELES TRAFFIC ANALYSIS

8.1 Year 2013 Existing Plus Ambient Growth Plus Project Traffic Conditions

Table 8-1 summarizes the peak hour Level of Service results at the six (6) key study intersections for Year 2013 existing plus ambient growth plus project traffic conditions. The first column (1) of ICU/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists Year 2013 plus ambient growth traffic conditions based on existing intersection geometry, but without any traffic generated from the proposed project. The third column (3) presents forecast Year 2013 plus ambient growth traffic conditions with the addition of project traffic. The fourth column (4) shows the increase in ICU value due to the added peak hour project trips and indicates whether the traffic associated with the proposed Project will have a significant impact based on the significant impact criteria defined in this report.

8.1.1 *Existing Traffic Conditions*

As previously presented in *Table 3-3*, all six (6) key study intersections currently operate at LOS C or better during the AM and PM peak hours.

8.1.2 *Existing Plus Ambient Growth to the Year 2013 Traffic Conditions*

An analysis of future (Year 2013) traffic conditions indicates that the addition of ambient traffic growth will not adversely impact any of the six (6) key study intersections. All six (6) key study intersections are forecast to continue to operate at LOS C or better during the AM and PM peak hours with the addition of ambient traffic growth.

8.1.3 *Existing Plus Ambient Growth to the Year 2013 Plus Project Traffic Conditions*

Review of Columns 3 and 4 of *Table 8-1* shows that traffic associated with the proposed Project ***will not*** have a significant impact at any of the six (6) key study intersections, when compared to the significant traffic impact criteria defined in this report. All six (6) key study intersections are forecast to continue to operate at LOS C or better with the addition of project generated traffic in the Year 2013.

8.2 Year 2013 Cumulative Traffic Conditions

Table 8-2 presents a summary of the projected levels of service at the six (6) key study intersections for Year 2013 cumulative traffic conditions (existing traffic plus ambient growth traffic plus related projects traffic plus project traffic). The structure of this table is similar to the capacity analysis summary presented in *Table 8-1*.

TABLE 8-1

YEAR 2013 EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS – COUNTY OF LOS ANGELES METHODOLOGY

Key Intersections		Time Period	(1) Existing Traffic Conditions		(2) Year 2013 Plus Ambient Growth Traffic Conditions		(3) Year 2013 Plus Ambient Growth Plus Project Traffic Conditions		(4) Project Significant Impact		(5) With Improvements	
			ICU	LOS	ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
1.	Admiralty Way at	AM	0.262	A	0.266	A	0.272	A	0.006	No	--	--
	Fiji Way	PM	0.366	A	0.373	A	0.378	A	0.005	No	--	--
2.	Admiralty Way at	AM	0.536	A	0.546	A	0.547	A	0.001	No	--	--
	Mindanao Way	PM	0.591	A	0.602	B	0.603	B	0.001	No	--	--
3.	Admiralty Way at	AM	0.444	A	0.451	A	0.452	A	0.001	No	--	--
	Bali Way	PM	0.594	A	0.605	B	0.606	B	0.001	No	--	--
4.	Lincoln Boulevard at	AM	0.587	A	0.598	A	0.601	B	0.003	No	--	--
	Fiji Way	PM	0.774	C	0.787	C	0.793	C	0.006	No	--	--
5.	Lincoln Boulevard at	AM	0.631	B	0.642	B	0.642	B	0.000	No	--	--
	Mindanao Way	PM	0.762	C	0.776	C	0.777	C	0.001	No	--	--
6.	Lincoln Boulevard at	AM	0.527	A	0.536	A	0.537	A	0.001	No	--	--
	Bali Way	PM	0.672	B	0.683	B	0.685	B	0.002	No	--	--

TABLE 8-2

YEAR 2013 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – COUNTY OF LOS ANGELES METHODOLOGY

Key Intersections		Time Period	(1) Existing Traffic Conditions		(2) Year 2013 Plus Ambient Growth Traffic Conditions		(3) Year 2013 Plus Ambient Growth Plus Cumulative Plus Project Traffic Conditions		(4) Project Significant Impact		(5) With Improvements	
			ICU	LOS	ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
1.	Admiralty Way at	AM	0.262	A	0.266	A	0.348	A	0.082	No	--	--
	Fiji Way	PM	0.366	A	0.373	A	0.473	A	0.100	No	--	--
2.	Admiralty Way at	AM	0.536	A	0.546	A	0.652	B	0.106	No	--	--
	Mindanao Way	PM	0.591	A	0.602	B	0.684	B	0.082	No	--	--
3.	Admiralty Way at	AM	0.444	A	0.451	A	0.517	A	0.066	No	--	--
	Bali Way	PM	0.594	A	0.605	B	0.702	C	0.097	No	--	--
4.	Lincoln Boulevard at	AM	0.587	A	0.598	A	0.716	C	**0.118**	**Yes**	NF[22]	--
	Fiji Way	PM	0.774	C	0.787	C	0.907	E	**0.120**	**Yes**	NF	--
5.	Lincoln Boulevard at	AM	0.631	B	0.642	B	0.763	C	**0.121**	**Yes**	NF[21]	--
	Mindanao Way	PM	0.762	C	0.776	C	0.904	E	**0.128**	**Yes**	NF	--
6.	Lincoln Boulevard at	AM	0.527	A	0.536	A	0.648	B	0.112	No	NF[21]	--
	Bali Way	PM	0.672	B	0.683	B	0.846	D	**0.163**	**Yes**	NF	--

[22] NF = None Feasible. Intersection improvements at this key intersection are not feasible due to physical and right-of-way restrictions that prohibit any widening and/or restriping.

8.2.1 *Year 2013 Cumulative Traffic Conditions*

Review of Columns 3 and 4 of *Table 8-2* shows that three of the six key study intersections are cumulatively impacted by the proposed Project. The locations cumulatively impacted by the proposed Project and the time period in which the impact occurs are as follows:

Key Intersection		Cumulative
4.	Lincoln Boulevard at Fiji Way	AM/PM
5.	Lincoln Boulevard at Mindanao Way	AM/PM
6.	Lincoln Boulevard at Bali Way	PM

As shown in Column 5 of *Table 8-2*, the project's cumulative traffic impacts at Lincoln Boulevard/Fiji Way, Lincoln Boulevard/Mindanao Way and Lincoln Boulevard/Bali Way will remain unmitigated as capacity-enhancing improvements at these key intersections are not feasible due to physical and right-of-way restrictions that prohibit any widening and/or restriping. The Marina Del Rey Local Implementation Program (LIP) list of Category 3 improvements includes several regional transportation circulation improvements, one of which is the proposed extension of SR-90 (the Marina Expressway) to connect to Admiralty Way. According to the LACDPW Traffic and Lighting Division, the three intersections along Lincoln Boulevard listed above will be subject to cumulative impacts until the SR-90 extension or another project of equal effectiveness is built. At this point, the SR-90 extension is not a programmed project and thus it is not included in this cumulative analysis. The remaining three key study intersections are forecast to continue to operate at LOS C or better in the Year 2013 during the AM and PM peak hours with the addition of ambient growth traffic, cumulative traffic and project traffic.

9.0 CITY OF LOS ANGELES TRAFFIC ANALYSIS

Given that the intersections of Lincoln Boulevard/Fiji Way, Lincoln Boulevard/Mindanao Way and Lincoln Boulevard/Bali Way are also under the jurisdiction of the City of Los Angeles, this section of the report summarizes the results of the level of service analysis using the CMA methodology for signalized intersections per LADOT traffic study guidelines.

9.1 Year 2013 Plus Project Traffic Conditions

Table 9-1 summarizes the peak hour Level of Service results at the three (3) key study intersections also under the jurisdiction of the City of Los Angeles for Year 2013 cumulative traffic conditions (existing traffic plus ambient growth traffic plus related projects traffic plus project traffic). The first column (1) of CMA/LOS values in *Table 9-1* presents a summary of existing AM and PM peak hour traffic conditions. The second column (2) lists projected background traffic conditions based on existing intersection geometry, but without any traffic generated from the proposed project. The third column (3) presents forecast Year 2013 near-term traffic conditions with the addition of project traffic. The fourth column (4) shows the increase in CMA value due to the added peak hour project trips and indicates whether the traffic associated with the project will have a significant impact based on the significant impact criteria defined in this report.

9.1.1 *Existing Traffic Conditions*

Review of Column 1 shows that all three (3) key study intersections currently operate at LOS C or better during the AM and PM peak hours.

9.1.2 *Year 2013 Background Traffic Conditions*

An analysis of future (Year 2013) background traffic conditions indicates that the addition of ambient traffic growth will adversely impact two of the three key study intersections along Lincoln Boulevard. The intersections of Lincoln Boulevard at Fiji Way and Lincoln Boulevard at Mindanao Way are forecast to operate at LOS E during the PM peak hour. The remaining key study intersection is forecast to operate at LOS C or better during the AM and PM peak hours with the addition of ambient traffic growth and related projects traffic.

9.1.3 *Year 2013 With Project Traffic Conditions*

Review of Columns 3 and 4 of *Table 9-1* shows that traffic associated with the proposed Project ***will not*** have a significant impact at any of the three (3) key study intersections, when compared to the significant traffic impact criteria identified in this report. Although the intersections of Lincoln Boulevard at Fiji Way and Lincoln Boulevard at Mindanao Way are forecast to operate at LOS E during the PM peak hour with the addition of project traffic, the proposed project is expected to add less than 0.010 to the ICU value. The remaining key study intersection is forecast to continue to operate at LOS C or better during the AM and PM peak hours with the addition of project generated traffic in the Year 2013.

TABLE 9-1

YEAR 2013 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CITY OF LOS ANGELES METHODOLOGY

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2013 Background Traffic Conditions		(3) Year 2013 Plus Project Traffic Conditions		(4) Project Significant Impact		(5) With Improvements	
		CMA	LOS	CMA	LOS	CMA	LOS	CMA Increase	Yes/No	CMA	LOS
4. Lincoln Boulevard at Fiji Way	AM	0.558	A	0.698	B	0.702	C	0.004	No	--	--
	PM	0.767	C	0.911	E	0.916	E	0.005	No	--	--
5. Lincoln Boulevard at Mindanao Way	AM	0.632	B	0.786	C	0.787	C	0.001	No	--	--
	PM	0.785	C	0.949	E	0.949	E	0.000	No	--	--
6. Lincoln Boulevard at Bali Way	AM	0.461	A	0.597	A	0.599	A	0.002	No	--	--
	PM	0.612	B	0.796	C	0.798	C	0.002	No	--	--

10.0 AREA-WIDE TRAFFIC IMPROVEMENTS

For those intersections where future traffic volumes are expected to result in poor operating conditions, this report identifies planned/recommended roadway improvements that change the intersection geometry to increase capacity. These capacity improvements involve roadway re-striping to reconfigure (add lanes) to specific approaches of a key intersection. The identified improvements are expected to: mitigate the impact of future non-project (ambient growth and cumulative projects) traffic, and/or improve Levels of Service to an acceptable range.

10.1 Recommended Improvements

10.1.1 *Existing Plus Ambient Plus Project Traffic Conditions*

The results of the intersection capacity analysis presented previously in *Table 8-1* shows that the proposed Dry Stack Boat Storage Project will not significantly impact any of the six (6) key study intersections under the "Existing Plus Ambient Plus Project" traffic scenario. Given that there are no significant project impacts, no improvements are required under this traffic scenario.

10.1.2 *Year 2013 Cumulative Traffic Conditions*

The results of the intersection capacity analysis presented previously in *Table 8-2* shows that the proposed Dry Stack Boat Storage Project will cumulatively impact three of the six key study intersections under the "Year 2013 Cumulative" traffic scenario. The following improvements listed below have been identified to mitigate the near-term (Year 2013) cumulative traffic impacts at the intersections of Lincoln Boulevard/Fiji Way, Lincoln Boulevard/Mindanao Way and Lincoln Boulevard/Bali Way.

- Lincoln Boulevard at Fiji Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable.

- Lincoln Boulevard at Mindanao Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable.

- Lincoln Boulevard at Bali Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable.

As stated previously in Section 8.2.1, the Marina Del Rey Local Implementation Program (LIP) list of Category 3 improvements includes several regional transportation circulation improvements, one of which is the proposed extension of SR-90 (the Marina Expressway) to connect to Admiralty Way. According to the LACDPW Traffic and Lighting Division, the three intersections along Lincoln Boulevard listed above will be subject to cumulative impacts until the SR-90 extension or another project of equal effectiveness is built. At this point, the SR-90 extension is not a programmed project and thus it is not included in this cumulative analysis.

11.0 MARINA DEL REY TRANSPORTATION FEE

The specific transportation and circulation improvements identified in the Marina del Rey Transportation Improvement Program are designed to fully mitigate the traffic generation of the allowable development within Marina del Rey. It should be noted that the proposed Project will be responsible for payment of transportation fees as outlined in the Transportation Improvement Program of the Marina del Rey LUP. The fees collected by the County will be used to implement specific roadway improvement measures in response to the forecast future operating conditions and are intended to fund on a fair-share basis the Category 1 (local Marina) and Category 3 (regional) roadway improvements. A project's transportation fee (i.e., the fair-share contribution toward transportation improvements) is based on the amount of PM peak hour trips generated by the project. Currently, the transportation fee within Marina del Rey is $5,690.00 per PM peak hour trip. With a total of 18 trips generated in the PM peak hour, the Dry Stack Boat Storage Project has a transportation fee of $102,420.00, based on the County's current fee schedule. With the payment of the project's fees, the project will mitigate its proportionate share of any potential cumulative impacts.

11.1 Project-Related Fair Share Contribution

Table 11-1 presents the AM peak hour and PM peak hour percentage of net traffic impact at the study intersections cumulatively impacted by the proposed Project for Year 2013 traffic conditions. These fair share calculations are based on the recommended methodology contained in the *Los Angeles County Traffic Impact Analysis Report Guidelines (January 1, 1997)* and are provided for informational purposes only.

The first column (1) presents project-related traffic volumes at the impacted intersection, while the second column (2) identifies the total added traffic at each intersection generated by related projects. The third column (3) represents the total new traffic, which is the summation of project traffic and related projects traffic. The fourth column (4) represents that percentage of total new intersection peak hour traffic that is Project-related traffic.

Review of *Table 11-1* shows that the proposed Project's fair-share percentage contribution ranges between 0.87% and 1.41%.

TABLE 11-1
YEAR 2013 PROJECT FAIR SHARE CONTRIBUTION

Key Intersections		Impacted Time Period	(1) Project Traffic	(2) Related Projects Traffic	(3) Total New Traffic	(4) Project Percentage Share
4.	Lincoln Boulevard at Fiji Way	AM PM	12 14	839 1,063	851 1,077	1.41% 1.30%
5.	Lincoln Boulevard at Mindanao Way	AM PM	7 8	797 998	804 1,006	0.87% 0.80%
6.	Lincoln Boulevard at Bali Way	PM	9	961	970	0.93%

Notes:
Project Percentage Share (4) = [Column (1) / Column (3)].

12.0 SITE ACCESS AND INTERNAL CIRCULATION EVALUATION

12.1 Site Access Evaluation

As shown in *Figure 2-1*, access to the proposed Project will be provided via two full access unsignalized driveways along Fiji Way. The easterly driveway will provide primary access to the site and the westerly driveway will provide an incidental secondary access. It should be noted that the westerly driveway currently exists and will continue to provide joint access to property immediately to the west.

Table 12-1 summarizes the intersection operations at the primary project driveway for near-term (Year 2013) traffic conditions at completion and full occupancy of the proposed project. The operations analysis for the primary project driveway is based on the *Highway Capacity Manual 2000* (HCM 2000) methodology. Review of *Table 12-1*, shows that the primary project driveway is forecast to operate at LOS B during the AM and PM peak hours for near-term (Year 2013) traffic conditions. As such, project access will be adequate. Motorists entering and exiting the project site will be able to do so comfortably, safely, and without undue congestion.

Appendix E presents the Year 2013 level of service calculation worksheets for the primary project driveway.

12.2 Internal Circulation

The on-site circulation layout of the proposed Project as illustrated in *Figure 2-1* on an overall basis, is adequate. Curb return radii appear adequate for passenger cars, boat trailers, small service/delivery trucks (Fedex, UPS) and trash trucks.

TABLE 12-1
PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY
FOR PROJECT DRIVEWAY INTERSECTIONS

Project Driveway	Time Period	Year 2013 Traffic Conditions	
		HCM (Delay)	**LOS**
▪ Main Project Driveway at Fiji Way	AM	10.6 sec/veh	B
	PM	12.9 sec/veh	B

13.0 PARKING REQUIREMENTS

To determine the number of parking spaces required to support the Project, parking demand was calculated using the parking ratios contained within the Marina Del Rey LUP. The Marina Del Rey LUP requires a parking ratio of 0.5 parking spaces per boat storage space and a parking ratio of 1 space/400 SF for office uses. Direct application of the aforementioned parking ratios to the proposed Project results in a total parking requirement of 197 parking spaces (188 spaces for the Dry Stack facility and 9 spaces for the Sheriff's/Boatwright facility). With a proposed on-site parking supply of 135 spaces, a theoretical "code" parking shortfall of 62 spaces is forecast.

Parking ratios for dry stack facilities are somewhat unique within local parking ordinances. As shown in ***Table 13-1***, a common "design ratio" used in the industry is 1 parking space/4 dry storage spaces, which has been found to accommodate even peak usage times like Memorial Day, July 4th and Labor Day. This ratio has been used in the development of dry stack facilities in North Lake Tahoe, California and in Clear Lake, Texas. *Table 13-1* also indicates that actual ratios used at other sites resulted in relatively less parking than the "design ratio", and totaled 1 space/5 dry storage spaces in Virginia Beach, Virginia, with parking ratios as low as 1 space/10 storage spaces used at facilities in Alabama and North Carolina.

Parking ratios for dry stack facilities are beginning to find their way into local codes in Florida, where the facilities are becoming most common. As summarized in the middle portion of *Table 13-1*, a sampling of parking requirements in those codes indicates a range of requirements from 1 space/5 dry storage spaces (Fort Lauderdale), to 1 space/4 dry storage spaces in both Riviera Beach and Tierra Verde, to 1 space/3 dry storage spaces in Miami-Dade County, Florida

Table 13-2 presents a parking demand forecast for the proposed facility in Marina del Rey for both a "Design Case" (using an industry "design ratio" of 1 space/4 dry storage spaces) as well as a "Conservative Case" (using a ratio of 1 space/3 dry storage spaces, the most conservative value identified in the *Table 13-1* summary).

As shown in the upper portion of *Table 13-2*, applying the "design ratio" of 1 space/4 dry storage spaces to both the 345 dry stack and 30 mast up spaces of the proposed facility results in a parking requirement of 94 spaces for those two components (86 + 8 = 94). The incidental parking needs for the site office and restrooms building are accounted for in the 1 space/4 dry storage space ratio. Adding a 9-space parking allocation (at 1 space/400 SF) for the 3350 SF Sheriff's/Boatwright building brings the total to 103 spaces. This results in a functional surplus of 32 spaces when compared to the proposed 135-space supply.

TABLE 13-1

PARKING RATIO SUMMARY FOR DRY STACK FACILITIES

Description Locale/Agency	Parking Ratio (parking space/dry storage spaces)
Industry "design ratio"	1/4
Provisions at Actual Projects[23]:	
Real Island, AL	1/10
Wilmington, NC	1/10
Lake of the Ozarks, MO	1/8
Virginia Beach, VA	1/5
Clear Lake, TX	1/4
North Lake Tahoe, CA	1/4
Sample "code" ratios:	
Fort Lauderdale, FL[24]	1/5
Riviera Beach, FL[25]	1/4
Tierra Verde, FL[25]	1/4
Miami-Dade County, FL[26]	1/3
Proposed Marina del Rey Facility (provided for both dry stack and mast up)	
Self Park: (135-8)/(345+30)	1/2.9 (0.34 sp/storage space)
with Valet: (135-8+13)/(345+30)	1/2.7 (0.37 sp/storage space)

23 Source: Roof and Rack (constructors of drystack facilities).

24 Source: Fort Lauderdale Zoning Code: Chapter 47 Unified Land Development Regulations, Article III Development Requirement.

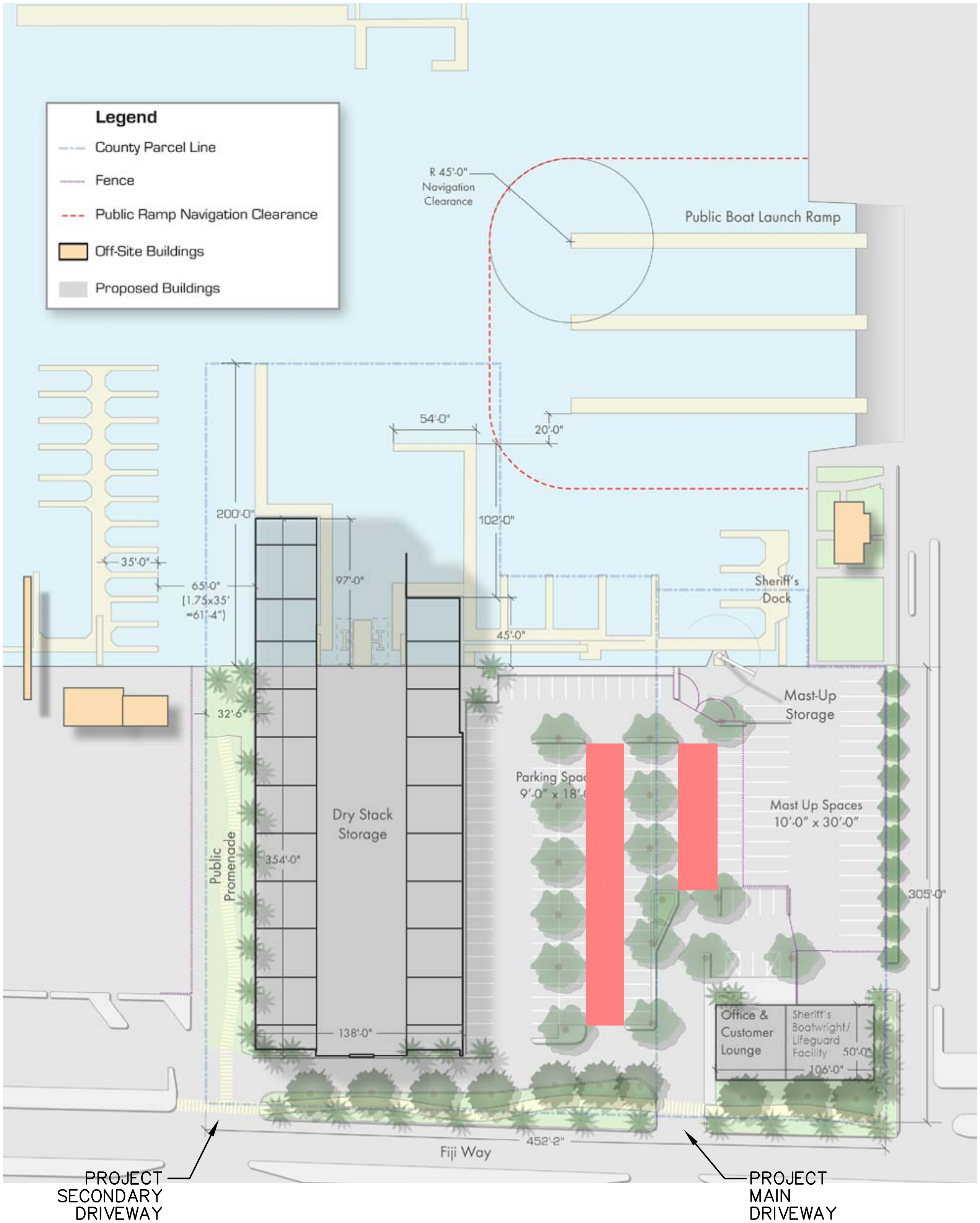
25 Source: Riviera Beach Zoning Code: Chapter 31 Zoning, Article VII Off -Street Parking and Loading.

26 Source: Miami-Dade County Zoning Code: Chapter 33 Zoning, Article VII Off -Street Parking.

TABLE 13-2
PARKING DEMAND FORECAST AND SUMMARY

Description	**Parking Ratio**	**Parking Requirement (spaces)**
"Design Case"		
345 dry stack spaces	1 sp/4 storage spaces	86
30 mast up spaces	1 sp/4 storage spaces	8
3,080 SF office & rest rooms	(included in above)	-
3,350 SF Sheriff's/Boatwright	1 sp/400 SF	9
	a. Total Required	103
	b. Provided	135
	Functional surplus (b-a)	+ 32
"Conservative Case"		
345 dry stack spaces	1 sp/3 storage spaces	115
30 mast up spaces	1 sp/3 storage spaces	10
3,080 SF office & rest rooms	(included in above)	-
3,350 SF Sheriff's/Boatwright	1 sp/400 SF	9
	a. Total Required	134
	b. Provided	135
	(b-a)	+ 1
	c. Add Valet operation at peak operating times	+ 13
	Functional surplus	+ 14

Also from *Table 13-2*, using the "Conservative Case" ratio of 1 space/3 dry storage spaces, and again after accounting for 9 spaces in support of the Sherriff's/Boatwright building, the 345 dry stack spaces plus 30 mast up spaces would require 125 parking spaces (115 + 10 = 125), for a site-wide "Conservative Case" calculation of 134 spaces. Compared to a 135-space supply, a 1-space surplus results. Further, during peak operating times, the site may offer valet-assist parking that will increase its functional parking capacity to 148 spaces (results in approximately 13 additional valet spaces in the center parking aisles – see ***Figure 13-1*** for the approximate location of the 13 valet/staging spaces). When compared to this valet-enhanced supply, even the "Conservative Case" demand of 134 spaces results in a functional surplus of 14 spaces.



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LINSCOTT LAW & GREENSPAN engineers

NO SCALE

SOURCE: AC MARTIN PARTNERS, INC.

KEY

= VALET/STAGING PARKING SPACES (APPROX. 13 SPACES)

FIGURE 13-1

LOCATION OF VALET/STAGING PARKING SPACES

DRY STACK BOAT STORAGE, MARINA DEL REY

14.0 CONGESTION MANAGEMENT PROGRAM TRAFFIC IMPACT ASSESSMENT

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system.

14.1 Traffic Impact Review

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of designated monitoring locations on the CMP highway system for potential impact analysis. Per CMP TIA criteria, the geographic area examined in the TIA must include the following, at a minimum:

- All CMP arterial monitoring intersections, including freeway on and off-ramp intersections, where the project will add 50 or more trips during either the AM or PM weekday peak hours.

- Mainline freeway-monitoring stations where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours.

14.1.1 *Intersections*

The following CMP intersection monitoring locations within the project study area have been identified:

CMP Station	Intersection/Jurisdiction
No. 49	Lincoln Boulevard at Marina Freeway
No. 50	Lincoln Boulevard at Venice Boulevard

As stated earlier, the CMP guidelines require that arterial monitoring intersection locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic) at CMP monitoring intersections. Based on the proposed project's trip generation potential, trip distribution and trip assignment, the Project will not add 50 or more trips at the identified CMP intersections during either the weekday AM peak hour or PM peak hour. Therefore a CMP intersection traffic impact analysis is not required.

14.1.2 *Freeways*

The following CMP freeway monitoring location in the project vicinity has been identified:

CMP Station	Intersection/Jurisdiction
No. 1070	I-405, north of Venice Boulevard

As stated earlier, the CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed project will add 150 or more trips (in either direction) during either the AM or PM weekday peak periods. The project is estimated to add minimal trips (i.e. less than ten trips) in either direction to the SR-90 (Marina Expressway) Freeway during the AM and PM weekday peak hours. Increases of this magnitude would likely not be discernible to typical motorists and therefore, no significant project-related mainline freeway impacts are anticipated during the AM and PM peak hours. The proposed project will also not add 150 or more trips (in either direction) during either the AM or PM weekday peak hours to any CMP freeway monitoring locations. That value is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. Therefore a CMP freeway traffic impact analysis is not required.

14.2 Transit

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of the potential impacts of the project on transit service. As previously discussed, existing transit service is provided in the vicinity of the Dry Stack Boat Storage Project.

The project trip generation, as shown in *Table 5–1*, was adjusted by values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips) to estimate transit trip generation. Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for one transit trip during the weekday AM peak hour and one transit trip during the weekday PM peak hour. Over a 24-hour period, the proposed project is forecast to generate demand for 6 daily transit trips. The calculations are as follows:

- AM Peak Hour = 18 × 1.4 × 0.035 = 1 Transit Trip
- PM Peak Hour = 18 × 1.4 × 0.035 = 1 Transit Trip
- Daily Trips = 125 × 1.4 × 0.035 = 6 Transit Trips

It is anticipated that the existing transit service in the project area will adequately accommodate the increase of project generated transit trips. Thus, based on the calculated number of generated transit trips, no project impacts on existing or future transit services in the project area are expected to occur as a result of the proposed Project.

15.0 CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

This section of the report qualitatively evaluates the potential traffic impacts associated with the construction activities at the project site. The construction activities include 1) demolition, 2) site grading and 3) building work. The site grading component will consist of three non-concurrent phases (i.e. mass grading, fine grading and site foundation). The building work component will also consist of three non-concurrent phases (i.e. building construction, architectural coatings and asphalt paving). The following section describes the potential construction related trips associated with each construction activity and provides a qualitative assessment as to whether or not the forecast construction trips will have an impact on the existing street system.

15.1 Construction Traffic Trip Generation

In order to forecast the potential construction related trips associated with the construction activities at the project site, the following assumptions, as provided by the project applicant, have been utilized for the three aforementioned construction components.

Demolition

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The demolition phase is anticipated to last approximately 30 days.
- Demolition trucks will average 56 trips per day (28 inbound and 28 outbound).
- A total of 15 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Site Grading – Mass Grading

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The mass grading phase is anticipated to last approximately 30 days.
- Mass grading trucks will average 326 trips per day (163 inbound and 163 outbound).
- A total of 26 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Site Grading – Fine Grading

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The fine grading phase is anticipated to last approximately 14 days.
- A total of 10 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Site Grading – Site Foundation

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The site foundation phase is anticipated to last approximately 14 days.
- Site foundation trucks will average 20 trips per day (10 inbound and 10 outbound).
- A total of 10 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Building Work – Building Construction

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The building construction phase is anticipated to last approximately 180 days.
- Building construction trucks will average 84 trips per day (42 inbound and 42 outbound).
- A total of 25 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Building Work – Architectural Coatings

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The architectural coatings phase is anticipated to last approximately 60 days.
- Architectural coating trucks will average 20 trips per day (10 inbound and 10 outbound).
- A total of 8 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

Building Work – Asphalt Paving

- A five-day work week (Monday through Friday from 8:00 AM to 5:00 PM) was assumed.
- The asphalt paving phase is anticipated to last approximately 10 days.
- Asphalt paving trucks will average 20 trips per day (10 inbound and 10 outbound).
- A total of 18 workers will be on the site Monday through Friday from 8:00 AM to 5:00 PM.

In addition to the aforementioned assumptions for each construction component, the following assumptions were utilized for truck trips and worker trips.

- The daily number of truck trips was averaged over the nine-hour workday to obtain the number of peak hour truck trips (50% entering and 50% exiting).
- All truck trips were converted to passenger car equivalents (P.C.E.'s) using a P.C.E. factor of 2.0.
- Each employee would make 2 trips per day (one during the AM peak hour and one during the PM peak hour).

Using the aforementioned assumptions, ***Table 15-1*** provides a summary of the forecast construction peak hour and daily traffic volumes for each of the construction components. As shown, the demolition construction component is expected to generate 142 daily trips with 27 trips (21 inbound and 6 outbound) produced during the AM peak hour and 27 trips (6 inbound and 21 outbound) produced during the PM peak hour.

The mass grading construction component is expected to generate 704 daily trips with 98 trips (62 inbound and 36 outbound) produced during the AM peak hour and 98 trips (36 inbound and 62 outbound) produced during the PM peak hour. The fine grading construction component is expected to generate 20 daily trips with 10 trips (10 inbound and 0 outbound) produced during the AM peak hour and 10 trips (0 inbound and 10 outbound) produced during the PM peak hour. The site foundation construction component is expected to generate 60 daily trips with 14 trips (12 inbound and 2 outbound) produced during the AM peak hour and 14 trips (2 inbound and 12 outbound) produced during the PM peak hour. As stated previously, these three construction activities are part of the site grading construction component and will not occur concurrently.

The building construction component is expected to generate 218 daily trips with 45 trips (35 inbound and 10 outbound) produced during the AM peak hour and 45 trips (10 inbound and 35 outbound) produced during the PM peak hour. The architectural coatings construction component is expected to generate 56 daily trips with 12 trips (10 inbound and 2 outbound) produced during the AM peak hour and 12 trips (2 inbound and 10 outbound) produced during the PM peak hour. The asphalt paving construction component is expected to generate 76 daily trips with 22 trips (20 inbound and 2 outbound) produced during the AM peak hour and 22 trips (2 inbound and 20 outbound) produced during the PM peak hour. As stated previously, these three construction activities are part of the building work construction component and will not occur concurrently.

15.2 Construction Traffic Assessment

Construction related trips associated with trucks and employees traveling to and from the site in the morning and afternoon may result in some minor traffic delays to vehicles using Lincoln Boulevard and Fiji Way. However, traffic impacts to the adjacent roadway network will be minimal and **not** long-term. Nevertheless, to reduce the impact of construction-related traffic, the implementation of a construction management plan is recommended to minimize traffic impacts upon the local circulation system in the area.

15.3 Construction Management Plan Criteria

To ensure impacts to the surrounding street system are kept a minimum, it is recommended that a Construction Management Plan for the proposed Project be developed in coordination with the County of Los Angeles and at a minimum, address the following:

- Traffic control for any street closure, detour, or other disruption to traffic circulation.
- Identify the routes that construction vehicles will utilize for the delivery of construction materials (i.e. steel, concrete, mechanical equipment, lumber, tiles, piping, windows, etc.), to access the site, traffic controls and detours, and proposed construction phasing plan for the project.
- Specify the hours during which transport activities can occur and methods to mitigate construction-related impacts to adjacent streets.
- Require the Applicant to keep all haul routes clean and free of debris including but not limited to gravel and dirt as a result of its operations. The Applicant shall clean adjacent streets, as directed by the County of Los Angeles, of any material which may have been spilled, tracked, or blown onto adjacent streets or areas.
- No hauling or transport will be allowed during nighttime hours, weekends or Federal holidays.
- Haul trucks entering or exiting public streets shall at all times yield to public traffic.
- If hauling operations cause any damage to existing pavement, street, curb, and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the County of Los Angeles.
- All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and will occur on-site.
- This Plan shall meet standards established in the current *California Manual on Uniform Traffic Control Device (MUTCD)* as well as County of Los Angeles requirements.

TABLE 15-1

PROJECT CONSTRUCTION–RELATED TRAFFIC GENERATION FORECAST

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Demolition Generation Forecast:							
• Construction Truck Traffic	56	3	3	6	3	3	6
Passenger Car Equivalent Factor[27]	2	2	2	2	2	2	2
Subtotal	112	6	6	12	6	6	12
• Workers (15 Workers)	30	15	0	15	0	15	15
Total Demolition Construction Related Traffic Trip Generation Potential	**142**	**21**	**6**	**27**	**6**	**21**	**27**
Mass Grading Generation Forecast:							
• Construction Truck Traffic	326	18	18	36	18	18	36
Passenger Car Equivalent Factor[27]	2	2	2	2	2	2	2
Subtotal	652	36	36	72	36	36	72
• Workers (26 Workers)	52	26	0	26	0	26	26
Total Mass Grading Construction Related Traffic Trip Generation Potential	**704**	**62**	**36**	**98**	**36**	**62**	**98**
Fine Grading Generation Forecast:							
• Workers (10 Workers)	20	10	0	10	0	10	10
Total Fine Grading Construction Related Traffic Trip Generation Potential	**20**	**10**	**0**	**10**	**0**	**10**	**10**
Site Foundation Generation Forecast:							
• Construction Truck Traffic	20	1	1	2	1	1	2
Passenger Car Equivalent Factor[27]	2	2	2	2	2	2	2
Subtotal	40	2	2	4	2	2	4
• Workers (10 Workers)	20	10	0	10	0	10	10
Total Site Foundation Construction Related Traffic Trip Generation Potential	**60**	**12**	**2**	**14**	**2**	**12**	**14**

[27] A passenger car equivalent factor of 2.0 was applied to the truck trips to convert them into passenger car trips.

TABLE 15-1 (CONTINUED)
PROJECT CONSTRUCTION–RELATED TRAFFIC GENERATION FORECAST

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Building Construction Generation Forecast:							
• Construction Truck Traffic	84	5	5	10	5	5	10
Passenger Car Equivalent Factor[28]	2	2	2	2	2	2	2
Subtotal	168	10	10	20	10	10	20
• Workers (25 Workers)	50	25	0	25	0	25	25
Total Building Construction Related Traffic Trip Generation Potential	**218**	**35**	**10**	**45**	**10**	**35**	**45**
Architectural Coatings Generation Forecast:							
• Construction Truck Traffic	20	1	1	2	1	1	2
Passenger Car Equivalent Factor[28]	2	2	2	2	2	2	2
Subtotal	40	2	2	4	2	2	4
• Workers (8 Workers)	16	8	0	8	0	8	8
Total Architectural Coating Construction Related Traffic Trip Generation Potential	**56**	**10**	**2**	**12**	**2**	**10**	**12**
Asphalt Paving Generation Forecast:							
• Construction Truck Traffic	20	1	1	2	1	1	2
Passenger Car Equivalent Factor[28]	2	2	2	2	2	2	2
Subtotal	40	2	2	4	2	2	4
• Workers (18 Workers)	36	18	0	18	0	18	18
Total Asphalt Paving Construction Related Traffic Trip Generation Potential	**76**	**20**	**2**	**22**	**2**	**20**	**22**

[28] A passenger car equivalent factor of 2.0 was applied to the truck trips to convert them into passenger car trips.

16.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** **–** The project site is located at 13483 Fiji Way within the Marina Del Rey area of unincorporated Los Angeles County, California. The project site is located within Mindanao Development Zone 9 (DZ 9) on County-owned parcels 52R and GG. Parcel 52R currently supports Dock 52 and is developed as a surface parking lot with free parking for Fisherman's Village, Marina Cruise Line, and other boat charters. Parcel GG is now developed as an Administrative Annex for the Department of Beaches and Harbors. Sheriff's facilities are also co-located on Parcel GG. The existing on-site surfacing parking and the Administrative Annex for the Department of Beaches and Harbors will be relocated further west on Fiji Way as part of the development of this project.

  The proposed Project consists of a boat storage facility with approximately 345 "dry slips" in a structure and 30 mast-up sailboat storage spaces in the adjacent parking lot for a total of 375 boat storage spaces. Additionally, conventional "wet slips" will be provided adjoining the bulkhead for the temporary staging of boats being retrieved from or returned to their individual storage spaces. A boat wash down facility will also be incorporated on-site. A proposed two-story, 3,080 square-foot (SF) building will house the Project office and will also provide services and amenities to boaters such as a visitor lounge, shower facilities, and personal lockers. The proposed Project will also incorporate the existing Sheriff's boatwright shop in a new two-story building (a 2,850 SF building footprint with a 500 SF second floor mezzanine). The existing Sheriff's boat dock will remain. A total of 135 surface parking spaces will be provided on-site and the project is expected to be completed by the Year 2013.

  Access to the proposed Project will be provided via two full access unsignalized driveways along Fiji Way. The easterly driveway will provide primary access to the site and the westerly driveway will provide an incidental second access. It should be noted that the westerly driveway currently exists and will continue to provide joint access to property immediately to the west.

- ***Study Scope*** **–** The following six (6) key study intersections were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing plus Ambient Growth Traffic Conditions, Existing plus Ambient Growth plus Project Traffic Conditions and Year 2013 Cumulative Traffic Conditions:

  1. Admiralty Way at Fiji Way (County of Los Angeles)
  2. Admiralty Way at Mindanao Way (County of Los Angeles)
  3. Admiralty Way at Bali Way (County of Los Angeles)
  4. Lincoln Boulevard at Fiji Way (County of Los Angeles/City of Los Angeles)
  5. Lincoln Boulevard at Mindanao Way (County of Los Angeles/City of Los Angeles)
  6. Lincoln Boulevard at Bali Way (County of Los Angeles/City of Los Angeles)

  The analysis is focused on assessing potential traffic impacts during the morning and evening commute peak hours (between 7:00-9:00 AM, and 4:00-6:00 PM) on a typical weekday.

- ***Existing Traffic Conditions* –** All six key study intersections currently operate at LOS C or better during the AM and PM peak hours.

- ***Project Trip Generation*** – The proposed Project is forecast to generate approximately 125 daily trips, with 18 trips (12 inbound, 6 outbound) produced in the AM peak hour and 18 trips (2 inbound, 16 outbound) produced in the PM peak hour on a "typical" weekday.

- ***Related Projects Traffic Characteristics* –** Thirty-nine (39) related projects were considered as part of the cumulative background setting. The 39 related projects are forecast to generate a combined total of 78,780 daily trips on a "typical" weekday, with 6,960 trips (4,190 inbound and 2,770 outbound) forecast during the AM peak hour and 9,096 trips (4,389 inbound and 4,707 outbound) during the PM peak hour.

- ***Existing Plus Ambient Growth Plus Project Traffic Conditions* –** The results of the traffic analysis indicate that traffic associated with the proposed Project ***will not*** have a significant impact at any of the six (6) key study intersections, when compared to the significant traffic impact criteria defined in this report. All six (6) key study intersections are forecast to continue to operate at LOS C or better with the addition of project generated traffic in the Year 2013.

- ***Year 2013 Cumulative Traffic Conditions* –** The results of the traffic analysis indicate that three of the six key study intersections are cumulatively impacted by the proposed Project. The locations cumulatively impacted by the proposed Project and the time period in which the impact occurs are as follows:

Key Intersection		Cumulative
4.	Lincoln Boulevard at Fiji Way	AM/PM
5.	Lincoln Boulevard at Mindanao Way	AM/PM
6.	Lincoln Boulevard at Bali Way	PM

  The project's cumulative traffic impacts at Lincoln Boulevard/Fiji Way, Lincoln Boulevard/Mindanao Way and Lincoln Boulevard/Bali Way will remain unmitigated as capacity-enhancing improvements at these key intersections are not feasible due to physical and right-of-way restrictions that prohibit any widening and/or restriping. The Marina Del Rey Local Implementation Program (LIP) list of Category 3 improvements includes several regional transportation circulation improvements, one of which is the proposed extension of SR-90 (the Marina Expressway) to connect to Admiralty Way. According to the LACDPW Traffic and Lighting Division, the three intersections along Lincoln Boulevard listed above will be subject to cumulative impacts until the SR-90 extension or another project of equal effectiveness is built. At this point, the SR-90 extension is not a programmed project and thus it is not included in this cumulative analysis. The remaining three key study intersections are forecast to continue to operate at LOS C or better in the Year 2013 during the AM and PM peak hours with the addition of ambient growth traffic, cumulative traffic and project traffic.

- ***Year 2013 Plus Project Traffic Conditions (City of Los Angeles Methodology) –*** Using the CMA methodology for signalized intersections per LADOT traffic study guidelines, the results of the traffic analysis indicate that traffic associated with the proposed Project ***will not*** have a significant impact at any of the three (3) key study intersections also under the jurisdiction of the City of Los Angeles, when compared to the significant traffic impact criteria defined in this report. Although the intersections of Lincoln Boulevard at Fiji Way and Lincoln Boulevard at Mindanao Way are forecast to operate at LOS E during the PM peak hour with the addition of project traffic, the proposed project is expected to add less than 0.010 to the ICU value. The remaining key study intersection is forecast to continue to operate at LOS C or better during the AM and PM peak hours with the addition of project generated traffic in the Year 2013.

- ***Year 2013 Recommended Improvements*** **–** The improvements recommended at the three intersections cumulatively impacted by the proposed Project under the "Year 2013 Cumulative" traffic scenario are as follows:

  - Lincoln Boulevard at Fiji Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable. The project's fair share totals 1.41%.

  - Lincoln Boulevard at Mindanao Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable. The project's fair share totals 0.87%.

  - Lincoln Boulevard at Bali Way: No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. Hence the Project's cumulative impact at this key intersection would be considered unavoidable. The project's fair share totals 0.93%.

  As stated previously, the Marina Del Rey Local Implementation Program (LIP) list of Category 3 improvements includes several regional transportation circulation improvements, one of which is the proposed extension of SR-90 (the Marina Expressway) to connect to Admiralty Way. According to the LACDPW Traffic and Lighting Division, the three intersections along Lincoln Boulevard listed above will be subject to cumulative impacts until the SR-90 extension or another project of equal effectiveness is built. At this point, the SR-90 extension is not a programmed project and thus it is not included in this cumulative analysis.

- ***Marina Del Rey Transportation Fee –*** The proposed Project's Transportation Fee for Category 1 (local Marina) and Category 3 (regional) roadway improvements totals $102,420.00 (18 PM peak hour trips x $5,690.00 per PM peak hour trip).

- ***Site Access and Internal Circulation Evaluation –*** Site access and internal circulation for the proposed Dry Stack Boat Storage project is adequate. Curb return radii appear adequate for passenger cars, boat trailers, small service/delivery trucks (Fedex, UPS) and trash trucks.

- ***County of Los Angeles Code Parking Analysis* –** The required number of parking spaces for the Project, based on the County's parking code totals 197 spaces (188 spaces for the Dry Stack facility and 9 spaces for the Sheriff's/Boatwright facility). With a proposed parking supply of 135 spaces, a parking shortfall of 62 spaces is forecast. However, using a parking code specific for dry stack facilities (i.e. the "Design Case" ratio of 1 space/4 dry storage spaces and the "Conservative Case" ratio of 1 space/3 dry storage spaces) results in a parking requirement of 103 spaces and 134 spaces, respectively. With a proposed parking supply of 135 spaces, a parking surplus of 32 spaces and 1 space is forecast for the "Design Case" and the "Conservative Case", respectively. Further, during peak operating times, the site may offer valet-assist parking that will increase its functional parking capacity to 148 spaces. When compared to this valet-enhanced supply, even the "Conservative Case" demand of 134 spaces results in a functional surplus of 14 spaces.

- ***CMP Compliance Assessment* –** No significant impacts are expected to occur on the Los Angeles Congestion Management Program roadway network (intersection or freeway) due to the development and full occupancy of the proposed Project. No significant transportation impacts are expected to occur on the Los Angeles County Congestion Management Program transit system due to the development and full occupancy of the proposed Project.

- ***Construction Traffic Assessment* –** Construction related trips associated with trucks and employees traveling to and from the site in the morning and afternoon may result in some minor traffic delays to vehicles using Lincoln Boulevard and Fiji Way. However, traffic impacts to the adjacent roadway network will be minimal and **not** long-term. Nevertheless, to reduce the impact of construction-related traffic, the implementation of a construction management plan is recommended to minimize traffic impacts upon the local circulation system in the area.

  To ensure impacts to the surrounding street system are kept a minimum, it is recommended that a Construction Management Plan for the proposed Project be developed in coordination with the County of Los Angeles and at a minimum, address the following:

  - Traffic control for any street closure, detour, or other disruption to traffic circulation.
  - Identify the routes that construction vehicles will utilize for the delivery of construction materials (i.e. steel, concrete, mechanical equipment, lumber, tiles, piping, windows, etc.), to access the site, traffic controls and detours, and proposed construction phasing plan for the project.
  - Specify the hours during which transport activities can occur and methods to mitigate construction-related impacts to adjacent streets.
  - Require the Applicant to keep all haul routes clean and free of debris including but not limited to gravel and dirt as a result of its operations. The Applicant shall clean adjacent streets, as directed by the County of Los Angeles, of any material which may have been spilled, tracked, or blown onto adjacent streets or areas.
  - No hauling or transport will be allowed during nighttime hours, weekends or Federal holidays.
  - Haul trucks entering or exiting public streets shall at all times yield to public traffic.

- If hauling operations cause any damage to existing pavement, street, curb, and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the County of Los Angeles.
- All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and will occur on-site.
- This Plan shall meet standards established in the current *California Manual on Uniform Traffic Control Device (MUTCD)* as well as County of Los Angeles requirements.

Appendix J1
Appendix A - Traffic Study Scope of Work

APPENDIX A

TRAFFIC STUDY SCOPE OF WORK

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

This Memorandum of Understanding (MOU) acknowledges Los Angeles County Department of Public Works, Traffic and Lighting Division (TLD) requirements of traffic impact analysis for the project and is subject to change:

Project Address:	13501 Fiji Wy		
Project Description:	Dry-Stack Boat Storage		
City:	Marina del Rey		
Project Buildout Year:	?	**Ambient or CMP Growth Rate per Year:**	0.6
Closest Intersection (Xtn) to the Project			
Xtn N/S Street Name:	Fiji Wy		
Xtn E/W Street Name:	Admiralty Wy		
Thomas Guide Pg+Grid:	67B7	**Los Angeles County Supervisorial District:**	4

	Consultant	**Developer**
Company:	Linscott, Law & Greenspan Engineers	
Name:	Daniel A, Kloos, P.E.	
Address:	1580 Corporate Dr, Suite 122	
City, State, Zip Code:	Costa Mesa CA 92626	
Phone #:	714-641-1587	
Fax #:	714-641-0139	
Email:	Kloos@llgengineers.com	

By:

Print Name:

Consultant/Developer's Representative **Date**

Reviewed By: Suen Fei, Lau

Print Name: Suen Fei Lau 10/29/07

TLD's Representative **Date**

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

1. Traffic Distribution: Figure(s) illustrating project trip distribution in percentages and volumes at the studied intersections analyzed.

• use Figure 1 (attached)

	N: 60%	
W: 0%	▲ N	E: 5%
	S: 35%	

Trip Credit: Exact amount of credit subject to approval by TLD

Transportation Demand Management (TDM)	~~Yes~~/no	
Existing Active Land Use	Yes/~~no~~	239 parking spaces in a parking lot plus DBH and Sheriff's Boatwright facility
Previous Land Use	~~Yes~~/no	
Internal Trip Reduction	~~Yes~~/no	
Pass-by Trip Reduction	~~Yes~~/no	

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

2. Trip Generation

Trip Generation Rate(s) Source:	I – Institute of Transportation Engineers; S – San Diego Traffic Generators; C – County; O – Other:	Edition:	

Land Use Code	Land Use	Rate Based on	Qty	*AVTE vs	ADT	Weekday a m. peak		Weekday p.m. peak		Weekend peak hour	
						In	Out	In	Out	In	Out
	Per Table 1 submitted	Avg									
	Parking	Avg									
				Total	~~1,141~~	~~39~~	~~25~~	~~37~~	~~36~~		
					125	12	6	2	16		

* - Average Vehicle Trip Ends.

✓ ok per phone conversation with Fei Law on 11/21/07 @ 3:00 PM

A-3

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

3. Study Intersections: At minimum, the study shall include the following intersections. The list is subject to change after related projects, trip generation and distribution are determined. Consultant should check with adjoining Cities regarding their requirements in addition to the following County/City intersections. Documentation of the consultation from these agencies shall be included in the traffic study.

Xtn #	% County	Thomas Guide Page+Grid	N↕ S/E↔W Street Name	City	Signalized	CMP
1			Per figure 1 submitted		Yes/no	Yes/no
2					Yes/no	Yes/no
3					Yes/no	Yes/no
4					Yes/no	Yes/no
5					Yes/no	Yes/no
6					Yes/no	Yes/no
7					Yes/no	Yes/no
8					Yes/no	Yes/no
9					Yes/no	Yes/no
10					Yes/no	Yes/no

Cites/Agencies to be consulted: City of Culver City and Los Angeles, and Caltrans.

A-4

Project Name:	Boat Central, MDR Pcl 52 & GG

4. Related Projects: Consultant should check with Los Angeles County Department of Regional Planning and planning departments of adjoining Cities. Documentation of the consultation from these agencies shall be included in the traffic study. Related projects list shall be submitted to TLD for our review and approval before being incorporated in the study

5. Congested Management Program (CMP): A CMP TIA is required for all projects required to prepare an Environmental Assessment based on local determination or projects requiring a traffic study. Where the project meets the criteria established in the Transportation Impact Analysis (TIA section of the County of Los Angeles' CMP TIA Land Use Analysis Guidelines, a CMP analysis must be prepared. At a minimum, the geographic area examined in the TIA must include the following:

- All CMP arterial monitoring intersections (see Appendix A, exhibit A-2, page A-15 of the 2002 Guidelines), including freeway on- or off-ramp intersections, where the proposed project will add 50 or more trips during either the a.m. or p.m. peak hours.
- Main line freeway monitoring locations (see Chapter 2, exhibit 2-4, page 16 of the 2002 Guidelines) where the project will add 150 or more trips, in either direction, during the a.m. or p.m. weekday peak hours.

A copy of the 2002 CMP Land Use Analysis Guidelines can be obtained by calling the CMP Hotline at (213) 922-2830.

6. Freeway Analysis: The potential traffic impact on the following Freeway(s) must be considered.

· Marina Expressway RT#-90

The applicant shall consult with the State of California Department of Transportation (Caltrans) to determine the California Environmental Quality Act levels of significance with regard to traffic impacts on Caltrans' freeway facilities. This consultation shall also include a determination of Caltrans requirements for the study of traffic impacts to its facilities and the mitigation of any such impacts. This analysis must follow the most current Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) and can be obtained from http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tiguide.pdf. If Caltrans finds that the project has a significant impact on the freeway, Caltrans shall be requested to include the basis for this finding in their response. If fees are proposed to mitigate the freeway impact, Caltrans shall be requested to identify the specific project to which the fees will apply. These written comments from Caltrans shall be included with the traffic study and submitted to Public Works for review and approval. If a documented good faith effort is made to consult with Caltrans and written comments cannot be obtained from within a reasonable amount of time, an analysis of the freeway impact shall be made using the County of Los Angeles' CMP Land Use Analysis Guidelines.

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

7. Other:

• Show project % and trips at project driveways. A 40 foot scale site plan showing adjacent driveways, adjacent intersections, and opposite driveways (if any) along the project frontage shall be prepared and submitted to our Land Development Review Section of Traffic and Lighting Division. Eight feet sidewalk fronting project property along Fiji Way plus addition right of way for bike lane(s) may be required, check with Barry Kurtz of DBH.
• For the proposed project and/or cumulative mitigation measures, a feasibility study, cost estimate, and conceptual plan (including signing and striping plans, signal plans, etc.) for the improvements may be required and should be included in the study for review and approval.
• Include LCP compliance/amendment/entitlement analysis.
Traffic counts:
• Must be taken on Tuesdays, Wednesdays or Thursdays.
• Must exclude holidays, and the first weekdays before and after the holiday
• Must be taken on days when local schools or colleges are in session.
• Must be taken on days of good weather, and avoid atypical conditions (e.g., road construction, detours, or major traffic incidents).
• Traffic counts used for other traffic studies in the area shall **NOT** be reused again, unless 25% of the counts conducted for that particular traffic study is valided with new counts. The difference in volumes between the old and new counts at each corresponding movement should not be more than 10%.
• New traffic counts shall be checked to ensure the difference in volumes at corresponding approaches, if applicable, between two adjacent intersections is no more than 10% unless the difference can be justified.
• The County's methodology shall be used when evaluating the County and/or County/City intersections. The applicant must confer with Caltrans, City of Los Angeles, and Culver City in order to select the methodology to use when determining the impact to the freeways and the transportation circulation system within their respective jurisdictions. Their written concurrence with the California Environmental Quality Act level of significance determination shall be obtained and included in the study.
• Per page ii of the Marina Beach Resort Report (MBRR) dated April 2003: "Any parcel currently used as a parking lot, any accepted proposal must replace all current parking **PRIOR** to closing any existing parking lot…. The successful proposer will assume responsibility for on-site replacement or relocation of existing parking in the vicinity To this end, the County (DBH) has pursued the rights to replacement parking on MDR Pcl 56" The DBH website map: http://beaches.co.la.ca.us/BandH/DeptInfo/Parking.htm, does not show 239 parking spaces on Pcl 52 as a parking lot. These discrepancies shall be clarified. The traffic analysis does not have to include the relocation of existing public parking spaces on MDR Pcl 52 to Pcl 56 since Pcl 56 is located on Fiji Way south of Pcl 52 and will not change existing traffic patterns.

7. Other (Cont.):

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

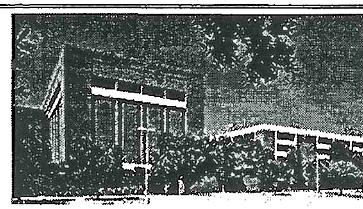
- If feasible, project shall work with adjacent property developers to connect adjacent lots with cross accesses and joint driveways or to design in such a way that future cross accesses between adjacent lots can be make possible without major redesigning.

This analysis must follow the most current Traffic Impact Analysis Report Guidelines.

SCOPING FOR TRAFFIC STUDY

Project Name:	Boat Central, MDR Pcl 52 & GG

Please return signed page 1 of 8 in person, by Mail or by Fax

In Person	By Mail
Los Angeles County Department of Public Works Traffic and Lighting Division, Land Development Review Section or Traffic Studies Section, Traffic Studies Unit 1000 South Fremont Avenue Building A-9E, 4th Floor Alhambra, CA 91803-8800 Our building, on the left with parking structure on the right. Check the following web site, for additional information: http://www.thealhambra.net/index.asp 	**Los Angeles County Department of Public Works Traffic and Lighting Division, Land Development Review Section or Traffic Studies Section, Traffic Studies Unit P.O. Box 1460 Alhambra, CA 91802-1460**

By Fax

	Processing Engineer	Section	Telephone No.	Fax No.	E-Mail Address
	Jeff PLETYAK, P.E.	Land Development Review	(626) 300-4721	(626) 300-4736	JPety@ladpw.org
✔	Suen Fei LAU, P.E.	Land Development Review	(626) 300-4820		SFLau@ladpw.org
	Patrick ARAKAWA, P E	Traffic Studies	(626) 300-4867		PArakawa @ladpw.org

A-9

Dry Stack Boat Storage, Marina Del Rey

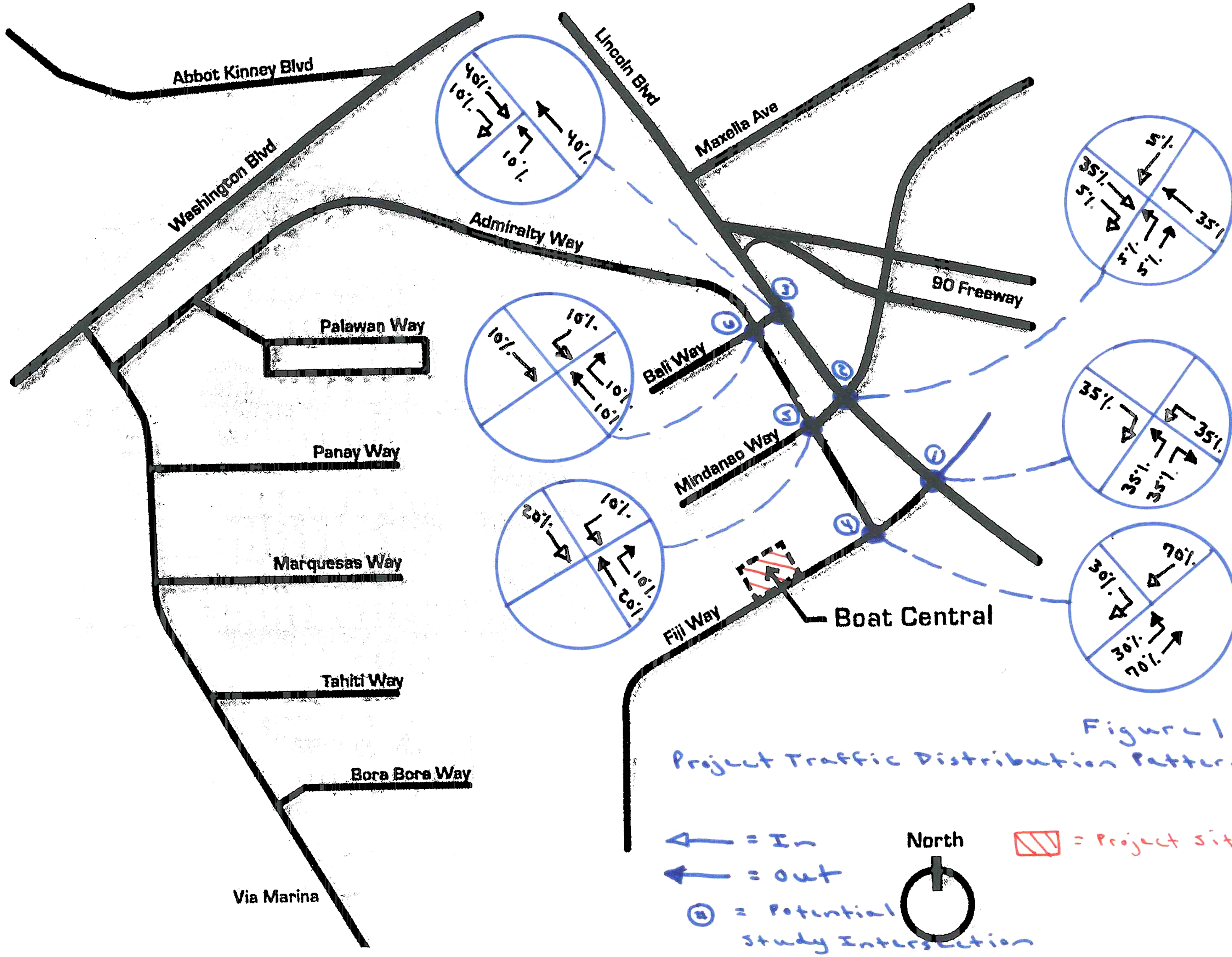


Figure 1
Project Traffic Distribution Pattern

= In
= Out
= Potential Study Intersection
= Project Site

TABLE 1
PROJECT TRAFFIC GENERATION FORECAST
DRY STACK BOAT STORAGE, MARINA DEL REY

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
Marina (TE/Wet Slip)[1]	--	0.044	0.083	0.126	0.050	0.087	0.137
Dry Stack Boat Storage (TE/Dry Stack Space)[2]	0.334	0.031	0.017	0.048	0.004	0.044	0.048
Proposed Project Generation Forecast:							
▪ Based on Marina Rates (375 Spaces)		16	31	47	19	32	51
▪ Based on Dry Stack Rates (375 Spaces)	125	12	6	18	2	16	18
Recommended Trip Generation	**125**	**12**	**6**	**18**	**2**	**16**	**18**

1 Source: Appendix G of the Specific Plan for the Marina (Table 2-11 from the Marina Del Rey Traffic Study, prepared by DKS Associates, dated January 17, 1991).

2 Source: Rates developed from the trip generation study conducted at the Newport Beach Dry Stack Boat Storage facility on September 26, 27 and 28, 2007.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
APPLICATION FOR ENVIRONMENTAL IMPACT REPORT
TRAFFIC STUDY REVIEW SERVICES, ORDINANCE NO. 91-0101

Road Fund No:	B03	Revenue Source	9254	Program No:	R118
PCA No.:	T9420071			Date:	10/29/07
Project No.:				Studies No.:	
Project Name:	Boat Central, MDR Pcl 52 & GG				
Applicant/Engineer:	Daniel A, Kloos, P.E.			Telephone No.:	714-641-1587
Company:	Linscott, Law & Greenspan, Engineers			Fax No.:	714-641-0139
Address:	1580 Corporate Dr, Suite 122				
City:	Costa Mesa			Zip:	92626

The traffic study (TS, required as part of the environmental review process, has been received. **Before a traffic study review can begin, the indicated fee must be paid to this Department.** The fee may be paid in person or mailed to:

In Person	By Mail
Cashier, Mezzanine (626) 458-6399 **Los Angeles County Department of Public Works** **900 South Fremont Avenue** **Alhambra, CA 91803-1331**	**Cashier, Mezzanine** **Los Angeles County Department of Public Works** **P.O. Box 1460** **Alhambra, CA 91802-1460**

Please **return this form** along with your payment to insure proper credit to your account. Make check payable to the **Los Angeles County Department of Public Works.**

TS review fees are based on the number of Average Daily Trips (ADT's) generated by the project and for six traffic conditions as indicated on page 5 of our 1997 guidelines, as follows:

ADT's		**FEE (Effective March 1, 2007)*	Conditions/phases/alternatives
1 - 1,000		$1,524	$1,524
1,001 - 5,000		$3,046	
5,001 10,000		$3,810	
10,001 and over		$4,571	
ADT For This Project:	<1,000	Fee:	$1,524

* For additional information, http://planning.co.la.ca.us/docFee.htm ** Additional fee is required for additional traffic conditions/phases/alternatives, and for 3 rd & alternating subsequent reviews of the study for the same project.

	Processing Engineer	Section	Telephone No.	Fax No.	E-Mail Address
	Jeff PLETYAK, P.E.	Land Development Review	(626) 300-4721	(626) 300-4736	JPety@ladpw.org
✔	Suen Fei LAU. P.E.	Land Development Review	(626) 300-4820		SFLau@ladpw.org
	Patrick ARAKAWA, P.E.	Traffic Studies	(626) 300-4867		Parakawa @ladpw.org

cc: Cashier Note: Normal review time is 6-8 weeks after review fee is paid and receipt is received by Land Development Review Unit or Studies Section along with the report and related materials (site plan, etc).
P:\tlpub\WPFILES\LAND DEVELOPMENT REVIEW\Fei\EIR07160tss Boat Central MDR Pcl 52 & GG.doc Updated 03/01/07

APPENDIX B

EXISTING TRAFFIC COUNT DATA

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

81

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: FIJI WAY

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

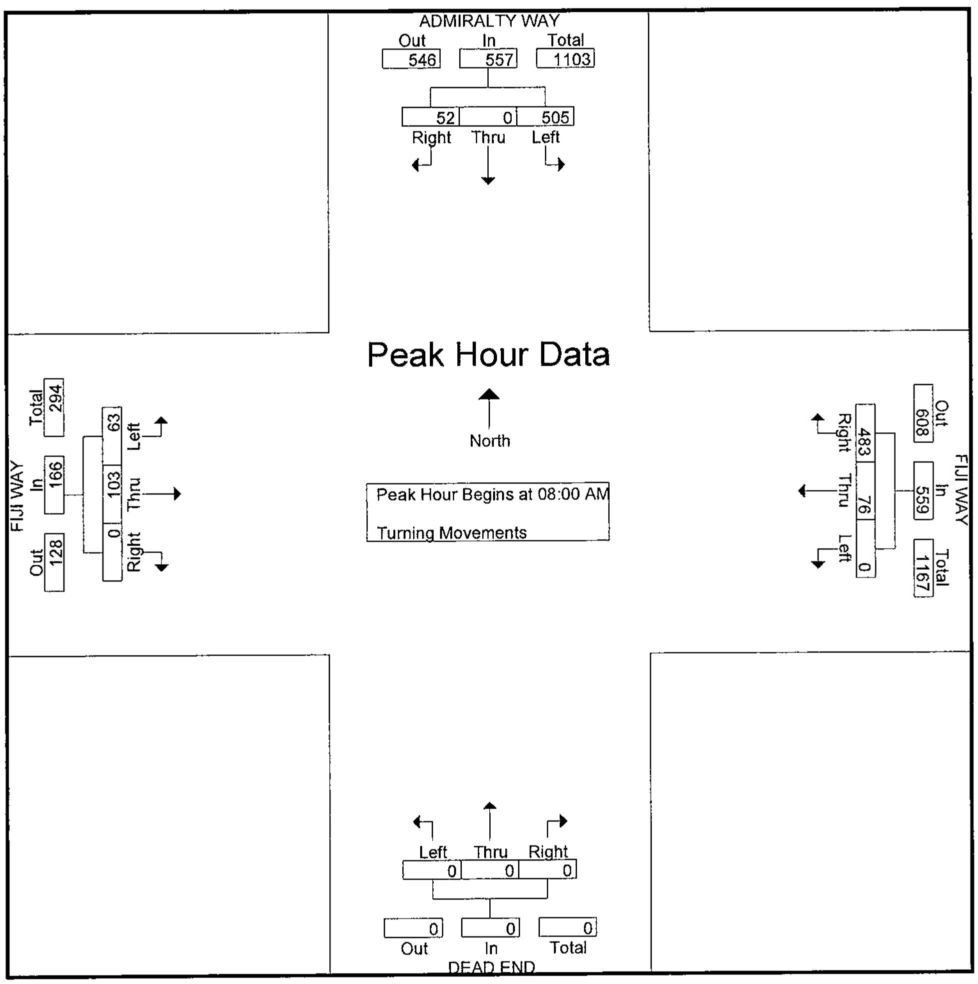
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			FIJI WAY Westbound			DEAD END Northbound			FIJI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	15	0	76	85	29	0	0	0	0	0	18	11	234
07:15 AM	20	0	84	126	24	0	0	0	0	0	20	11	285
07:30 AM	9	0	110	157	16	0	0	0	0	0	23	18	333
07:45 AM	10	0	114	155	20	0	0	0	0	0	20	15	334
Total	54	0	384	523	89	0	0	0	0	0	81	55	1186
08:00 AM	12	0	104	115	19	0	0	0	0	0	21	17	288
08:15 AM	15	0	112	117	17	0	0	0	0	0	23	14	298
08:30 AM	7	0	135	120	18	0	0	0	0	0	34	14	328
08:45 AM	18	0	154	131	22	0	0	0	0	0	25	18	368
Total	52	0	505	483	76	0	0	0	0	0	103	63	1282
*** BREAK ***													
04:00 PM	44	0	159	85	25	0	0	0	0	0	47	32	392
04:15 PM	24	0	170	93	24	0	0	0	0	0	42	19	372
04:30 PM	25	0	150	97	32	0	0	0	0	0	48	14	366
04:45 PM	22	0	184	103	39	0	0	0	0	0	41	14	403
Total	115	0	663	378	120	0	0	0	0	0	178	79	1533
05:00 PM	21	0	146	101	33	0	0	0	0	0	39	16	356
05:15 PM	29	0	193	117	34	0	0	0	0	0	32	13	418
05:30 PM	24	0	166	134	31	0	0	0	0	0	36	10	401
05:45 PM	27	0	196	121	45	0	0	0	0	0	38	15	442
Total	101	0	701	473	143	0	0	0	0	0	145	54	1617
Grand Total	322	0	2253	1857	428	0	0	0	0	0	507	251	5618
Apprch %	12.5	0	87.5	81.3	18.7	0	0	0	0	0	66.9	33.1	
Total %	5.7	0	40.1	33.1	7.6	0	0	0	0	0	9	4.5	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 2

	ADMIRALTY WAY Southbound				FIJI WAY Westbound				DEAD END Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	12	0	104	116	115	19	0	134	0	0	0	0	0	21	17	38	288
08:15 AM	15	0	112	127	117	17	0	134	0	0	0	0	0	23	14	37	298
08:30 AM	7	0	135	142	120	18	0	138	0	0	0	0	0	**34**	14	**48**	328
08:45 AM	**18**	0	**154**	**172**	**131**	**22**	0	**153**	0	0	0	0	0	25	**18**	43	**368**
Total Volume	52	0	505	557	483	76	0	559	0	0	0	0	0	103	63	166	1282
% App. Total	9.3	0	90.7		86.4	13.6	0		0	0	0		0	62	38		
PHF	.722	.000	.820	.810	.922	.864	.000	.913	.000	.000	.000	.000	.000	.757	.875	.865	.871

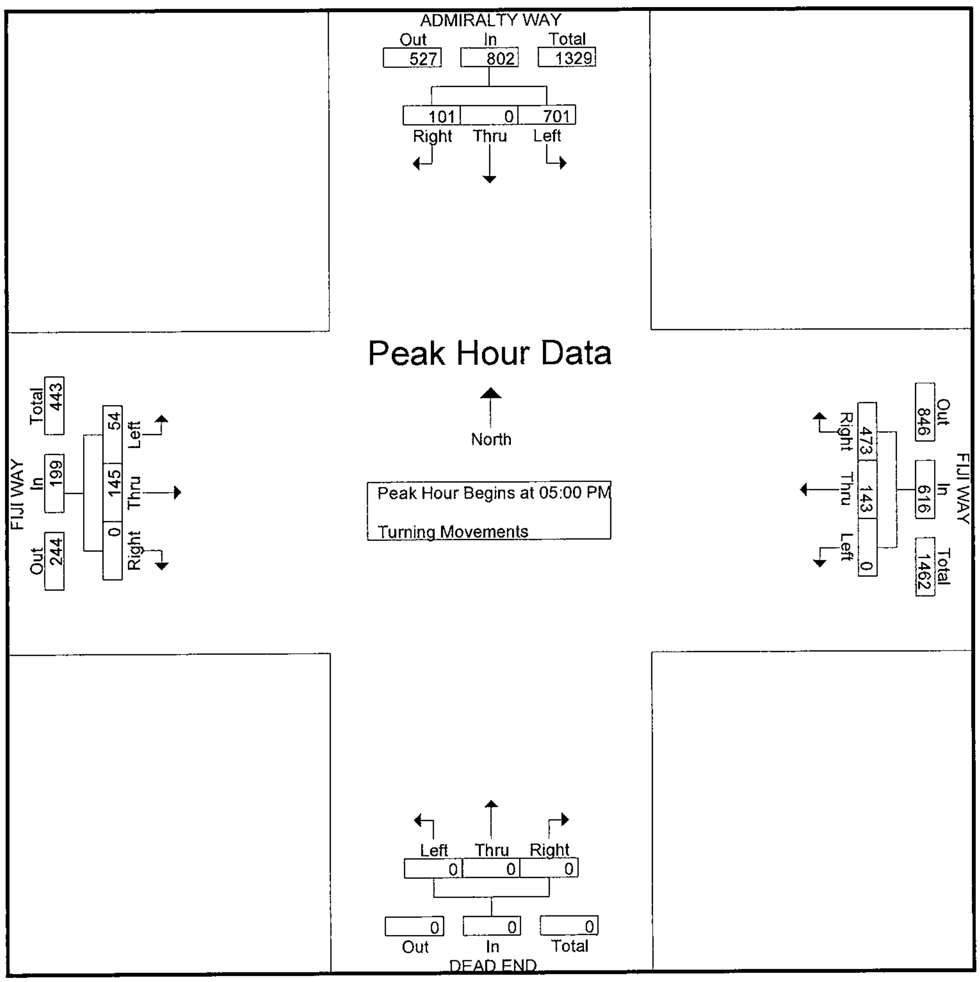


B-2

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				FIJI WAY Westbound				DEAD END Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	21	0	146	167	101	33	0	134	0	0	0	0	0	**39**	**16**	**55**	356
05:15 PM	**29**	0	193	222	117	34	0	151	0	0	0	0	0	32	13	45	418
05:30 PM	24	0	166	190	**134**	31	0	165	0	0	0	0	0	36	10	46	401
05:45 PM	27	0	**196**	**223**	121	**45**	0	**166**	0	0	0	0	0	38	15	53	**442**
Total Volume	101	0	701	802	473	143	0	616	0	0	0	0	0	145	54	199	1617
% App. Total	12.6	0	87.4		76.8	23.2	0		0	0	0		0	72.9	27.1		
PHF	.871	.000	.894	.899	.882	.794	.000	.928	.000	.000	.000	.000	.000	.929	.844	.905	.915



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: MINDANAO WAY

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

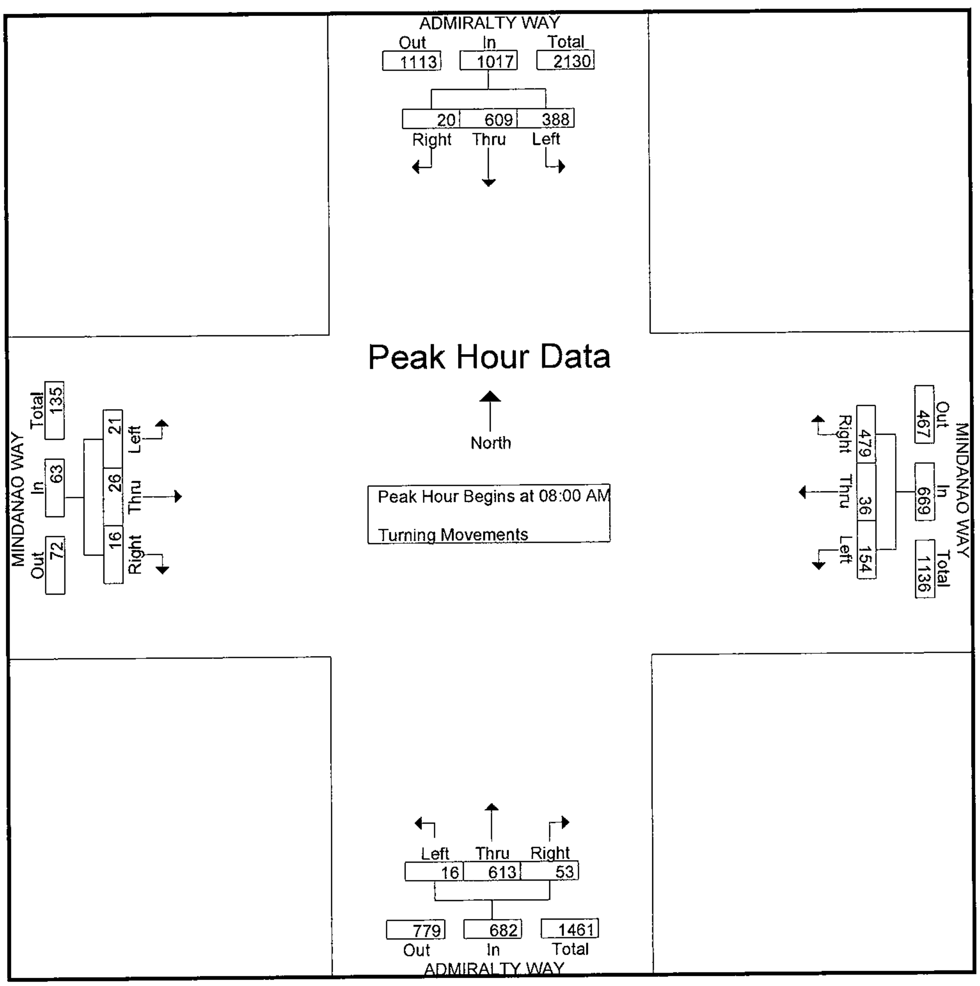
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			MINDANAO WAY Westbound			ADMIRALTY WAY Northbound			MINDANAO WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	3	93	79	52	6	18	3	79	6	2	1	1	343
07:15 AM	1	100	56	75	8	27	16	120	3	1	7	4	418
07:30 AM	3	125	87	88	5	18	4	160	3	2	3	2	500
07:45 AM	4	149	98	119	8	24	5	180	6	7	9	2	611
Total	11	467	320	334	27	87	28	539	18	12	20	9	1872
08:00 AM	4	134	79	113	8	33	8	145	3	2	15	8	552
08:15 AM	3	143	122	132	7	44	18	151	3	3	2	6	634
08:30 AM	7	125	90	118	8	38	10	126	5	4	2	6	539
08:45 AM	6	207	97	116	13	39	17	191	5	7	7	1	706
Total	20	609	388	479	36	154	53	613	16	16	26	21	2431
*** BREAK ***													
04:00 PM	5	184	69	103	8	58	30	153	5	3	7	7	632
04:15 PM	6	192	66	112	10	90	46	147	2	1	12	1	685
04:30 PM	4	164	60	109	8	78	39	135	6	7	7	5	622
04:45 PM	1	197	92	116	9	84	32	143	9	6	5	7	701
Total	16	737	287	440	35	310	147	578	22	17	31	20	2640
05:00 PM	5	158	72	115	12	69	25	154	4	5	6	5	630
05:15 PM	6	230	98	121	12	66	26	172	2	4	13	3	753
05:30 PM	2	229	78	115	2	89	29	185	4	6	6	4	749
05:45 PM	6	207	73	124	8	67	32	136	4	6	8	2	673
Total	19	824	321	475	34	291	112	647	14	21	33	14	2805
Grand Total	66	2637	1316	1728	132	842	340	2377	70	66	110	64	9748
Apprch %	1.6	65.6	32.7	64	4.9	31.2	12.2	85.3	2.5	27.5	45.8	26.7	
Total %	0.7	27.1	13.5	17.7	1.4	8.6	3.5	24.4	0.7	0.7	1.1	0.7	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

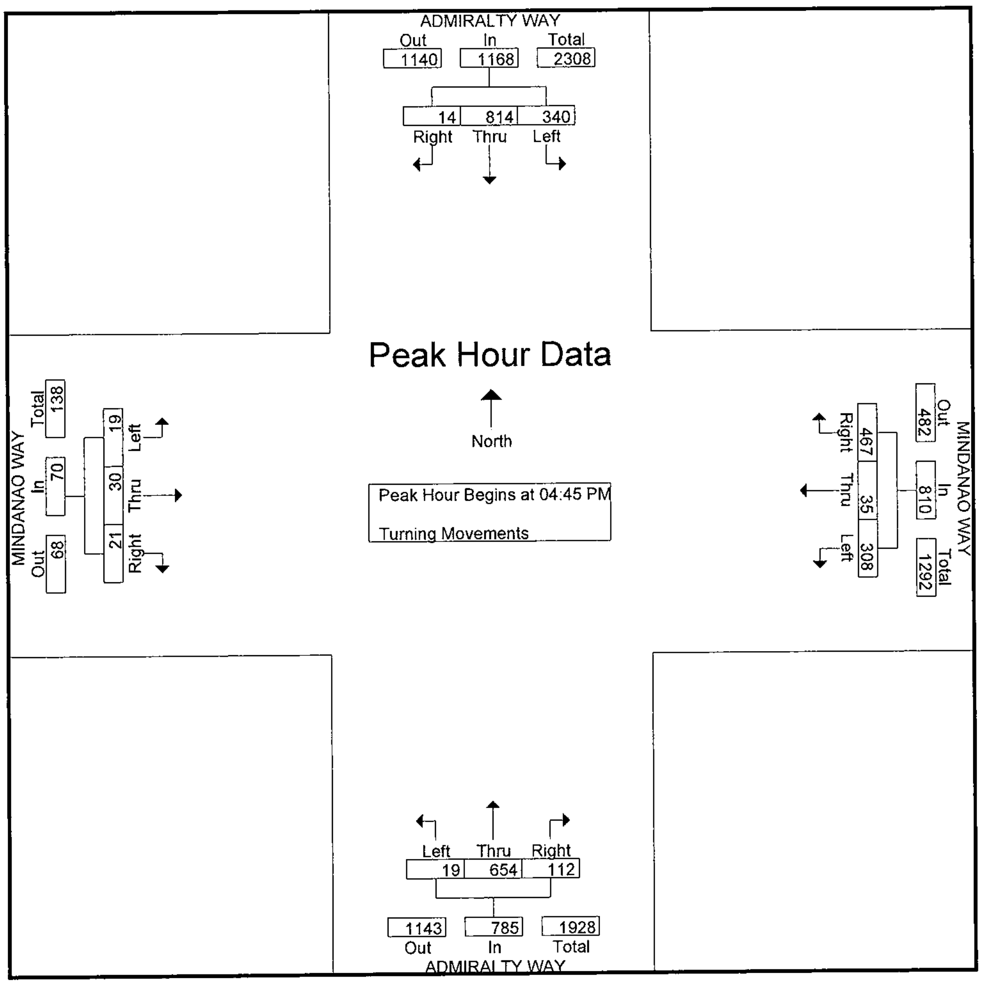
	ADMIRALTY WAY Southbound				MINDANAO WAY Westbound				ADMIRALTY WAY Northbound				MINDANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	134	79	217	113	8	33	154	8	145	3	156	2	**15**	**8**	**25**	552
08:15 AM	3	143	**122**	268	**132**	7	**44**	**183**	**18**	151	3	172	3	2	6	11	634
08:30 AM	**7**	125	90	222	118	8	38	164	10	126	**5**	141	4	2	6	12	539
08:45 AM	6	**207**	97	**310**	116	**13**	39	168	17	**191**	5	**213**	**7**	7	1	15	**706**
Total Volume	20	609	388	1017	479	36	154	669	53	613	16	682	16	26	21	63	2431
% App. Total	2	59.9	38.2		71.6	5.4	23		7.8	89.9	2.3		25.4	41.3	33.3		
PHF	.714	.736	.795	.820	.907	.692	.875	.914	.736	.802	.800	.800	.571	.433	.656	.630	.861



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				MINDANAO WAY Westbound				ADMIRALTY WAY Northbound				MINDANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	197	92	290	116	9	84	**209**	**32**	143	**9**	184	**6**	5	**7**	18	701
05:00 PM	5	158	72	235	115	**12**	69	196	25	154	4	183	5	6	5	16	630
05:15 PM	**6**	**230**	**98**	**334**	**121**	12	66	199	26	172	2	200	4	**13**	3	**20**	**753**
05:30 PM	2	229	78	309	115	2	**89**	206	29	**185**	4	**218**	6	6	4	16	749
Total Volume	14	814	340	1168	467	35	308	810	112	654	19	785	21	30	19	70	2833
% App. Total	1.2	69.7	29.1		57.7	4.3	38		14.3	83.3	2.4		30	42.9	27.1		
PHF	.583	.885	.867	.874	.965	.729	.865	.969	.875	.884	.528	.900	.875	.577	.679	.875	.941



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

#3

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: BALI WAY

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

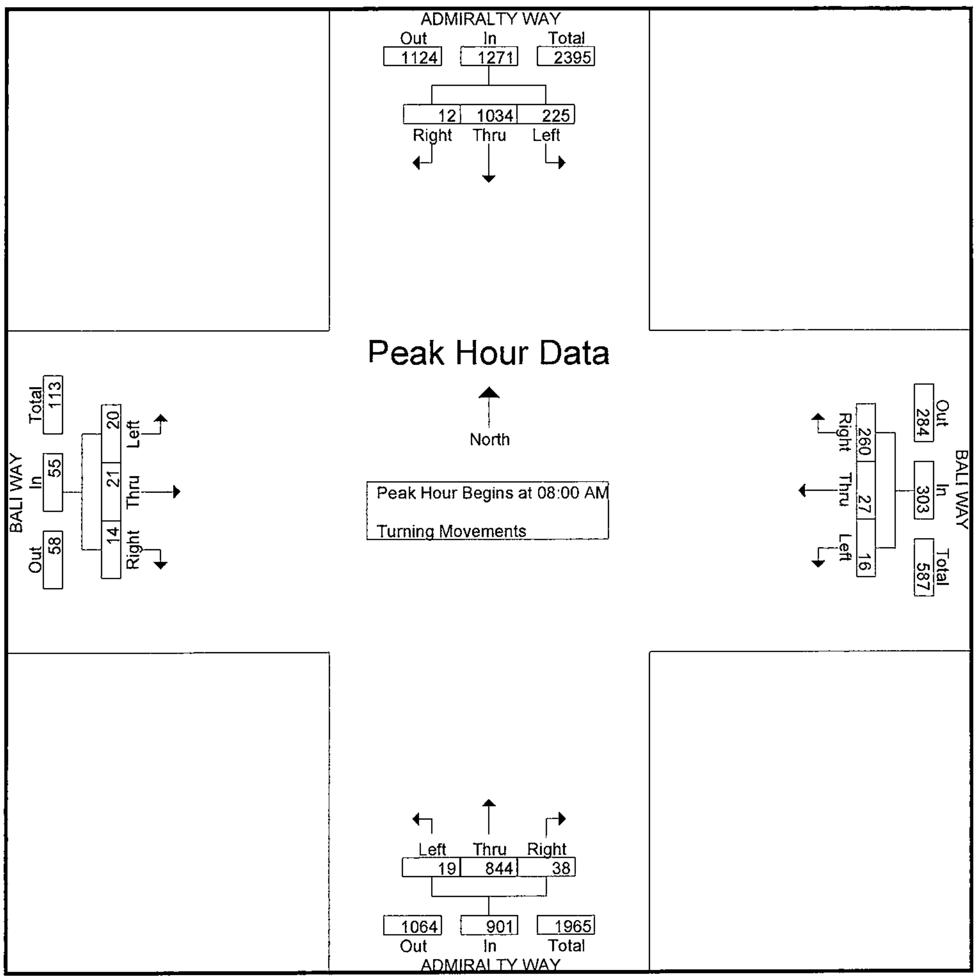
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			BALI WAY Westbound			ADMIRALTY WAY Northbound			BALI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	166	27	30	6	1	3	117	2	2	2	0	356
07:15 AM	0	177	49	53	1	0	8	173	2	0	4	1	468
07:30 AM	0	202	43	50	2	4	2	250	5	1	4	3	566
07:45 AM	1	235	47	69	5	1	7	240	5	2	6	3	621
Total	1	780	166	202	14	6	20	780	14	5	16	7	2011
08:00 AM	2	247	44	65	5	4	8	208	1	0	5	3	592
08:15 AM	3	250	70	76	9	3	7	236	2	5	9	9	679
08:30 AM	1	243	50	59	6	2	12	181	2	3	3	5	567
08:45 AM	6	294	61	60	7	7	11	219	14	6	4	3	692
Total	12	1034	225	260	27	16	38	844	19	14	21	20	2530
*** BREAK ***													
04:00 PM	5	233	48	94	8	8	29	230	6	9	2	5	677
04:15 PM	4	223	52	90	10	8	34	206	2	3	6	5	643
04:30 PM	2	225	57	87	8	9	24	191	7	6	4	7	627
04:45 PM	3	257	51	91	4	3	32	211	5	3	7	2	669
Total	14	938	208	362	30	28	119	838	20	21	19	19	2616
05:00 PM	2	228	64	81	9	7	30	238	0	5	16	3	683
05:15 PM	3	283	50	117	4	8	28	260	4	6	3	2	768
05:30 PM	3	286	64	99	7	2	33	246	6	3	4	2	755
05:45 PM	3	266	80	108	2	10	25	230	1	2	2	5	734
Total	11	1063	258	405	22	27	116	974	11	16	25	12	2940
Grand Total	38	3815	857	1229	93	77	293	3436	64	56	81	58	10097
Apprch %	0.8	81	18.2	87.8	6.6	5.5	7.7	90.6	1.7	28.7	41.5	29.7	
Total %	0.4	37.8	8.5	12.2	0.9	0.8	2.9	34	0.6	0.6	0.8	0.6	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 2

	ADMIRALTY WAY Southbound				BALI WAY Westbound				ADMIRALTY WAY Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	247	44	293	65	5	4	74	8	208	1	217	0	5	3	8	592
08:15 AM	3	250	**70**	323	**76**	**9**	3	**88**	7	**236**	2	**245**	5	**9**	**9**	**23**	679
08:30 AM	1	243	50	294	59	6	2	67	**12**	181	2	195	3	3	5	11	567
08:45 AM	**6**	**294**	61	**361**	60	7	**7**	74	11	219	**14**	244	**6**	4	3	13	**692**
Total Volume	12	1034	225	1271	260	27	16	303	38	844	19	901	14	21	20	55	2530
% App. Total	0.9	81.4	17.7		85.8	8.9	5.3		4.2	93.7	2.1		25.5	38.2	36.4		
PHF	.500	.879	.804	.880	.855	.750	.571	.861	.792	.894	.339	.919	.583	.583	.556	.598	.914

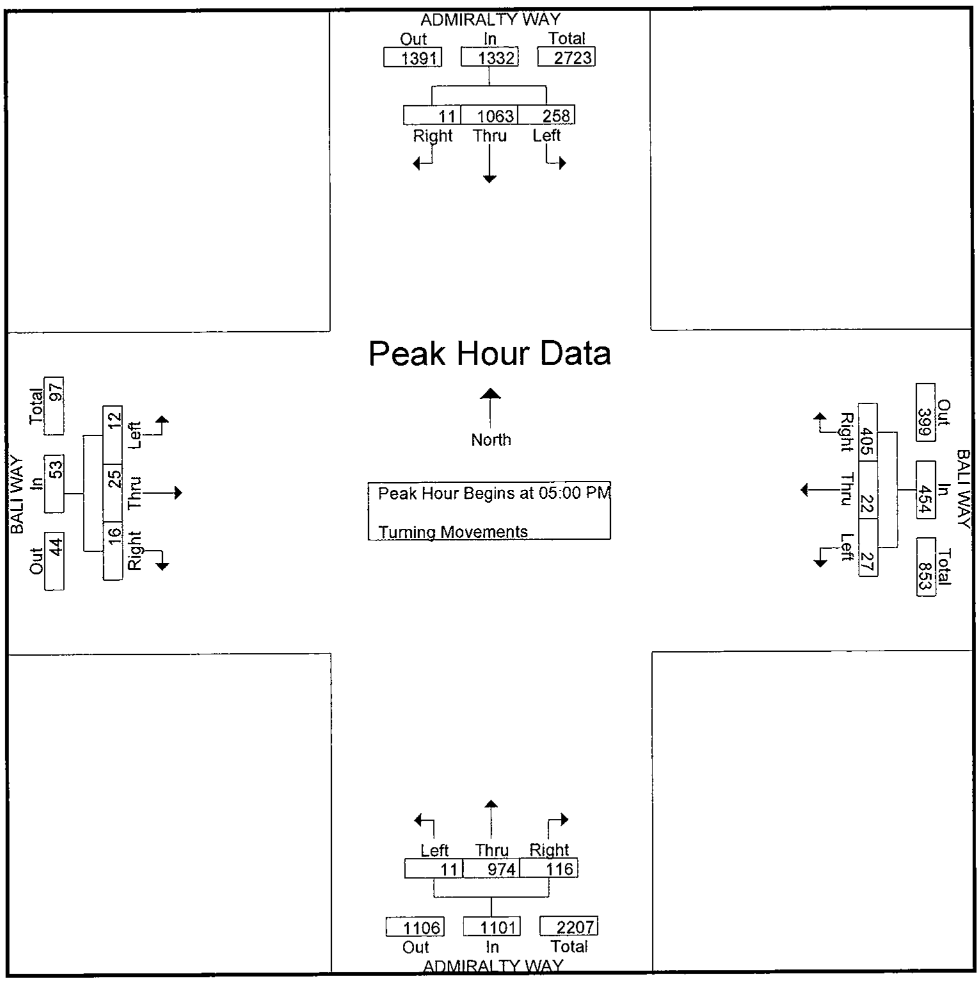


B-8

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				BALI WAY Westbound				ADMIRALTY WAY Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	228	64	294	81	**9**	7	97	30	238	0	268	5	**16**	3	**24**	683
05:15 PM	**3**	283	50	336	**117**	4	8	**129**	28	**260**	4	**292**	**6**	3	2	11	**768**
05:30 PM	3	**286**	64	**353**	99	7	2	108	**33**	246	**6**	285	3	4	2	9	755
05:45 PM	3	266	**80**	349	108	2	**10**	120	25	230	1	256	2	2	**5**	9	734
Total Volume	11	1063	258	1332	405	22	27	454	116	974	11	1101	16	25	12	53	2940
% App. Total	0.8	79.8	19.4		89.2	4.8	5.9		10.5	88.5	1		30.2	47.2	22.6		
PHF	.917	.929	.806	.943	.865	.611	.675	.880	.879	.937	.458	.943	.667	.391	.600	.552	.957



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

#4

City: MARINA DEL REY
N-S Direction: LINCOLN BOULEVARD
E-W Direction: FIJI WAY

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

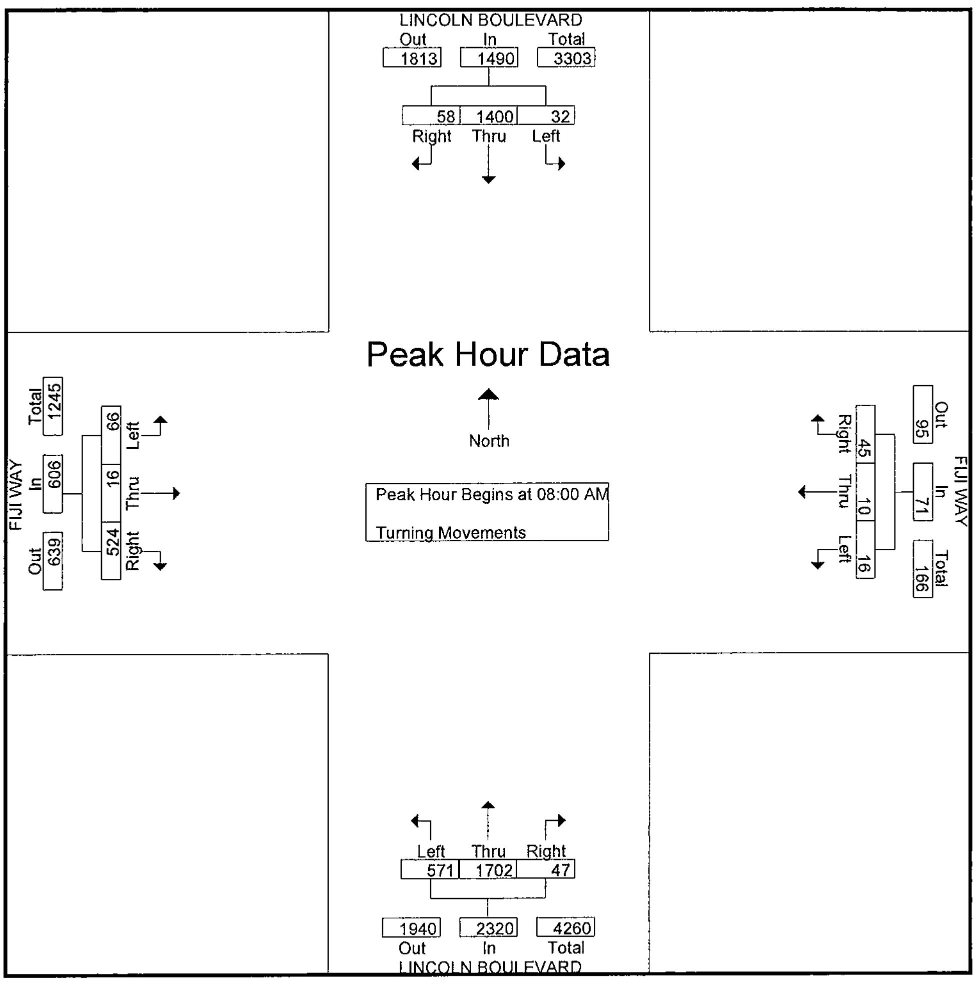
Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			FIJI WAY Westbound			LINCOLN BOULEVARD Northbound			FIJI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	15	175	5	6	2	5	4	325	91	86	4	19	737
07:15 AM	12	194	2	10	3	2	8	405	146	97	3	13	895
07:30 AM	7	258	6	5	3	3	8	471	175	102	4	16	1058
07:45 AM	12	280	7	12	3	3	13	476	184	123	2	20	1135
Total	46	907	20	33	11	13	33	1677	596	408	13	68	3825
08:00 AM	10	300	6	10	0	2	3	407	133	111	8	23	1013
08:15 AM	13	373	10	6	4	4	12	456	144	108	3	16	1149
08:30 AM	13	351	10	15	1	2	9	424	146	141	1	18	1131
08:45 AM	22	376	6	14	5	8	23	415	148	164	4	9	1194
Total	58	1400	32	45	10	16	47	1702	571	524	16	66	4487
*** BREAK ***													
04:00 PM	20	454	10	8	7	5	6	349	119	153	2	27	1160
04:15 PM	31	453	6	9	2	10	7	304	107	176	4	27	1136
04:30 PM	19	429	9	9	6	9	4	334	139	173	2	26	1159
04:45 PM	35	483	13	17	10	9	4	298	152	180	9	26	1236
Total	105	1819	38	43	25	33	21	1285	517	682	17	106	4691
05:00 PM	38	500	9	8	5	12	11	319	142	156	2	26	1228
05:15 PM	29	474	8	13	5	12	7	357	159	187	5	16	1272
05:30 PM	30	517	9	17	9	10	12	372	161	186	3	21	1347
05:45 PM	36	490	11	11	4	9	12	355	150	192	6	16	1292
Total	133	1981	37	49	23	43	42	1403	612	721	16	79	5139
Grand Total	342	6107	127	170	69	105	143	6067	2296	2335	62	319	18142
Apprch %	5.2	92 9	1.9	49.4	20.1	30.5	1.7	71 3	27	86	2.3	11.7	
Total %	1.9	33.7	0.7	0.9	0.4	0.6	0.8	33.4	12.7	12.9	0.3	1.8	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

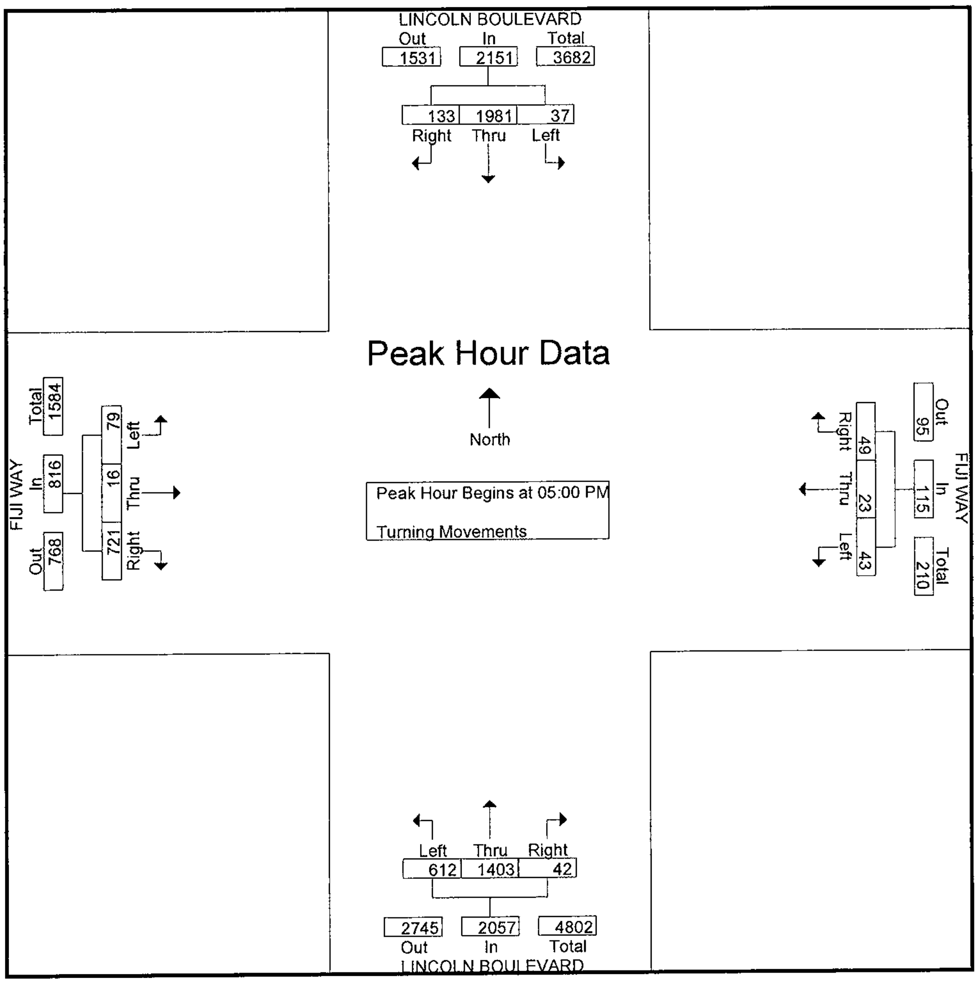
	LINCOLN BOULEVARD Southbound				FIJI WAY Westbound				LINCOLN BOULEVARD Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	10	300	6	316	10	0	2	12	3	407	133	543	111	**8**	**23**	142	1013
08:15 AM	13	373	**10**	396	6	4	4	14	12	**456**	144	**612**	108	3	16	127	1149
08:30 AM	13	351	10	374	**15**	1	2	18	9	424	146	579	141	1	18	160	1131
08:45 AM	**22**	**376**	6	**404**	14	**5**	**8**	**27**	**23**	415	**148**	586	**164**	4	9	**177**	**1194**
Total Volume	58	1400	32	1490	45	10	16	71	47	1702	571	2320	524	16	66	606	4487
% App. Total	3.9	94	2.1		63.4	14.1	22.5		2	73.4	24.6		86.5	2.6	10.9		
PHF	.659	.931	.800	.922	.750	.500	.500	.657	.511	.933	.965	.948	.799	.500	.717	.856	.939



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010

	LINCOLN BOULEVARD Southbound				FIJI WAY Westbound				LINCOLN BOULEVARD Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**38**	500	9	547	8	5	**12**	25	11	319	142	472	156	2	**26**	184	1228
05:15 PM	29	474	8	511	13	5	12	30	7	357	159	523	187	5	16	208	1272
05:30 PM	30	**517**	9	**556**	**17**	**9**	10	**36**	**12**	**372**	**161**	**545**	186	3	21	210	**1347**
05:45 PM	36	490	**11**	537	11	4	9	24	12	355	150	517	**192**	**6**	16	**214**	1292
Total Volume	133	1981	37	2151	49	23	43	115	42	1403	612	2057	721	16	79	816	5139
% App. Total	6.2	92.1	1.7		42.6	20	37.4		2	68.2	29.8		88.4	2	9.7		
PHF	.875	.958	.841	.967	.721	.639	.896	.799	.875	.943	.950	.944	.939	.667	.760	.953	.954



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

#5

City: MARINA DEL REY
N-S Direction. LINCOLN BOULEVARD
E-W Direction: MINDANAO WAY

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			MINANAO WAY Westbound			LINCOLN BOULEVARD Northbound			MINANAO WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	4	124	14	14	79	24	43	307	12	4	85	0	710
07:15 AM	4	184	14	12	68	28	66	424	17	9	71	0	897
07:30 AM	6	188	16	13	87	51	61	402	30	7	103	0	964
07:45 AM	8	290	24	11	90	63	73	418	39	11	134	0	1161
Total	22	786	68	50	324	166	243	1551	98	31	393	0	3732
08:00 AM	9	287	23	14	102	61	93	329	39	10	115	0	1082
08:15 AM	9	325	25	16	87	62	62	355	37	9	128	0	1115
08:30 AM	6	271	35	21	105	66	76	348	44	6	143	1	1122
08:45 AM	6	327	19	24	97	59	71	356	33	7	145	0	1144
Total	30	1210	102	75	391	248	302	1388	153	32	531	1	4463
*** BREAK ***													
04:00 PM	18	354	27	14	111	85	61	260	16	26	118	0	1090
04:15 PM	28	409	36	9	115	83	60	282	20	33	112	0	1187
04:30 PM	19	391	37	19	108	104	66	311	28	42	112	3	1240
04:45 PM	19	429	29	22	129	73	79	269	20	32	125	0	1226
Total	84	1583	129	64	463	345	266	1122	84	133	467	3	4743
05:00 PM	23	360	41	9	116	105	72	284	16	34	120	2	1182
05:15 PM	16	420	61	13	133	100	90	339	22	34	140	1	1369
05:30 PM	13	388	43	20	121	118	66	340	33	43	145	0	1330
05:45 PM	16	384	51	17	136	98	69	282	33	33	133	0	1252
Total	68	1552	196	59	506	421	297	1245	104	144	538	3	5133
Grand Total	204	5131	495	248	1684	1180	1108	5306	439	340	1929	7	18071
Apprch %	3.5	88	8.5	8	54.1	37.9	16.2	77.4	6.4	14.9	84.8	0.3	
Total %	1.1	28.4	2.7	1.4	9.3	6.5	6.1	29.4	2.4	1 9	10.7	0	

Transportation Studies, Inc.
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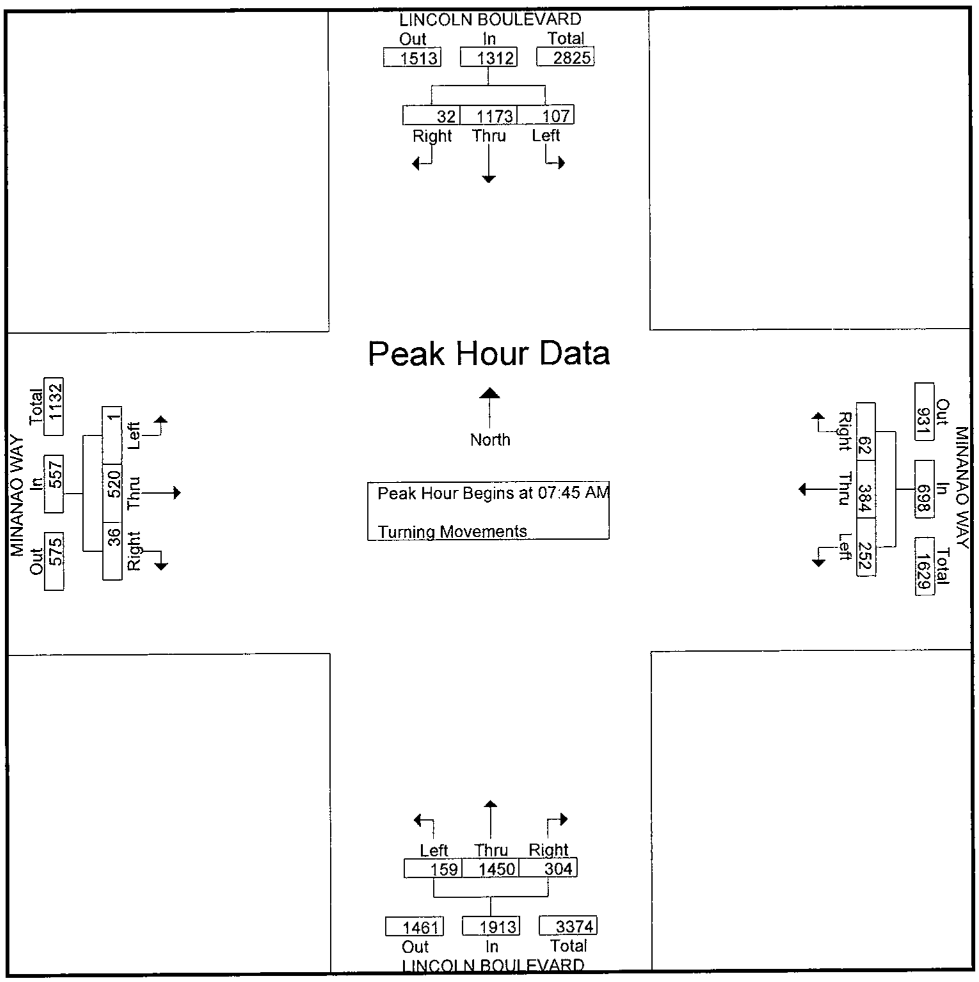
Tustin, CA. 92780

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

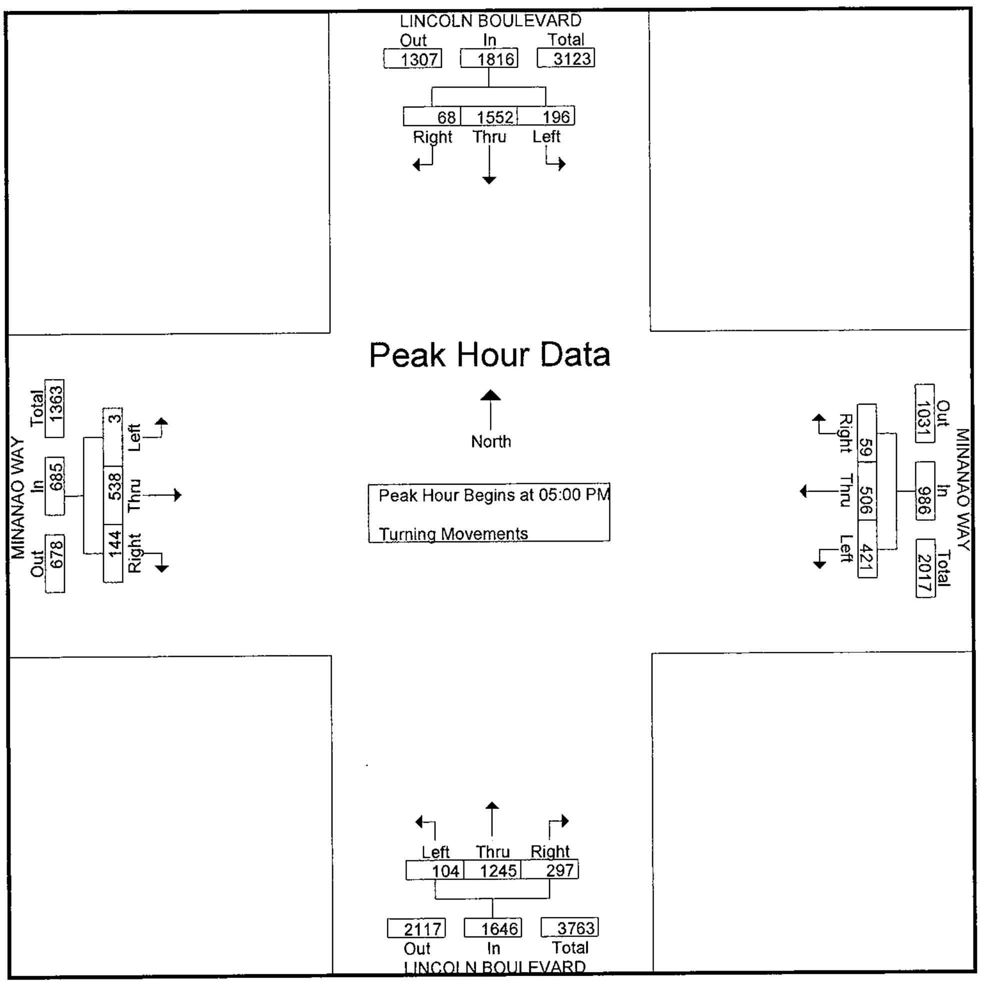
	LINCOLN BOULEVARD Southbound				MINANAO WAY Westbound				LINCOLN BOULEVARD Northbound				MINANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	8	290	24	322	11	90	63	164	73	**418**	39	**530**	**11**	134	0	145	**1161**
08:00 AM	**9**	287	23	319	14	102	61	177	**93**	329	39	461	10	115	0	125	1082
08:15 AM	9	**325**	25	**359**	16	87	62	165	62	355	37	454	9	128	0	137	1115
08:30 AM	6	271	**35**	312	**21**	**105**	**66**	**192**	76	348	**44**	468	6	**143**	**1**	**150**	1122
Total Volume	32	1173	107	1312	62	384	252	698	304	1450	159	1913	36	520	1	557	4480
% App. Total	2.4	89.4	8.2		8.9	55	36.1		15.9	75.8	8.3		6.5	93.4	0.2		
PHF	.889	.902	.764	.914	.738	.914	.955	.909	.817	.867	.903	.902	.818	.909	.250	.928	.965



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 3

	LINCOLN BOULEVARD Southbound				MINANAO WAY Westbound				LINCOLN BOULEVARD Northbound				MINANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**23**	360	41	424	9	116	105	230	72	284	16	372	34	120	**2**	156	1182
05:15 PM	16	**420**	**61**	**497**	13	133	100	246	**90**	339	22	**451**	34	140	1	175	**1369**
05:30 PM	13	388	43	444	**20**	121	**118**	**259**	66	**340**	**33**	439	**43**	**145**	0	**188**	1330
05:45 PM	16	384	51	451	17	**136**	98	251	69	282	33	384	33	133	0	166	1252
Total Volume	68	1552	196	1816	59	506	421	986	297	1245	104	1646	144	538	3	685	5133
% App. Total	3.7	85.5	10.8		6	51.3	42.7		18	75.6	6.3		21	78.5	0.4		
PHF	.739	.924	.803	.913	.738	.930	.892	.952	.825	.915	.788	.912	.837	.928	.375	.911	.937



B-15

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin. CA. 92780

RU

City: MARINA DEL REY
N-S Direction: LINCOLN BOULEVARD
E-W Direction: BALI WAY

File Name : H1003004
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

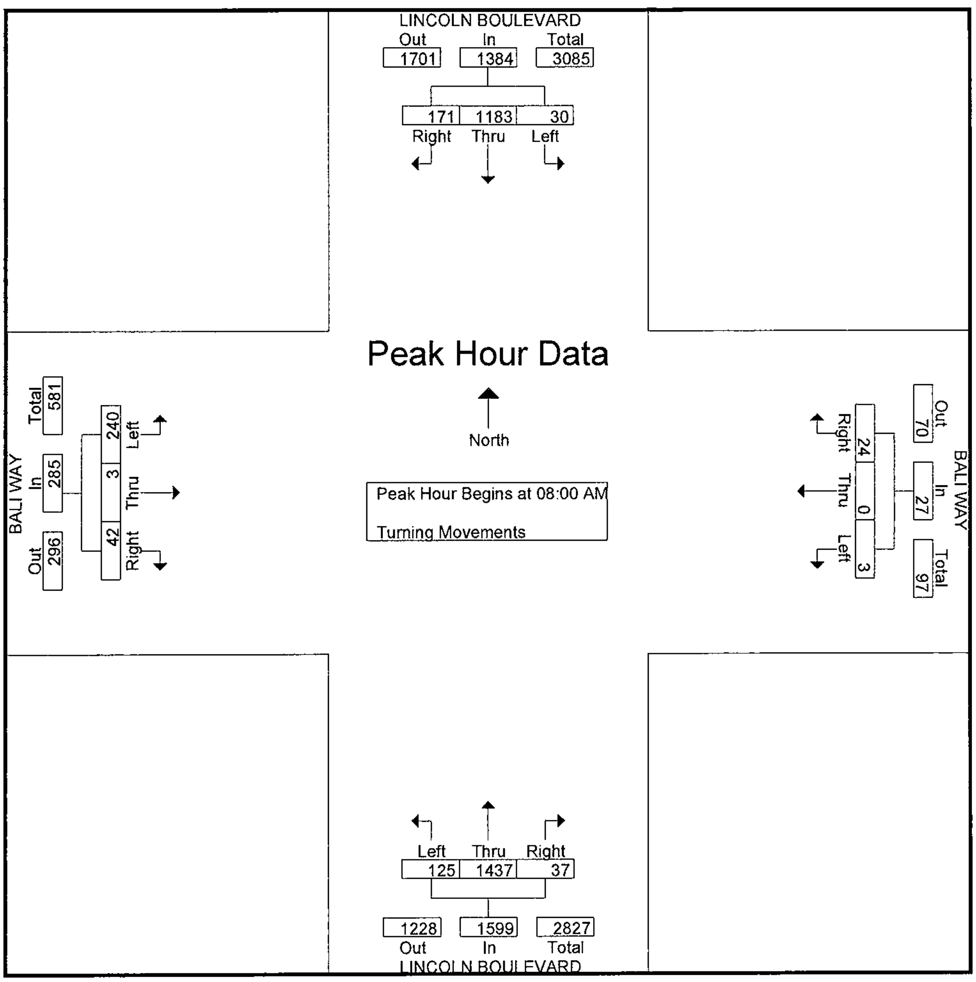
Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			BALI WAY Westbound			LINCOLN BOULEVARD Northbound			BALI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	22	126	2	1	0	1	7	360	14	9	1	36	579
07:15 AM	23	169	2	3	0	1	4	412	27	6	1	39	687
07:30 AM	36	218	1	4	0	0	2	449	28	4	1	44	787
07:45 AM	37	282	3	5	0	2	8	354	29	11	0	53	784
Total	118	795	8	13	0	4	21	1575	98	30	3	172	2837
08:00 AM	37	280	2	3	0	0	7	340	45	8	1	57	780
08:15 AM	46	279	9	7	0	1	12	353	30	18	1	58	814
08:30 AM	46	324	10	5	0	2	9	404	27	9	0	58	894
08:45 AM	42	300	9	9	0	0	9	340	23	7	1	67	807
Total	171	1183	30	24	0	3	37	1437	125	42	3	240	3295
*** BREAK ***													
04:00 PM	67	341	11	18	1	3	5	268	27	20	1	70	832
04:15 PM	79	405	3	7	1	4	4	308	24	11	0	74	920
04:30 PM	88	379	14	8	0	1	7	338	22	14	1	70	942
04:45 PM	88	394	7	12	1	4	4	317	23	20	1	77	948
Total	322	1519	35	45	3	12	20	1231	96	65	3	291	3642
05:00 PM	94	336	8	10	0	2	3	283	18	18	1	81	854
05:15 PM	73	371	17	11	2	1	6	346	30	22	1	89	969
05:30 PM	83	371	12	11	0	1	1	364	27	11	0	86	967
05:45 PM	84	382	11	5	0	3	7	353	34	15	0	66	960
Total	334	1460	48	37	2	7	17	1346	109	66	2	322	3750
Grand Total	945	4957	121	119	5	26	95	5589	428	203	11	1025	13524
Apprch %	15.7	82.3	2	79.3	3.3	17.3	1.6	91.4	7	16.4	0.9	82.7	
Total %	7	36.7	0.9	0.9	0	0.2	0.7	41.3	3.2	1.5	0.1	7.6	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003004
Site Code : 00003871
Start Date : 3/11/2010
Page No : 2

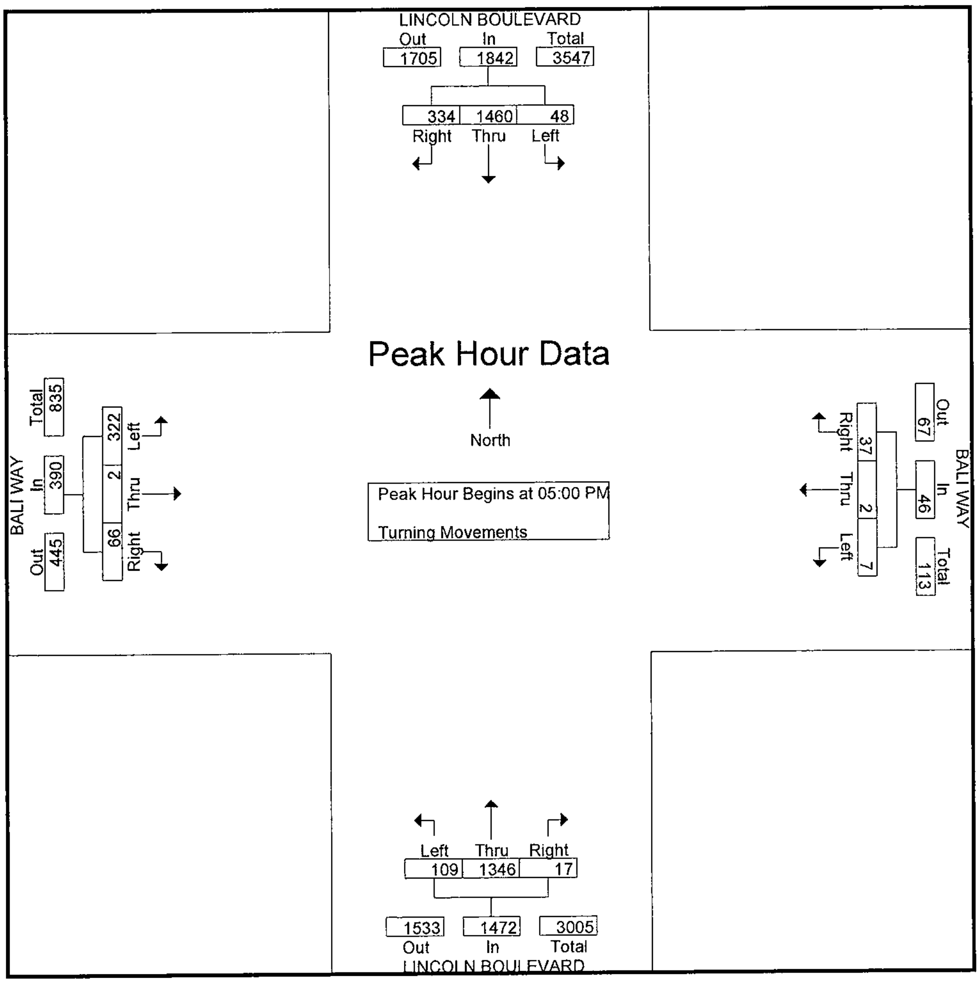
	LINCOLN BOULEVARD Southbound				BALI WAY Westbound				LINCOLN BOULEVARD Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	37	280	2	319	3	0	0	3	7	340	**45**	392	8	**1**	57	66	780
08:15 AM	**46**	279	9	334	7	0	1	8	**12**	353	30	395	**18**	1	58	**77**	814
08:30 AM	46	**324**	**10**	**380**	5	0	**2**	7	9	**404**	27	**440**	9	0	58	67	**894**
08:45 AM	42	300	9	351	**9**	0	0	**9**	9	340	23	372	7	1	**67**	75	807
Total Volume	171	1183	30	1384	24	0	3	27	37	1437	125	1599	42	3	240	285	3295
% App. Total	12.4	85.5	2.2		88.9	0	11.1		2.3	89.9	7.8		14.7	1.1	84.2		
PHF	.929	.913	.750	.911	.667	.000	.375	.750	.771	.889	.694	.909	.583	.750	.896	.925	.921



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003004
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	LINCOLN BOULEVARD Southbound				BALI WAY Westbound				LINCOLN BOULEVARD Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**94**	336	8	438	10	0	2	12	3	283	18	304	18	**1**	81	100	854
05:15 PM	73	371	**17**	461	**11**	**2**	1	**14**	6	346	30	382	**22**	1	**89**	**112**	**969**
05:30 PM	83	371	12	466	11	0	1	12	1	**364**	27	392	11	0	86	97	967
05:45 PM	84	**382**	11	**477**	5	0	**3**	8	**7**	353	**34**	**394**	15	0	66	81	960
Total Volume	334	1460	48	1842	37	2	7	46	17	1346	109	1472	66	2	322	390	3750
% App. Total	18.1	79.3	2.6		80.4	4.3	15.2		1.2	91.4	7.4		16.9	0.5	82.6		
PHF	.888	.955	.706	.965	.841	.250	.583	.821	.607	.924	.801	.934	.750	.500	.904	.871	.967



APPENDIX C

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

COUNTY OF LOS ANGELES METHODOLOGY

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Admiralty Way
E-W St: Fiji Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 2Ø Traffic Signal Split: No

Admiralty Way at Fiji Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	-	0	0	0	0	-
Sb Left	505	2	2880	0.175	9	514	2	2880	0.178
Sb Thru	0	0	0	0.000	0	0	0	0	0.000
Sb Right	52	FREE	99999	0.001	1	53	FREE	99999	0.001
Eb Left	63	1	1600	0.039 *	1	64	1	1600	0.040 *
Eb Thru	103	2	3200	0.032	2	105	2	3200	0.033
Eb Right	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	76	1	1600	0.048 *	1	77	1	1600	0.048 *
Wb Right	483	FREE	99999	0.005	9	492	FREE	99999	0.005
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.262					0.266
LOS				A					A
Total Vol.	*1282*				*23*	*1305*			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	0	-	0	0	0	0	-
Sb Left	0	514	2	2880	0.178	0	514	2	2880	0.178
Sb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Sb Right	4	57	FREE	99999	0.001	0	57	FREE	99999	0.001
Eb Left	2	66	1	1600	0.041 *	0	66	1	1600	0.041 *
Eb Thru	4	109	2	3200	0.034	0	109	2	3200	0.034
Eb Right	0	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	8	85	1	1600	0.053 *	0	85	1	1600	0.053 *
Wb Right	0	492	FREE	99999	0.005	0	492	FREE	99999	0.005
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.272					0.272
LOS					A					A
Total Vol.	*18*	*1323*				*0*	*1323*			

	2013 WITH AMB + PROJECT + CUMULATIVE					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	0	-	0	0	0	0	-
Sb Left	113	627	2	2880	0.218	0	627	2	2880	0.218
Sb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Sb Right	43	100	FREE	99999	0.001	0	100	FREE	99999	0.001
Eb Left	43	109	1	1600	0.068 *	0	109	1	1600	0.068 *
Eb Thru	20	129	2	3200	0.040	0	129	2	3200	0.040
Eb Right	0	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	14	99	1	1600	0.062 *	0	99	1	1600	0.062 *
Wb Right	46	538	FREE	99999	0.005	0	538	FREE	99999	0.005
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.348					0.348
LOS					A					A
Total Vol.	*279*	*1602*				*0*	*1602*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.006
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.082
Significant Impact: No

Area Traffic Mitigation: ########

C-1

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Admiralty Way
E-W St: Fiji Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 2Ø Traffic Signal

Admiralty Way at Fiji Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	-	0	0	0	0	-
Sb Left	701	2	2880	0.243	13	714	2	2880	0.248
Sb Thru	0	0	0	0.000	0	0	0	0	0.000
Sb Right	101	FREE	99999	0.001	2	103	FREE	99999	0.001
Eb Left	54	1	1600	0.034 *	1	55	1	1600	0.034 *
Eb Thru	145	2	3200	0.045	3	148	2	3200	0.046
Eb Right	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	143	1	1600	0.089 *	3	146	1	1600	0.091 *
Wb Right	473	FREE	99999	0.005	9	482	FREE	99999	0.005
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.366					0.373
LOS				A					A

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	0	-	0	0	0	0	-
Sb Left	0	714	2	2880	0.248	0	714	2	2880	0.248
Sb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Sb Right	1	104	FREE	99999	0.001	0	104	FREE	99999	0.001
Eb Left	5	60	1	1600	0.038 *	0	60	1	1600	0.038 *
Eb Thru	11	159	2	3200	0.050	0	159	2	3200	0.050
Eb Right	0	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	1	147	1	1600	0.092 *	0	147	1	1600	0.092 *
Wb Right	0	482	FREE	99999	0.005	0	482	FREE	99999	0.005
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.378					0.378
LOS					A					A

	2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Nb Right	0	0	0	0	-	0	0	0	0	-
Sb Left	68	782	2	2880	0.272	0	782	2	2880	0.272
Sb Thru	0	0	0	0	0.000	0	0	0	0	0.000
Sb Right	81	185	FREE	99999	0.002	0	185	FREE	99999	0.002
Eb Left	74	134	1	1600	0.084 *	0	134	1	1600	0.084 *
Eb Thru	33	192	2	3200	0.060	0	192	2	3200	0.060
Eb Right	0	0	0	0	-	0	0	0	0	-
Wb Left	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	40	187	1	1600	0.117 *	0	187	1	1600	0.117 *
Wb Right	70	552	FREE	99999	0.006	0	552	FREE	99999	0.006
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.473					0.473
LOS					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.005
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.100
Significant Impact: No

Area Traffic Mitigation: ########

Total Vol.	*1617*	*31*	*1648*	*18*	*1666*	*0*	*1666*	*366*	*2032*	*0*	*2032*

C-2

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Admiralty Way at Mindanao Way
Peak Hour: AM
Annual Growth: 0.60%

Intersection: 5.
N-S St: Admiralty Way
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal Split: Yes (E/W)

Date: 05/13/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	16	1	1600	0.010	0	16	1	1600	0.010
Nb Thru	613	2	3200	0.208 *	11	624	2	3200	0.212 *
Nb Right	53	0	0	-	1	54	0	0	-
Sb Left	388	1	1600	0.243 *	7	395	1	1600	0.247 *
Sb Thru	609	2	3200	0.197	11	620	2	3200	0.200
Sb Right	20	0	0	-	0	20	0	0	-
Eb Left	21	1	1600	0.013	0	21	1	1600	0.013
Eb Thru	26	1	1600	0.026 *	0	26	1	1600	0.026 *
Eb Right	16	0	0	-	0	16	0	0	-
Wb Left	154	0	0	0.000	3	157	0	0	0.000
Wb Thru	36	2	3200	0.059 *	1	37	2	3200	0.061 *
Wb Right	479	1	1600	0.299	9	488	1	1600	0.305
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.536					0.546
LOS				A					A
Total Vol.	*2431*				*43*	*2474*			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	16	1	1600	0.010	0	16	1	1600	0.010
Nb Thru	2	626	2	3200	0.213 *	0	626	2	3200	0.213 *
Nb Right	0	54	0	0	-	0	54	0	0	-
Sb Left	0	395	1	1600	0.247 *	0	395	1	1600	0.247 *
Sb Thru	3	623	2	3200	0.201	0	623	2	3200	0.201
Sb Right	0	20	0	0	-	0	20	0	0	-
Eb Left	0	21	1	1600	0.013	0	21	1	1600	0.013
Eb Thru	0	26	1	1600	0.026 *	0	26	1	1600	0.026 *
Eb Right	0	16	0	0	-	0	16	0	0	-
Wb Left	1	158	0	0	0.000	0	158	0	0	0.000
Wb Thru	0	37	2	3200	0.061 *	0	37	2	3200	0.061 *
Wb Right	0	488	1	1600	0.305	0	488	1	1600	0.305
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.547					0.547
LOS					A					A
Total Vol.	*6*	*2480*				*0*	*2480*			

	2013 WITH AMB + PROJECT + CUMULATIVE					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	16	1	1600	0.010	0	16	1	1600	0.010
Nb Thru	79	705	2	3200	0.240 *	0	705	2	3200	0.240 *
Nb Right	9	63	0	0	-	0	63	0	0	-
Sb Left	121	516	1	1600	0.323 *	0	516	1	1600	0.323 *
Sb Thru	147	770	2	3200	0.247	0	770	2	3200	0.247
Sb Right	1	21	0	0	-	0	21	0	0	-
Eb Left	0	21	1	1600	0.013	0	21	1	1600	0.013
Eb Thru	0	26	1	1600	0.026 *	0	26	1	1600	0.026 *
Eb Right	0	16	0	0	-	0	16	0	0	-
Wb Left	6	164	0	0	0.000	0	164	0	0	0.000
Wb Thru	0	37	2	3200	0.063 *	0	37	2	3200	0.063 *
Wb Right	45	533	1	1600	0.333	0	533	1	1600	0.333
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.652					0.652
LOS					B					B
Total Vol.	*408*	*2888*				*0*	*2888*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No
Area Traffic Mitigation:

Project ICU Impact: 0.106
Significant Impact: No
Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 5.
N-S St: Admiralty Way
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal   Split: Yes   (E/W)

Admiralty Way at Mindanao Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	654	2	3200	0.239 *	12	666	2	3200	0.244 *
Nb Right	112	0	0	-	2	114	0	0	-
Sb Left	340	1	1600	0.213 *	6	346	1	1600	0.216 *
Sb Thru	814	2	3200	0.259	15	829	2	3200	0.263
Sb Right	14	0	0	-	0	14	0	0	-
Eb Left	19	1	1600	0.012	0	19	1	1600	0.012
Eb Thru	30	1	1600	0.032 *	1	31	1	1600	0.033 *
Eb Right	21	0	0	-	0	21	0	0	-
Wb Left	308	0	0	0.000	6	314	0	0	0.000
Wb Thru	35	2	3200	0.107 *	1	36	2	3200	0.109 *
Wb Right	467	1	1600	0.292	8	475	1	1600	0.297
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.591					0.602
LOS				A					B
Total Vol.	2833				51	2884			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	4	670	2	3200	0.245 *	0	670	2	3200	0.245 *
Nb Right	1	115	0	0	-	0	115	0	0	-
Sb Left	0	346	1	1600	0.216 *	0	346	1	1600	0.216 *
Sb Thru	1	830	2	3200	0.264	0	830	2	3200	0.264
Sb Right	0	14	0	0	-	0	14	0	0	-
Eb Left	0	19	1	1600	0.012	0	19	1	1600	0.012
Eb Thru	0	31	1	1600	0.033 *	0	31	1	1600	0.033 *
Eb Right	0	21	0	0	-	0	21	0	0	-
Wb Left	0	314	0	0	0.000	0	314	0	0	0.000
Wb Thru	0	36	2	3200	0.109 *	0	36	2	3200	0.109 *
Wb Right	0	475	1	1600	0.297	0	475	1	1600	0.297
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.603					0.603
LOS					B					B
Total Vol.	6	2890				0	2890			

	2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	114	784	2	3200	0.285 *	0	784	2	3200	0.285 *
Nb Right	14	129	0	0	-	0	129	0	0	-
Sb Left	55	401	1	1600	0.251 *	0	401	1	1600	0.251 *
Sb Thru	112	942	2	3200	0.299	0	942	2	3200	0.299
Sb Right	0	14	0	0	-	0	14	0	0	-
Eb Left	1	20	1	1600	0.013	0	20	1	1600	0.013
Eb Thru	0	31	1	1600	0.033 *	0	31	1	1600	0.033 *
Eb Right	0	21	0	0	-	0	21	0	0	-
Wb Left	17	331	0	0	0.000	0	331	0	0	0.000
Wb Thru	0	36	2	3200	0.115 *	0	36	2	3200	0.115 *
Wb Right	77	552	1	1600	0.345	0	552	1	1600	0.345
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.684					0.684
LOS					B					B
Total Vol.	390	3280				0	3280			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No
Area Traffic Mitigation:

Project ICU Impact: 0.082
Significant Impact: No
Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 6.
N-S St: Admiralty Way
E-W St: Bali Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 5Ø Traffic Signal Split: No

Admiralty Way at Bali Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 01/26/11
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	844	2	3200	0.276 *	15	859	2	3200	0.281 *
Nb Right	38	0	0	-	1	39	0	0	-
Sb Left	225	1	1600	0.141 *	4	229	1	1600	0.143 *
Sb Thru	1034	2	3200	0.327	19	1053	2	3200	0.333
Sb Right	12	0	0	-	0	12	0	0	-
Eb Left	20	0	0	0.000	0	20	0	0	0.000
Eb Thru	21	2	3200	0.017 *	0	21	2	3200	0.017 *
Eb Right	14	0	0	-	0	14	0	0	-
Wb Left	16	1	1600	0.010 *	0	16	1	1600	0.010 *
Wb Thru	27	1	1600	0.017	0	27	1	1600	0.017
Wb Right	260	1	1600	0.163	5	265	1	1600	0.166
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.444					0.451
LOS				A					A
Total Vol.	2530				44	2574			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	1	860	2	3200	0.281 *	0	860	2	3200	0.281 *
Nb Right	1	40	0	0	-	0	40	0	0	-
Sb Left	0	229	1	1600	0.143 *	0	229	1	1600	0.143 *
Sb Thru	1	1054	2	3200	0.333	0	1054	2	3200	0.333
Sb Right	0	12	0	0	-	0	12	0	0	-
Eb Left	0	20	0	0	0.000	0	20	0	0	0.000
Eb Thru	0	21	2	3200	0.017 *	0	21	2	3200	0.017 *
Eb Right	0	14	0	0	-	0	14	0	0	-
Wb Left	2	18	1	1600	0.011 *	0	18	1	1600	0.011 *
Wb Thru	0	27	1	1600	0.017	0	27	1	1600	0.017
Wb Right	0	265	1	1600	0.166	0	265	1	1600	0.166
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.452					0.452
LOS					A					A
Total Vol.	5	2579				0	2579			

	2013 WITH AMB + PROJECT + CUMULATIVE					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	19	1	1600	0.012	0	19	1	1600	0.012
Nb Thru	106	966	2	3200	0.323 *	0	966	2	3200	0.323 *
Nb Right	28	68	0	0	-	0	68	0	0	-
Sb Left	16	245	1	1600	0.153 *	0	245	1	1600	0.153 *
Sb Thru	255	1309	2	3200	0.413	0	1309	2	3200	0.413
Sb Right	1	13	0	0	-	0	13	0	0	-
Eb Left	0	20	0	0	0.000	0	20	0	0	0.000
Eb Thru	0	21	2	3200	0.017 *	0	21	2	3200	0.017 *
Eb Right	0	14	0	0	-	0	14	0	0	-
Wb Left	21	39	1	1600	0.024 *	0	39	1	1600	0.024 *
Wb Thru	0	27	1	1600	0.017	0	27	1	1600	0.017
Wb Right	6	271	1	1600	0.169	0	271	1	1600	0.169
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.517					0.517
LOS					A					A
Total Vol.	433	3012				0	3012			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.066
Significant Impact: No

Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 6.
N-S St: Admiralty Way
E-W St: Bali Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 5Ø Traffic Signal

Admiralty Way at Bali Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 01/26/11
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	11	1	1600	0.007	0	11	1	1600	0.007
Nb Thru	974	2	3200	0.341 *	18	992	2	3200	0.347 *
Nb Right	116	0	0	-	2	118	0	0	-
Sb Left	258	1	1600	0.161	5	263	1	1600	0.164
Sb Thru	1063	2	3200	0.336	19	1082	2	3200	0.342
Sb Right	11	0	0	-	0	11	0	0	-
Eb Left	12	0	0	0.000 *	0	12	0	0	0.000 *
Eb Thru	25	2	3200	0.017	0	25	2	3200	0.017
Eb Right	16	0	0	-	0	16	0	0	-
Wb Left	27	1	1600	0.017	0	27	1	1600	0.017
Wb Thru	22	1	1600	0.014	0	22	1	1600	0.014
Wb Right	405	1	1600	0.253 *	7	412	1	1600	0.258 *
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.594					0.605
LOS				A					B
Total Vol.	*2940*				*51*	*2991*			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	11	1	1600	0.007	0	11	1	1600	0.007
Nb Thru	2	994	2	3200	0.348 *	0	994	2	3200	0.348 *
Nb Right	2	120	0	0	-	0	120	0	0	-
Sb Left	0	263	1	1600	0.164	0	263	1	1600	0.164
Sb Thru	0	1082	2	3200	0.342	0	1082	2	3200	0.342
Sb Right	0	11	0	0	-	0	11	0	0	-
Eb Left	0	12	0	0	0.000 *	0	12	0	0	0.000 *
Eb Thru	0	25	2	3200	0.017	0	25	2	3200	0.017
Eb Right	0	16	0	0	-	0	16	0	0	-
Wb Left	0	27	1	1600	0.017	0	27	1	1600	0.017
Wb Thru	0	22	1	1600	0.014	0	22	1	1600	0.014
Wb Right	0	412	1	1600	0.258 *	0	412	1	1600	0.258 *
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.606					0.606
LOS					B					B
Total Vol.	*4*	*2995*				*0*	*2995*			

	2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	11	1	1600	0.007	0	11	1	1600	0.007
Nb Thru	172	1166	2	3200	0.435 *	0	1166	2	3200	0.435 *
Nb Right	107	227	0	0	-	0	227	0	0	-
Sb Left	11	274	1	1600	0.171	0	274	1	1600	0.171
Sb Thru	135	1217	2	3200	0.384	0	1217	2	3200	0.384
Sb Right	0	11	0	0	-	0	11	0	0	-
Eb Left	1	13	0	0	0.000 *	0	13	0	0	0.000 *
Eb Thru	0	25	2	3200	0.017	0	25	2	3200	0.017
Eb Right	0	16	0	0	-	0	16	0	0	-
Wb Left	93	120	1	1600	0.075	0	120	1	1600	0.075
Wb Thru	0	22	1	1600	0.014	0	22	1	1600	0.014
Wb Right	15	427	1	1600	0.267 *	0	427	1	1600	0.267 *
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.702					0.702
LOS					C					C
Total Vol.	*534*	*3529*				*0*	*3529*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.097
Significant Impact: No

Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Lincoln Boulevard
E-W St: Fiji Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type: 5Ø Traffic Signal Split: No

Lincoln Boulevard at Fiji Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH					2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION					2013 WITH AMB + PROJECT + CUMULATIVE					2013 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	571	2	2880	0.198 *	10	581	2	2880	0.202 *	4	585	2	2880	0.203 *	0	585	2	2880	0.203 *	60	645	2	2880	0.224 *	0	645	2	2880	0.224 *
Nb Thru	1702	3	4800	0.364	31	1733	3	4800	0.371	0	1733	3	4800	0.371	0	1733	3	4800	0.371	196	1929	3	4800	0.412	0	1929	3	4800	0.412
Nb Right	47	0	0	-	1	48	0	0	-	0	48	0	0	-	0	48	0	0	-	0	48	0	0	-	0	48	0	0	-
Sb Left	32	1	1600	0.020	1	33	1	1600	0.021	0	33	1	1600	0.021	0	33	1	1600	0.021	0	33	1	1600	0.021	0	33	1	1600	0.021
Sb Thru	1400	3	4800	0.304 *	25	1425	3	4800	0.309 *	0	1425	3	4800	0.310 *	0	1425	3	4800	0.310 *	451	1876	3	4800	0.404 *	0	1876	3	4800	0.404 *
Sb Right	58	0	0	-	1	59	0	0	-	4	63	0	0	-	0	63	0	0	-	0	63	0	0	-	0	63	0	0	-
Eb Left	66	1	1600	0.041 *	1	67	1	1600	0.042 *	2	69	1	1600	0.043 *	0	69	1	1600	0.043 *	0	69	1	1600	0.043 *	0	69	1	1600	0.043 *
Eb Thru	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Eb Right	524	FREE	99999	0.005	9	533	FREE	99999	0.005	2	535	FREE	99999	0.005	0	535	FREE	99999	0.005	132	667	FREE	99999	0.007	0	667	FREE	99999	0.007
Wb Left	16	0	0	0.000	0	16	0	0	0.000	0	16	0	0	0.000	0	16	0	0	0.000	0	16	0	0	0.000	0	16	0	0	0.000
Wb Thru	10	1	1600	0.044 *	0	10	1	1600	0.045 *	0	10	1	1600	0.045 *	0	10	1	1600	0.045 *	0	10	1	1600	0.045 *	0	10	1	1600	0.045 *
Wb Right	45	0	0	-	1	46	0	0	-	0	46	0	0	-	0	46	0	0	-	0	46	0	0	-	0	46	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *					-0.070 *					-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *					-0.030 *					-0.030 *					-0.030 *					-0.030 *
ICU				0.587					0.598					0.601					0.601					0.716					0.716
LOS				A					A					B					B					C					C

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.003
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.118
Significant Impact: Yes

Area Traffic Mitigation:

03:07 PM

Total Vol.	4487	80	4567	12	4579	0	4579	839	5418	0	5418

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
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INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Lincoln Boulevard
E-W St: Fiji Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type: 5Ø Traffic Signal

Lincoln Boulevard at Fiji Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH					2013 WITH AMBIENT + PROJECT				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	612	2	2880	0.213 *	11	623	2	2880	0.216 *	1	624	2	2880	0.217 *
Nb Thru	1403	3	4800	0.301	25	1428	3	4800	0.306	0	1428	3	4800	0.306
Nb Right	42	0	0	-	1	43	0	0	-	0	43	0	0	-
Sb Left	37	1	1600	0.023	1	38	1	1600	0.024	0	38	1	1600	0.024
Sb Thru	1981	3	4800	0.440 *	36	2017	3	4800	0.448 *	0	2017	3	4800	0.449 *
Sb Right	133	0	0	-	2	135	0	0	-	1	136	0	0	-
Eb Left	79	1	1600	0.049 *	1	80	1	1600	0.050 *	6	86	1	1600	0.054 *
Eb Thru	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Eb Right	721	FREE	99999	0.007	13	734	FREE	99999	0.007	6	740	FREE	99999	0.007
Wb Left	43	0	0	0.000	1	44	0	0	0.000	0	44	0	0	0.000
Wb Thru	23	1	1600	0.072 *	0	23	1	1600	0.073 *	0	23	1	1600	0.073 *
Wb Right	49	0	0	-	1	50	0	0	-	0	50	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *					-0.030 *
ICU				0.774					0.787					0.793
LOS				C					C					C

	2013 WITH MITIGATION					2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	624	2	2880	0.217 *	110	734	2	2880	0.255 *	0	734	2	2880	0.255 *
Nb Thru	0	1428	3	4800	0.306	482	1910	3	4800	0.407	0	1910	3	4800	0.407
Nb Right	0	43	0	0	-	0	43	0	0	-	0	43	0	0	-
Sb Left	0	38	1	1600	0.024	0	38	1	1600	0.024	0	38	1	1600	0.024
Sb Thru	0	2017	3	4800	0.449 *	369	2386	3	4800	0.525 *	0	2386	3	4800	0.525 *
Sb Right	0	136	0	0	-	0	136	0	0	-	0	136	0	0	-
Eb Left	0	86	1	1600	0.054 *	0	86	1	1600	0.054 *	0	86	1	1600	0.054 *
Eb Thru	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Eb Right	0	740	FREE	99999	0.007	102	842	FREE	99999	0.008	0	842	FREE	99999	0.008
Wb Left	0	44	0	0	0.000	0	44	0	0	0.000	0	44	0	0	0.000
Wb Thru	0	23	1	1600	0.073 *	0	23	1	1600	0.073 *	0	23	1	1600	0.073 *
Wb Right	0	50	0	0	-	0	50	0	0	-	0	50	0	0	-
Yellow Allowance:					0.100 *					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *					-0.030 *
ICU					0.793					0.907					0.907
LOS					C					E					E

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.006
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.120
Significant Impact: Yes

Area Traffic Mitigation:

03:07 PM

Total Vol.	5139	92	5231	14	5245	0	5245	1063	6308	0	6308

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Lincoln Boulevard
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal Split: No

Lincoln Boulevard at Mindanao Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2013 WITH AMBIENT GROWTH					2013 WITH AMBIENT + PROJECT				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	159	1	1600	0.099	3	162	1	1600	0.101	0	162	1	1600	0.101
Nb Thru	1450	3	4800	0.302 *	26	1476	3	4800	0.308 *	2	1478	3	4800	0.308 *
Nb Right	304	1	1600	0.190	5	309	1	1600	0.193	0	309	1	1600	0.193
Sb Left	107	1	1600	0.067 *	2	109	1	1600	0.068 *	0	109	1	1600	0.068 *
Sb Thru	1173	3	4800	0.251	21	1194	3	4800	0.256	4	1198	3	4800	0.256
Sb Right	32	0	0	-	1	33	0	0	-	0	33	0	0	-
Eb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Thru	520	2	3200	0.174 *	9	529	2	3200	0.177 *	0	529	2	3200	0.177 *
Eb Right	36	0	0	-	1	37	0	0	-	0	37	0	0	-
Wb Left	252	2	2880	0.088 *	5	257	2	2880	0.089 *	0	257	2	2880	0.089 *
Wb Thru	384	2	3200	0.139	7	391	2	3200	0.142	1	392	2	3200	0.142
Wb Right	62	0	0	-	1	63	0	0	-	0	63	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *					-0.030 *
ICU				0.631					0.642					0.642
LOS				B					B					B
Total Vol.	4479				81	4560				7	4567			

	2013 WITH MITIGATION					2013 WITH AMB + PROJECT + CUMULATIVE					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	162	1	1600	0.101	14	176	1	1600	0.110 *	0	176	1	1600	0.110 *
Nb Thru	0	1478	3	4800	0.308 *	181	1659	3	4800	0.346	0	1659	3	4800	0.346
Nb Right	0	309	1	1600	0.193	0	309	1	1600	0.193	0	309	1	1600	0.193
Sb Left	0	109	1	1600	0.068 *	0	109	1	1600	0.068	0	109	1	1600	0.068
Sb Thru	0	1198	3	4800	0.256	422	1620	3	4800	0.344 *	0	1620	3	4800	0.344 *
Sb Right	0	33	0	0	-	0	33	0	0	-	0	33	0	0	-
Eb Left	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Thru	0	529	2	3200	0.177 *	108	637	2	3200	0.219 *	0	637	2	3200	0.219 *
Eb Right	0	37	0	0	-	27	64	0	0	-	0	64	0	0	-
Wb Left	0	257	2	2880	0.089 *	3	260	2	2880	0.090 *	0	260	2	2880	0.090 *
Wb Thru	0	392	2	3200	0.142	42	434	2	3200	0.155	0	434	2	3200	0.155
Wb Right	0	63	0	0	-	0	63	0	0	-	0	63	0	0	-
Yellow Allowance:					0.100 *					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *					-0.030 *
ICU					0.642					0.763					0.763
LOS					B					C					C
Total Vol.	0	4567				797	5364				0	5364			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
Significant Impact: No
Area Traffic Mitigation:

Project ICU Impact: 0.121
Significant Impact: Yes
Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Lincoln Boulevard
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal Split: No

Lincoln Boulevard at Mindanao Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	104	1	1600	0.065 *	2	106	1	1600	0.066 *
Nb Thru	1245	3	4800	0.259	22	1267	3	4800	0.264
Nb Right	297	1	1600	0.186	5	302	1	1600	0.189
Sb Left	196	1	1600	0.123	4	200	1	1600	0.125
Sb Thru	1552	3	4800	0.338 *	28	1580	3	4800	0.344 *
Sb Right	68	0	0	-	1	69	0	0	-
Eb Left	0	0	0	0.000	0	0	0	0	0.000
Eb Thru	538	2	3200	0.213 *	10	548	2	3200	0.217 *
Eb Right	144	0	0	-	3	147	0	0	-
Wb Left	421	2	2880	0.146 *	8	429	2	2880	0.149 *
Wb Thru	506	2	3200	0.177	9	515	2	3200	0.180
Wb Right	59	0	0	-	1	60	0	0	-
Yellow Allowance:				0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *
ICU				0.762					0.776
LOS				C					C
Total Vol.	5130				93	5223			

	2013 WITH AMBIENT + PROJECT					2013 WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	106	1	1600	0.066 *	0	106	1	1600	0.066 *
Nb Thru	6	1273	3	4800	0.265	0	1273	3	4800	0.265
Nb Right	0	302	1	1600	0.189	0	302	1	1600	0.189
Sb Left	0	200	1	1600	0.125	0	200	1	1600	0.125
Sb Thru	1	1581	3	4800	0.344 *	0	1581	3	4800	0.344 *
Sb Right	0	69	0	0	-	0	69	0	0	-
Eb Left	0	0	0	0	0.000	0	0	0	0	0.000
Eb Thru	1	549	2	3200	0.218 *	0	549	2	3200	0.218 *
Eb Right	0	147	0	0	-	0	147	0	0	-
Wb Left	0	429	2	2880	0.149 *	0	429	2	2880	0.149 *
Wb Thru	0	515	2	3200	0.180	0	515	2	3200	0.180
Wb Right	0	60	0	0	-	0	60	0	0	-
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.777					0.777
LOS					C					C
Total Vol.	8	5231				0	5231			

	2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	41	147	1	1600	0.092 *	0	147	1	1600	0.092 *
Nb Thru	439	1712	3	4800	0.357	0	1712	3	4800	0.357
Nb Right	2	304	1	1600	0.190	0	304	1	1600	0.190
Sb Left	0	200	1	1600	0.125	0	200	1	1600	0.125
Sb Thru	321	1902	3	4800	0.411 *	0	1902	3	4800	0.411 *
Sb Right	0	69	0	0	-	0	69	0	0	-
Eb Left	0	0	0	0	0.000	0	0	0	0	0.000
Eb Thru	63	612	2	3200	0.250 *	0	612	2	3200	0.250 *
Eb Right	42	189	0	0	-	0	189	0	0	-
Wb Left	5	434	2	2880	0.151 *	0	434	2	2880	0.151 *
Wb Thru	85	600	2	3200	0.206	0	600	2	3200	0.206
Wb Right	0	60	0	0	-	0	60	0	0	-
Yellow Allowance:					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *
ICU					0.904					0.904
LOS					E					E
Total Vol.	998	6229				0	6229			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.128
Significant Impact: Yes

Area Traffic Mitigation: ########

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
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(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 3.
N-S St: Lincoln Boulevard
E-W St: Bali Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal Split: Yes (E/W)

Lincoln Boulevard at Bali Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

Movement	2010 EXISTING TRAFFIC Volume	Lanes	Capacity	V/C Ratio
Nb Left	125	1	1600	0.078 *
Nb Thru	1437	3	4800	0.307
Nb Right	37	0	0	-
Sb Left	30	1	1600	0.019
Sb Thru	1183	3	4800	0.282 *
Sb Right	171	0	0	-
Eb Left	240	1	1600	0.150 *
Eb Thru	3	1	1600	0.002
Eb Right	42	FREE	99999	0.000
Wb Left	3	0	0	0.000
Wb Thru	0	1	1600	0.017 *
Wb Right	24	0	0	-
Yellow Allowance:				0.100 *
ATSAC Reduction:				-0.070 *
ATCS Reduction:				-0.030 *
ICU				0.527
LOS				A
Total Vol.	3295			

Movement	2013 WITH AMBIENT GROWTH Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	2	127	1	1600	0.079 *
Nb Thru	26	1463	3	4800	0.313
Nb Right	1	38	0	0	-
Sb Left	1	31	1	1600	0.019
Sb Thru	21	1204	3	4800	0.287 *
Sb Right	3	174	0	0	-
Eb Left	4	244	1	1600	0.153 *
Eb Thru	0	3	1	1600	0.002
Eb Right	1	43	FREE	99999	0.000
Wb Left	0	3	0	0	0.000
Wb Thru	0	0	1	1600	0.017 *
Wb Right	0	24	0	0	-
Yellow Allowance:					0.100 *
ATSAC Reduction:					-0.070 *
ATCS Reduction:					-0.030 *
ICU					0.536
LOS					A
Total Vol.	59	3354			

Movement	2013 WITH AMBIENT + PROJECT Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	127	1	1600	0.079 *
Nb Thru	2	1465	3	4800	0.313
Nb Right	0	38	0	0	-
Sb Left	0	31	1	1600	0.019
Sb Thru	4	1208	3	4800	0.288 *
Sb Right	2	176	0	0	-
Eb Left	1	245	1	1600	0.153 *
Eb Thru	0	3	1	1600	0.002
Eb Right	0	43	FREE	99999	0.000
Wb Left	0	3	0	0	0.000
Wb Thru	0	0	1	1600	0.017 *
Wb Right	0	24	0	0	-
Yellow Allowance:					0.100 *
ATSAC Reduction:					-0.070 *
ATCS Reduction:					-0.030 *
ICU					0.537
LOS					A
Total Vol.	9	3363			

Movement	2013 WITH MITIGATION Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	127	1	1600	0.079 *
Nb Thru	0	1465	3	4800	0.313
Nb Right	0	38	0	0	-
Sb Left	0	31	1	1600	0.019
Sb Thru	0	1208	3	4800	0.288 *
Sb Right	0	176	0	0	-
Eb Left	0	245	1	1600	0.153 *
Eb Thru	0	3	1	1600	0.002
Eb Right	0	43	FREE	99999	0.000
Wb Left	0	3	0	0	0.000
Wb Thru	0	0	1	1600	0.017 *
Wb Right	0	24	0	0	-
Yellow Allowance:					0.100 *
ATSAC Reduction:					-0.070 *
ATCS Reduction:					-0.030 *
ICU					0.537
LOS					A
Total Vol.	0	3363			

Movement	2013 WITH AMB + PROJECT + CUMULATIVE Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	6	133	1	1600	0.083 *
Nb Thru	175	1640	3	4800	0.350
Nb Right	0	38	0	0	-
Sb Left	0	31	1	1600	0.019
Sb Thru	406	1614	3	4800	0.377 *
Sb Right	21	197	0	0	-
Eb Left	28	273	1	1600	0.171 *
Eb Thru	0	3	1	1600	0.002
Eb Right	16	59	FREE	99999	0.001
Wb Left	0	3	0	0	0.000
Wb Thru	0	0	1	1600	0.017 *
Wb Right	0	24	0	0	-
Yellow Allowance:					0.100 *
ATSAC Reduction:					-0.070 *
ATCS Reduction:					-0.030 *
ICU					0.648
LOS					B
Total Vol.	652	4015			

Movement	2013 WITH MITIGATION Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	133	1	1600	0.083 *
Nb Thru	0	1640	3	4800	0.350
Nb Right	0	38	0	0	-
Sb Left	0	31	1	1600	0.019
Sb Thru	0	1614	3	4800	0.377 *
Sb Right	0	197	0	0	-
Eb Left	0	273	1	1600	0.171 *
Eb Thru	0	3	1	1600	0.002
Eb Right	0	59	FREE	99999	0.001
Wb Left	0	3	0	0	0.000
Wb Thru	0	0	1	1600	0.017 *
Wb Right	0	24	0	0	-
Yellow Allowance:					0.100 *
ATSAC Reduction:					-0.070 *
ATCS Reduction:					-0.030 *
ICU					0.648
LOS					B
Total Vol.	0	4015			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.001
Significant Impact: No
Area Traffic Mitigation:

Project ICU Impact: 0.112
Significant Impact: No
Area Traffic Mitigation: ########

C-11

LINSCOTT, LAW & GREENSPAN, ENGINEERS
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INTERSECTION CAPACITY UTILIZATION

Intersection: 3.
N-S St: Lincoln Boulevard
E-W St: Bali Way
Project: Dry Stack Boat Storage, Marina Del Rey
File: N:\2900\2072915\ICU\2915 ICU.xls
Control Type 6Ø Traffic Signal Split: Yes (E/W)

Lincoln Boulevard at Bali Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/11/10
Date of Count: 2010
Projection Year: 2013

	2010 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2013 WITH AMBIENT + PROJECT				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	109	1	1600	0.068 *	2	111	1	1600	0.069 *	0	111	1	1600	0.069 *
Nb Thru	1346	3	4800	0.284	24	1370	3	4800	0.289	6	1376	3	4800	0.290
Nb Right	17	0	0	-	0	17	0	0	-	0	17	0	0	-
Sb Left	48	1	1600	0.030	1	49	1	1600	0.031	0	49	1	1600	0.031
Sb Thru	1460	3	4800	0.374 *	26	1486	3	4800	0.380 *	1	1487	3	4800	0.381 *
Sb Right	334	0	0	-	6	340	0	0	-	0	340	0	0	-
Eb Left	322	1	1600	0.201 *	6	328	1	1600	0.205 *	2	330	1	1600	0.206 *
Eb Thru	2	1	1600	0.001	0	2	1	1600	0.001	0	2	1	1600	0.001
Eb Right	66	FREE	99999	0.001	1	67	FREE	99999	0.001	0	67	FREE	99999	0.001
Wb Left	7	0	0	0.000	0	7	0	0	0.000	0	7	0	0	0.000
Wb Thru	2	1	1600	0.029 *	0	2	1	1600	0.029 *	0	2	1	1600	0.029 *
Wb Right	37	0	0	-	1	38	0	0	-	0	38	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *
ATSAC Reduction:				-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:				-0.030 *					-0.030 *					-0.030 *
ICU				0.672					0.683					0.685
LOS				B					B					B
Total Vol.	3750				67	3817				9	3826			

	2013 WITH MITIGATION					2013 WITH AMB + PROJECT + CUMULATIVE					WITH MITIGATION				
Movement	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	0	111	1	1600	0.069 *	15	126	1	1600	0.079 *	0	126	1	1600	0.079 *
Nb Thru	0	1376	3	4800	0.290	424	1800	3	4800	0.379	0	1800	3	4800	0.379
Nb Right	0	17	0	0	-	0	17	0	0	-	0	17	0	0	-
Sb Left	0	49	1	1600	0.031	0	49	1	1600	0.031	0	49	1	1600	0.031
Sb Thru	0	1487	3	4800	0.381 *	311	1798	3	4800	0.465 *	0	1798	3	4800	0.465 *
Sb Right	0	340	0	0	-	93	433	0	0	-	0	433	0	0	-
Eb Left	0	330	1	1600	0.206 *	107	437	1	1600	0.273 *	0	437	1	1600	0.273 *
Eb Thru	0	2	1	1600	0.001	0	2	1	1600	0.001	0	2	1	1600	0.001
Eb Right	0	67	FREE	99999	0.001	11	78	FREE	99999	0.001	0	78	FREE	99999	0.001
Wb Left	0	7	0	0	0.000	0	7	0	0	0.000	0	7	0	0	0.000
Wb Thru	0	2	1	1600	0.029 *	0	2	1	1600	0.029 *	0	2	1	1600	0.029 *
Wb Right	0	38	0	0	-	0	38	0	0	-	0	38	0	0	-
Yellow Allowance:					0.100 *					0.100 *					0.100 *
ATSAC Reduction:					-0.070 *					-0.070 *					-0.070 *
ATCS Reduction:					-0.030 *					-0.030 *					-0.030 *
ICU					0.685					0.846					0.846
LOS					B					D					D
Total Vol.	0	3826				961	4787				0	4787			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.002
Significant Impact: No

Area Traffic Mitigation:

Project ICU Impact: 0.163
Significant Impact: Yes

Area Traffic Mitigation: ########

C-12

City of Los Angeles Methodology

LINSCOTT, LAW & GREENSPAN, ENGINEERS
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CRITICAL MOVEMENT ANALYSIS

N-S St:	Lincoln Boulevard	Lincoln Boulevard @ Fiji Way	
E-W St:	Fiji Way	Peak Hour:	AM
Project:	Dry Stack Boat Storage, Marina Del Rey	Annual Growth:	0.60%
File Name:	N:\2900\2072915\ICU\CMA1.WK4		
Counts by:	Transportation Studies, Inc.		

Date: 05/13/2010
Date of Count: 2010
Projection Year: 2013

	2010 EXIST. TRAFFIC			2013 W/ AMBIENT GROWTH				2013 W/ OTHER PROJECTS				2013 W/ PROPOSED PROJECT				2013 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	571	2	314	10	581	2	320	60	641	2	353	4	645	2	355	0	645	2	355
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1702	2	583	31	1733	2	593	196	1929	2	659	0	1929	2	659	0	1929	2	659
Comb. T-R		1	583			1	593			1	659			1	659			1	659
NB Right	47	0	-	1	48	0	-	0	48	0	-	0	48	0	-	0	48	0	-
Comb. L-T-R -		0				0				0				0				0	
SB Left	32	1	32	1	33	1	33	0	33	1	33	0	33	1	33	0	33	1	33
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1400	2	486	25	1425	2	495	451	1876	2	645	0	1876	2	646	0	1876	2	646
Comb. T-R		1	486			1	495			1	645			1	646			1	646
SB Right	58	0	-	1	59	0	-	0	59	0	-	4	63	0	-	0	63	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left	66	1	66	1	67	1	67	0	67	1	67	2	69	1	69	0	69	1	69
Comb. L-T		0	-			0	-			0	-			0	-			0	-
EB Thru	16	1	16	0	16	1	16	0	16	1	16	0	16	1	16	0	16	1	16
Comb. T-R		0	-			0	-			0	-			0	-			0	-
EB Right [1]	524	0	-	9	533	0	-	132	665	0	-	2	667	0	-	0	667	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	16	0	-	0	16	0	-	0	16	0	-	0	16	0	-	0	16	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	10	0	71	0	10	0	72	0	10	0	72	0	10	0	72	0	10	0	72
Comb. T-R		0	-			0	-			0	-			0	-			0	-
WB Right	45	0	-	1	46	0	-	0	46	0	-	0	46	0	-	0	46	0	-
Comb. L-T-R -		1				1				1				1				1	
Crit. Volumes:		N-S:	800			N-S:	814			N-S:	998			N-S:	1001			N-S:	1001
		E-W:	137			E-W:	139			E-W:	139			E-W:	141			E-W:	141
		SUM:	937			SUM:	954			SUM:	1137			SUM:	1143			SUM:	1143
No. of Phases:			3				3				3				3				3
Volume / Capacity:			0.658				0.669				0.798				0.802				0.802
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.558				0.569				0.698				0.702				0.702
Level of Service:			A				A				B				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 70% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.
[1] Eastbound right-turns are free movements, yielding on if a pedestrian is present.

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CRITICAL MOVEMENT ANALYSIS

N-S St: Lincoln Boulevard
E-W St: Fiji Way
Project: Dry Stack Boat Storage, Marina Del Rey
File Name: N:\2900\2072915\ICU\CMA1.WK4
Counts by: Transportation Studies, Inc.

Lincoln Boulevard @ Fiji Way
Peak Hour: PM
Annual Growth: 0.60%

Date: 05/13/2010
Date of Count: 2010
Projection Year: 2013

	2010 EXIST. TRAFFIC			2013 W/ AMBIENT GROWTH				2013 W/ OTHER PROJECTS				2013 W/ PROPOSED PROJECT				2013 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	612	2	337	11	623	2	343	110	733	2	403	1	734	2	404	0	734	2	404
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1403	2	482	25	1428	2	490	482	1910	2	651	0	1910	2	651	0	1910	2	651
Comb. T-R		1	482			1	490			1	651			1	651			1	651
NB Right	42	0	-	1	43	0	-	0	43	0	-	0	43	0	-	0	43	0	-
Comb. L-T-R -		0				0				0				0				0	
SB Left	37	1	37	1	38	1	38	0	38	1	38	0	38	1	38	0	38	1	38
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1981	2	705	36	2017	2	717	369	2386	2	840	0	2386	2	841	0	2386	2	841
Comb. T-R		1	705			1	717			1	840			1	841			1	841
SB Right	133	0	-	2	135	0	-	0	135	0	-	1	136	0	-	0	136	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left	79	1	79	1	80	1	80	0	80	1	80	6	86	1	86	0	86	1	86
Comb. L-T		0	-			0	-			0	-			0	-			0	-
EB Thru	16	1	16	0	16	1	16	0	16	1	16	0	16	1	16	0	16	1	16
Comb. T-R		0	-			0	-			0	-			0	-			0	-
EB Right [1]	721	0	-	13	734	0	-	102	836	0	-	6	842	0	-	0	842	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	43	0	-	1	44	0	-	0	44	0	-	0	44	0	-	0	44	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	23	0	115	0	23	0	117	0	23	0	117	0	23	0	117	0	23	0	117
Comb. T-R		0	-			0	-			0	-			0	-			0	-
WB Right	49	0	-	1	50	0	-	0	50	0	-	0	50	0	-	0	50	0	-
Comb. L-T-R -		1				1				1				1				1	
Crit. Volumes:		N-S:	1041			N-S:	1060			N-S:	1244			N-S:	1244			N-S:	1244
		E-W:	194			E-W:	197			E-W:	197			E-W:	203			E-W:	203
		SUM:	1235			SUM:	1258			SUM:	1441			SUM:	1448			SUM:	1448
No. of Phases:			3				3				3				3				3
Volume / Capacity:			0.867				0.882				1.011				1.016				1.016
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.767				0.782				0.911				0.916				0.916
Level of Service:			C				C				E				E				E

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 70% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.
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CRITICAL MOVEMENT ANALYSIS

N-S St: Lincoln Boulevard
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File Name: N:\2900\2072915\ICU\CMA2.WK4
Counts by: Transportation Studies, Inc.

Lincoln Boulevard @ Mindanao Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/13/2010
Date of Count: 2010
Projection Year: 2013

	2010 EXIST. TRAFFIC			2013 W/ AMBIENT GROWTH				2013 W/ OTHER PROJECTS				2013 W/ PROPOSED PROJECT				2013 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	159	1	159	3	162	1	162	14	176	1	176	0	176	1	176	0	176	1	176
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1450	3	483	26	1476	3	492	181	1657	3	552	2	1659	3	553	0	1659	3	553
Comb. T-R		0	-			0	-			0	-			0	-			0	-
NB Right	304	1	304	5	309	1	309	0	309	1	309	0	309	1	309	0	309	1	309
Comb. L-T-R -		0				0				0				0				0	
SB Left	107	1	107	2	109	1	109	0	109	1	109	0	109	1	109	0	109	1	109
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1173	2	402	21	1194	2	409	422	1616	2	550	4	1620	2	551	0	1620	2	551
Comb. T-R		1	402			1	409			1	550			1	551			1	551
SB Right	32	0	-	1	33	0	-	0	33	0	-	0	33	0	-	0	33	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left [1]	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
EB Thru	520	1	278	9	529	1	283	108	637	1	351	0	637	1	351	0	637	1	351
Comb. T-R		1	278			1	283			1	351			1	351			1	351
EB Right	36	0	-	1	37	0	-	27	64	0	-	0	64	0	-	0	64	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	252	2	139	5	257	2	141	3	260	2	143	0	260	2	143	0	260	2	143
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	384	1	223	7	391	1	227	42	433	1	248	1	434	1	249	0	434	1	249
Comb. T-R		1	223			1	227			1	248			1	249			1	249
WB Right	62	0	-	1	63	0	-	0	63	0	-	0	63	0	-	0	63	0	-
Comb. L-T-R -		0				0				0				0				0	
Crit. Volumes:		N-S:	590			N-S:	601			N-S:	725			N-S:	727			N-S:	727
		E-W:	417			E-W:	424			E-W:	493			E-W:	493			E-W:	493
		SUM:	1007			SUM:	1025			SUM:	1219			SUM:	1220			SUM:	1220
No. of Phases:			4				4				4				4				4
Volume / Capacity:			0.732				0.745				0.886				0.887				0.887
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.632				0.645				0.786				0.787				0.787
Level of Service:			B				B				C				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
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[1] Eastbound left-turns prohibited.

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CRITICAL MOVEMENT ANALYSIS

Lincoln Boulevard @ Mindanao Way
Peak Hour: PM
Annual Growth: 0.60%

N-S St: Lincoln Boulevard
E-W St: Mindanao Way
Project: Dry Stack Boat Storage, Marina Del Rey
File Name: N:\2900\2072915\ICU\CMA2.WK4
Counts by: Transportation Studies, Inc.

Date: 05/13/2010
Date of Count: 2010
Projection Year: 2013

	2010 EXIST. TRAFFIC			2013 W/ AMBIENT GROWTH				2013 W/ OTHER PROJECTS				2013 W/ PROPOSED PROJECT				2013 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	104	1	104	2	106	1	106	41	147	1	147	0	147	1	147	0	147	1	147
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1245	3	415	22	1267	3	422	439	1706	3	569	6	1712	3	571	0	1712	3	571
Comb. T-R		0	-			0	-			0	-			0	-			0	-
NB Right	297	1	297	5	302	1	302	2	304	1	304	0	304	1	304	0	304	1	304
Comb. L-T-R -		0				0				0				0				0	
SB Left	196	1	196	4	200	1	200	0	200	1	200	0	200	1	200	0	200	1	200
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1552	2	540	28	1580	2	550	321	1901	2	657	1	1902	2	657	0	1902	2	657
Comb. T-R		1	540			1	550			1	657			1	657			1	657
SB Right	68	0	-	1	69	0	-	0	69	0	-	0	69	0	-	0	69	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left [1]	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
EB Thru	538	1	341	10	548	1	347	63	611	1	400	1	612	1	400	0	612	1	400
Comb. T-R		1	341			1	347			1	400			1	400			1	400
EB Right	144	0	-	3	147	0	-	42	189	0	-	0	189	0	-	0	189	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	421	2	232	8	429	2	236	5	434	2	238	0	434	2	238	0	434	2	238
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	506	1	283	9	515	1	288	85	600	1	330	0	600	1	330	0	600	1	330
Comb. T-R		1	283			1	288			1	330			1	330			1	330
WB Right	59	0	-	1	60	0	-	0	60	0	-	0	60	0	-	0	60	0	-
Comb. L-T-R -		0				0				0				0				0	
Crit. Volumes:		N-S:	644			N-S:	656			N-S:	804			N-S:	804			N-S:	804
		E-W:	573			E-W:	583			E-W:	638			E-W:	639			E-W:	639
		SUM:	1217			SUM:	1238			SUM:	1442			SUM:	1443			SUM:	1443
No. of Phases:			4				4				4				4				4
Volume / Capacity:			0.885				0.901				1.049				1.049				1.049
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.785				0.801				0.949				0.949				0.949
Level of Service:			C				D				E				E				E

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 70% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.
[1] Eastbound left-turns prohibited.

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CRITICAL MOVEMENT ANALYSIS

N-S St:	Lincoln Boulevard
E-W St:	Bali Way
Project:	Dry Stack Boat Storage, Marina Del Rey
File Name:	N:\2900\2072915\ICU\CM3.WK4
Counts by:	Transportation Studies, Inc.

Lincoln Boulevard @ Bali Way
Peak Hour: AM
Annual Growth: 0.60%

Date: 05/13/2010
Date of Count: 2007
Projection Year: 2011

	2007 EXIST. TRAFFIC			2011 W/ AMBIENT GROWTH				2011 W/ OTHER PROJECTS				2011 W/ PROPOSED PROJECT				2011 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	125	1	125	3	128	1	128	6	134	1	134	0	134	1	134	0	134	1	134
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1437	2	491	34	1471	2	503	175	1646	2	561	2	1648	2	562	0	1648	2	562
Comb. T-R		1	491			1	503			1	561			1	562			1	562
NB Right	37	0	-	1	38	0	-	0	38	0	-	0	38	0	-	0	38	0	-
Comb. L-T-R -		0				0				0				0				0	
SB Left	30	1	30	1	31	1	31	0	31	1	31	0	31	1	31	0	31	1	31
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1183	2	451	28	1211	2	462	406	1617	2	604	4	1621	2	606	0	1621	2	606
Comb. T-R		1	451			1	462			1	604			1	606			1	606
SB Right	171	0	-	4	175	0	-	21	196	0	-	2	198	0	-	0	198	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left	240	1	168	6	246	1	172	28	274	1	192	1	275	1	192	0	275	1	192
Comb. L-T		1	75			1	77			1	85			1	86			1	86
EB Thru	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-
Comb. T-R		0	-			0	-			0	-			0	-			0	-
EB Right	42	0	-	1	43	0	-	16	59	0	-	0	59	0	-	0	59	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-	0	3	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	0	0	27	0	0	0	28	0	0	0	28	0	0	0	28	0	0	0	28
Comb. T-R		0	-			0	-			0	-			0	-			0	-
WB Right	24	0	-	1	25	0	-	0	25	0	-	0	25	0	-	0	25	0	-
Comb. L-T-R -		1				1				1				1				1	
Crit. Volumes:		N-S:	576			N-S:	590			N-S:	738			N-S:	740			N-S:	740
		E-W:	195			E-W:	200			E-W:	219			E-W:	220			E-W:	220
		SUM:	771			SUM:	790			SUM:	958			SUM:	960			SUM:	960
No. of Phases:			4				4				4				4				4
Volume / Capacity:			0.561				0.574				0.697				0.699				0.699
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.461				0.474				0.597				0.599				0.599
Level of Service:			A				A				A				A				A

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 70% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

C-17

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CRITICAL MOVEMENT ANALYSIS

N-S St:	Lincoln Boulevard	Lincoln Boulevard @ Bali Way		Date:	05/13/2010
E-W St:	Bali Way	Peak Hour:	PM	Date of Count:	2007
Project:	Dry Stack Boat Storage, Marina Del Rey	Annual Growth:	0.60%	Projection Year:	2011
File Name:	N:\2900\2072915\ICU\CM3.WK4				
Counts by:	Transportation Studies, Inc.				

	2007 EXIST. TRAFFIC			2011 W/ AMBIENT GROWTH				2011 W/ OTHER PROJECTS				2011 W/ PROPOSED PROJECT				2011 W/ MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	109	1	109	3	112	1	112	15	127	1	127	0	127	1	127	0	127	1	127
Comb. L-T		0	-			0	-			0	-			0	-			0	-
NB Thru	1346	2	454	32	1378	2	465	424	1802	2	607	6	1808	2	609	0	1808	2	609
Comb. T-R		1	454			1	465			1	607			1	609			1	609
NB Right	17	0	-	0	17	0	-	0	17	0	-	0	17	0	-	0	17	0	-
Comb. L-T-R -		0				0				0				0				0	
SB Left	48	1	48	1	49	1	49	0	49	1	49	0	49	1	49	0	49	1	49
Comb. L-T		0	-			0	-			0	-			0	-			0	-
SB Thru	1460	2	598	35	1495	2	612	311	1806	2	747	1	1807	2	747	0	1807	2	747
Comb. T-R		1	598			1	612			1	747			1	747			1	747
SB Right	334	0	-	8	342	0	-	93	435	0	-	0	435	0	-	0	435	0	-
Comb. L-T-R -		0				0				0				0				0	
EB Left	322	1	225	8	330	1	231	107	437	1	306	2	439	1	307	0	439	1	307
Comb. L-T		1	99			1	101			1	133			1	134			1	134
EB Thru	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Comb. T-R		0	-			0	-			0	-			0	-			0	-
EB Right	66	0	-	2	68	0	-	11	79	0	-	0	79	0	-	0	79	0	-
Comb. L-T-R -		0				0				0				0				0	
WB Left	7	0	-	0	7	0	-	6	13	0	-	0	13	0	-	0	13	0	-
Comb. L-T		0	-			0	-			0	-			0	-			0	-
WB Thru	2	0	46	0	2	0	47	0	2	0	53	0	2	0	53	0	2	0	53
Comb. T-R		0	-			0	-			0	-			0	-			0	-
WB Right	37	0	-	1	38	0	-	0	38	0	-	0	38	0	-	0	38	0	-
Comb. L-T-R -		1				1				1				1				1	
Crit. Volumes:		N-S:	707			N-S:	724			N-S:	874			N-S:	874			N-S:	874
		E-W:	271			E-W:	278			E-W:	359			E-W:	360			E-W:	360
		SUM:	978			SUM:	1002			SUM:	1232			SUM:	1234			SUM:	1234
No. of Phases:			4				4				4				4				4
Volume / Capacity:			0.712				0.729				0.896				0.898				0.898
ATSAC / ATCS Reduction			-0.100				-0.100				-0.100				-0.100				-0.100
Final Volume / Capacity			0.612				0.629				0.796				0.798				0.798
Level of Service:			B				B				C				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 70% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

APPENDIX D

TRIP GENERATION STUDY DATA

TABLE D-1
TRIP GENERATION STUDY
Wednesday September 26, 2007
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study					
	Number of People			Number of Cars		
	In	Out	Total	In	Out	Total
7:00 AM	5	0	5	5	0	5
7:15 AM	0	0	0	0	0	0
7:30 AM	2	0	2	2	0	2
7:45 AM	0	1	1	0	1	1
8:00 AM	0	0	0	0	0	0
8:15 AM	0	1	1	0	1	1
8:30 AM	0	0	0	0	0	0
8:45 AM	2	0	2	2	0	2
4:00 PM	0	0	0	0	0	0
4:15 PM	2	1	3	1	1	2
4:30 PM	0	0	0	0	0	0
4:45 PM	0	1	1	0	1	1
5:00 PM	0	6	6	0	3	3
5:15 PM	0	0	0	0	0	0
5:30 PM	1	0	1	1	0	1
5:45 PM	0	5	5	0	5	5
Total	**12**	**15**	**27**	**11**	**12**	**23**

TABLE D-2
TRIP GENERATION STUDY
Thursday September 27, 2007
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study					
	Number of People			Number of Cars		
	In	Out	Total	In	Out	Total
7:00 AM	6	0	6	6	0	6
7:15 AM	0	0	0	0	0	0
7:30 AM	2	0	2	2	0	2
7:45 AM	0	0	0	0	0	0
8:00 AM	1	1	2	1	1	2
8:15 AM	0	1	1	0	1	1
8:30 AM	2	0	2	2	0	2
8:45 AM	0	0	0	0	0	0
4:00 PM	1	0	1	1	0	1
4:15 PM	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0
5:00 PM	0	3	3	0	2	2
5:15 PM	0	1	1	0	1	1
5:30 PM	0	2	2	0	1	1
5:45 PM	0	5	5	0	5	5
Total	**12**	**13**	**25**	**12**	**11**	**23**

TABLE D-3
TRIP GENERATION STUDY
Friday September 28, 2007
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study					
	Number of People			Number of Cars		
	In	Out	Total	In	Out	Total
7:00 AM	5	0	5	5	0	5
7:15 AM	1	0	1	1	0	1
7:30 AM	0	0	0	0	0	0
7:45 AM	1	0	1	1	0	1
8:00 AM	5	1	6	3	1	4
8:15 AM	0	1	1	0	1	1
8:30 AM	1	1	2	1	1	2
8:45 AM	0	1	1	0	1	1
9:00 AM	0	1	1	0	1	1
9:15 AM	3	0	3	3	0	3
9:30 AM	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0
10:15 AM	2	0	2	2	0	2
10:30 AM	0	2	2	0	2	2
10:45 AM	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0
11:15 AM	1	0	1	1	0	1
11:30 AM	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0
12:00 PM	1	1	2	1	1	2
12:15 PM	0	0	0	0	0	0
12:30 PM	1	1	2	1	1	2
12:45 PM	0	0	0	0	0	0

TABLE D-3 (CONTINUED)
TRIP GENERATION STUDY
Friday September 28, 2007
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study					
	Number of People			Number of Cars		
	In	Out	Total	In	Out	Total
1:00 PM	0	1	1	0	1	1
1:15 PM	1	0	1	1	0	1
1:30 PM	2	0	2	2	0	2
1:45 PM	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0
2:15 PM	0	1	1	0	1	1
2:30 PM	1	2	3	1	2	3
2:45 PM	2	0	2	2	0	2
3:00 PM	0	2	2	0	2	2
3:15 PM	0	0	0	0	0	0
3:30 PM	1	2	3	1	2	3
3:45 PM	1	0	1	1	0	1
4:00 PM	1	2	3	1	1	2
4:15 PM	1	0	1	1	0	1
4:30 PM	1	0	1	1	0	1
4:45 PM	0	3	3	0	3	3
5:00 PM	0	1	1	0	1	1
5:15 PM	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0
5:45 PM	0	5	5	0	5	5
Total	**32**	**28**	**60**	**30**	**27**	**57**

TABLE D-4
TRIP GENERATION STUDY SUMMARY
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study								
	Wed Sept 26th		Thur Sept 27th		Fri Sept 28th		Highest In and Out Value		
	In	Out	In	Out	In	Out	In	Out	Total
7:00 AM	5	0	6	0	5	0	6	0	6
7:15 AM	0	0	0	0	1	0	1	0	1
7:30 AM	2	0	2	0	0	0	2	0	2
7:45 AM	0	1	0	0	1	0	1	1	2
8:00 AM	0	0	1	1	3	1	**3**	**1**	**4**
8:15 AM	0	1	0	1	0	1	**0**	**1**	**1**
8:30 AM	0	0	2	0	1	1	**2**	**1**	**3**
8:45 AM	2	0	0	0	0	1	**2**	**1**	**3**
9:00 AM	--	--	--	--	0	1	0	1	1
9:15 AM	--	--	--	--	3	0	3	0	3
9:30 AM	--	--	--	--	0	0	0	0	0
9:45 AM	--	--	--	--	0	0	0	0	0
10.00 AM	--	--	--	--	0	0	0	0	0
10:15 AM	--	--	--	--	2	0	2	0	2
10:30 AM	--	--	--	--	0	2	0	2	2
10:45 AM	--	--	--	--	0	0	0	0	0
11:00 AM	--	--	--	--	0	0	0	0	0
11:15 AM	--	--	--	--	1	0	1	0	1
11:30 AM	--	--	--	--	0	0	0	0	0
11:45 AM	--	--	--	--	0	0	0	0	0
12:00 PM	--	--	--	--	1	1	1	1	2
12:15 PM	--	--	--	--	0	0	0	0	0
12:30 PM	--	--	--	--	1	1	1	1	2
12:45 PM	--	--	--	--	0	0	0	0	0

TABLE D-4 (CONTINUED)
TRIP GENERATION STUDY
Dry Stack Boat Storage Facility, Newport Beach

Time Began	Trip Generation Study								
	Wed Sept 26th		Thur Sept 27th		Fri Sept 28th		Highest In and Out Value		
	In	Out	In	Out	In	Out	In	Out	Total
1:00 PM	--	--	--	--	0	1	0	1	1
1:15 PM	--	--	--	--	1	0	1	0	1
1:30 PM	--	--	--	--	2	0	2	0	2
1:45 PM	--	--	--	--	0	0	0	0	0
2:00 PM	--	--	--	--	0	0	0	0	0
2:15 PM	--	--	--	--	0	1	0	1	1
2:30 PM	--	--	--	--	1	2	1	2	3
2:45 PM	--	--	--	--	2	0	2	0	2
3:00 PM	--	--	--	--	0	2	0	2	2
3:15 PM	--	--	--	--	0	0	0	0	0
3:30 PM	--	--	--	--	1	2	1	2	3
3:45 PM	--	--	--	--	1	0	1	0	1
4:00 PM	0	0	1	0	1	1	1	1	2
4:15 PM	1	1	0	0	1	0	1	1	2
4:30 PM	0	0	0	0	1	0	1	0	1
4:45 PM	0	1	0	0	0	3	0	3	3
5:00 PM	0	3	0	2	0	1	**0**	**3**	**3**
5:15 PM	0	0	0	1	0	0	**0**	**1**	**1**
5:30 PM	1	0	0	1	0	0	**1**	**1**	**2**
5:45 PM	0	5	0	5	0	5	**0**	**5**	**5**
Total	**11**	**12**	**12**	**11**	**30**	**27**	**37**	**33**	**70**

Notes:
Trip generation study based on a facility with a total of 230 dry stack spaces.

Daily = $\frac{70 \text{ trips}}{230 \text{ spaces}}$ = 0.304 (1.10) ⟹ Daily = 0.334 $\frac{\text{daily trips}}{\text{dry stack space}}$

AM = $\frac{11 \text{ trips}}{230 \text{ spaces}}$ = 0.048 $\frac{\text{trips}}{\text{dry stack space}}$ (0.031 In / 0.017 Out)

PM = $\frac{11 \text{ trips}}{230 \text{ spaces}}$ = 0.048 $\frac{\text{trips}}{\text{dry stack space}}$ (0.004 In / 0.044 Out)

D-6

APPENDIX E

PROJECT DRIVEWAY INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DAK	Intersection	DwyAM-Tot
Agency/Co.	LLG ENGINEERS	Jurisdiction	Marina Del Rey
Date Performed	12/17/2007	Analysis Year	2013
Analysis Time Period	AM PEAK HOUR		

Project Description *Year 2013 Total Traffic Conditions*

East/West Street: *Fiji Way* | North/South Street: *Project Driveway*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	232			187	12
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	244	0	0	196	12
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration	LT	T			T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				6		0
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	6	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	0						6	
C (m) (veh/h)	1375						650	
v/c	0.00						0.01	
95% queue length	0.00						0.03	
Control Delay (s/veh)	7.6						10.6	
LOS	A						B	
Approach Delay (s/veh)	--	--				10.6		
Approach LOS	--	--				B		

 HCS+™ Version 5.21 Generated: 5/12/2010 5:45 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DAK	Intersection	DwyPM-Tot
Agency/Co	LLG ENGINEERS	Jurisdiction	Marina Del Rey
Date Performed	12/17/2007	Analysis Year	2013
Analysis Time Period	PM PEAK HOUR		

Project Description	Year 2013 Total Traffic Conditions		
East/West Street:	Fiji Way	North/South Street:	Project Driveway
Intersection Orientation:	East-West	Study Period (hrs):	0 25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	310			369	2
Peak-Hour Factor, PHF	0.95	0 95	0 95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	326	0	0	388	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration	LT	T			T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				16		0
Peak-Hour Factor, PHF	0.95	0.95	0 95	0.95	0.95	0 95
Hourly Flow Rate, HFR (veh/h)	0	0	0	16	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	0						16	
C (m) (veh/h)	1180						469	
v/c	0.00						0.03	
95% queue length	0.00						0.11	
Control Delay (s/veh)	8.1						12.9	
LOS	A						B	
Approach Delay (s/veh)	--	--				12.9		
Approach LOS	--	--				B		

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Appendix J2
Traffic Counts, prepared by Transportation Studies, Inc.

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

81

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: FIJI WAY

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

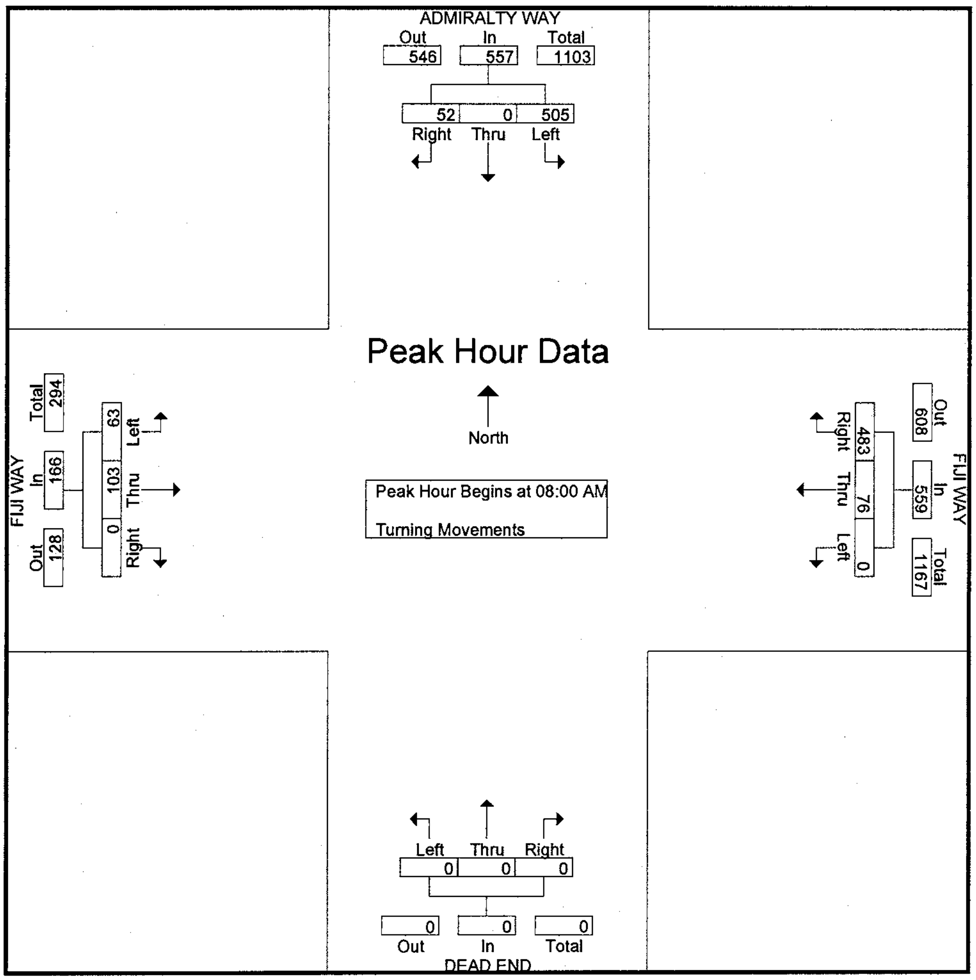
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			FIJI WAY Westbound			DEAD END Northbound			FIJI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	15	0	76	85	29	0	0	0	0	0	18	11	234
07:15 AM	20	0	84	126	24	0	0	0	0	0	20	11	285
07:30 AM	9	0	110	157	16	0	0	0	0	0	23	18	333
07:45 AM	10	0	114	155	20	0	0	0	0	0	20	15	334
Total	54	0	384	523	89	0	0	0	0	0	81	55	1186
08:00 AM	12	0	104	115	19	0	0	0	0	0	21	17	288
08:15 AM	15	0	112	117	17	0	0	0	0	0	23	14	298
08:30 AM	7	0	135	120	18	0	0	0	0	0	34	14	328
08:45 AM	18	0	154	131	22	0	0	0	0	0	25	18	368
Total	52	0	505	483	76	0	0	0	0	0	103	63	1282
*** BREAK ***													
04:00 PM	44	0	159	85	25	0	0	0	0	0	47	32	392
04:15 PM	24	0	170	93	24	0	0	0	0	0	42	19	372
04:30 PM	25	0	150	97	32	0	0	0	0	0	48	14	366
04:45 PM	22	0	184	103	39	0	0	0	0	0	41	14	403
Total	115	0	663	378	120	0	0	0	0	0	178	79	1533
05:00 PM	21	0	146	101	33	0	0	0	0	0	39	16	356
05:15 PM	29	0	193	117	34	0	0	0	0	0	32	13	418
05:30 PM	24	0	166	134	31	0	0	0	0	0	36	10	401
05:45 PM	27	0	196	121	45	0	0	0	0	0	38	15	442
Total	101	0	701	473	143	0	0	0	0	0	145	54	1617
Grand Total	322	0	2253	1857	428	0	0	0	0	0	507	251	5618
Apprch %	12.5	0	87.5	81.3	18.7	0	0	0	0	0	66.9	33.1	
Total %	5.7	0	40.1	33.1	7.6	0	0	0	0	0	9	4.5	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 2

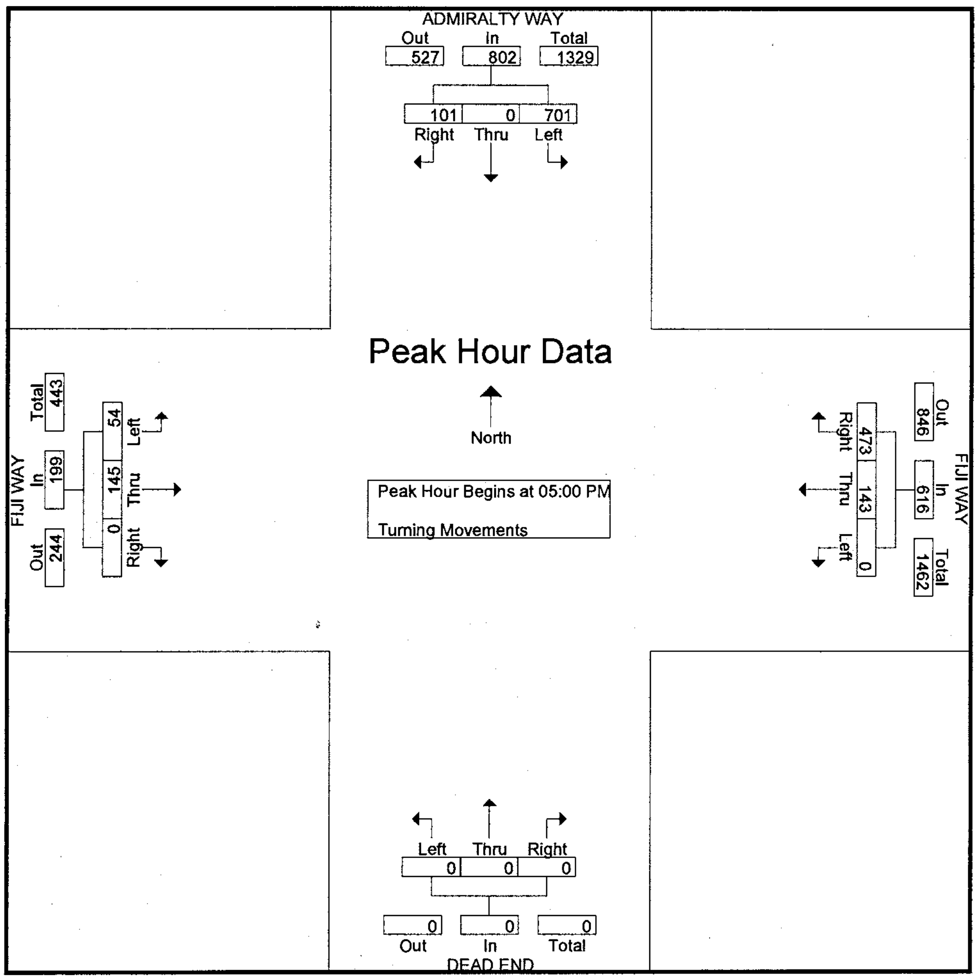
	ADMIRALTY WAY Southbound				FIJI WAY Westbound				DEAD END Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	12	0	104	116	115	19	0	134	0	0	0	0	0	21	17	38	288
08:15 AM	15	0	112	127	117	17	0	134	0	0	0	0	0	23	14	37	298
08:30 AM	7	0	135	142	120	18	0	138	0	0	0	0	0	**34**	14	**48**	328
08:45 AM	**18**	0	**154**	**172**	**131**	**22**	0	**153**	0	0	0	0	0	25	**18**	43	**368**
Total Volume	52	0	505	557	483	76	0	559	0	0	0	0	0	103	63	166	1282
% App. Total	9.3	0	90.7		86.4	13.6	0		0	0	0		0	62	38		
PHF	.722	.000	.820	.810	.922	.864	.000	.913	.000	.000	.000	.000	.000	.757	.875	.865	.871



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003005
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				FIJI WAY Westbound				DEAD END Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	21	0	146	167	101	33	0	134	0	0	0	0	0	**39**	**16**	**55**	356
05:15 PM	**29**	0	193	222	117	34	0	151	0	0	0	0	0	32	13	45	418
05:30 PM	24	0	166	190	**134**	31	0	165	0	0	0	0	0	36	10	46	401
05:45 PM	27	0	**196**	**223**	121	**45**	0	**166**	0	0	0	0	0	38	15	53	**442**
Total Volume	101	0	701	802	473	143	0	616	0	0	0	0	0	145	54	199	1617
% App. Total	12.6	0	87.4		76.8	23.2	0		0	0	0		0	72.9	27.1		
PHF	.871	.000	.894	.899	.882	.794	.000	.928	.000	.000	.000	.000	.000	.929	.844	.905	.915



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: MINDANAO WAY

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

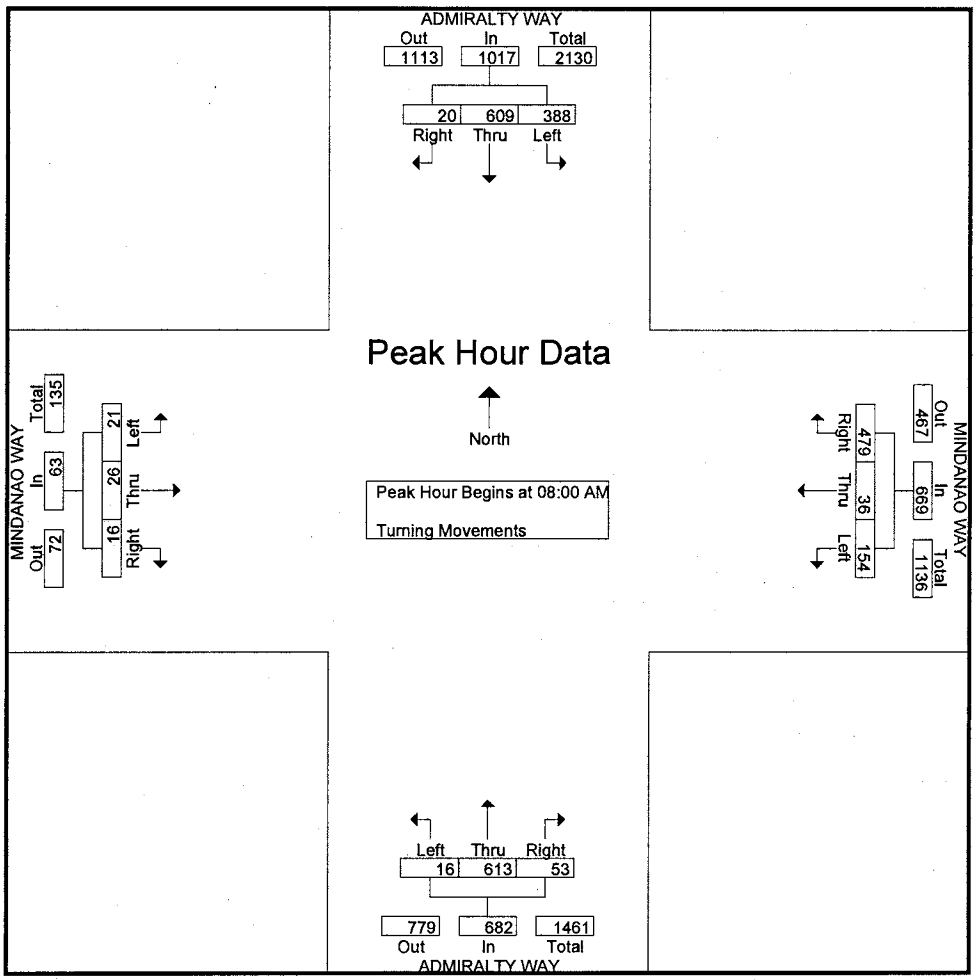
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			MINDANAO WAY Westbound			ADMIRALTY WAY Northbound			MINDANAO WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	3	93	79	52	6	18	3	79	6	2	1	1	343
07:15 AM	1	100	56	75	8	27	16	120	3	1	7	4	418
07:30 AM	3	125	87	88	5	18	4	160	3	2	3	2	500
07:45 AM	4	149	98	119	8	24	5	180	6	7	9	2	611
Total	11	467	320	334	27	87	28	539	18	12	20	9	1872
08:00 AM	4	134	79	113	8	33	8	145	3	2	15	8	552
08:15 AM	3	143	122	132	7	44	18	151	3	3	2	6	634
08:30 AM	7	125	90	118	8	38	10	126	5	4	2	6	539
08:45 AM	6	207	97	116	13	39	17	191	5	7	7	1	706
Total	20	609	388	479	36	154	53	613	16	16	26	21	2431
*** BREAK ***													
04:00 PM	5	184	69	103	8	58	30	153	5	3	7	7	632
04:15 PM	6	192	66	112	10	90	46	147	2	1	12	1	685
04:30 PM	4	164	60	109	8	78	39	135	6	7	7	5	622
04:45 PM	1	197	92	116	9	84	32	143	9	6	5	7	701
Total	16	737	287	440	35	310	147	578	22	17	31	20	2640
05:00 PM	5	158	72	115	12	69	25	154	4	5	6	5	630
05:15 PM	6	230	98	121	12	66	26	172	2	4	13	3	753
05:30 PM	2	229	78	115	2	89	29	185	4	6	6	4	749
05:45 PM	6	207	73	124	8	67	32	136	4	6	8	2	673
Total	19	824	321	475	34	291	112	647	14	21	33	14	2805
Grand Total	66	2637	1316	1728	132	842	340	2377	70	66	110	64	9748
Apprch %	1.6	65.6	32.7	64	4.9	31.2	12.2	85.3	2.5	27.5	45.8	26.7	
Total %	0.7	27.1	13.5	17.7	1.4	8.6	3.5	24.4	0.7	0.7	1.1	0.7	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

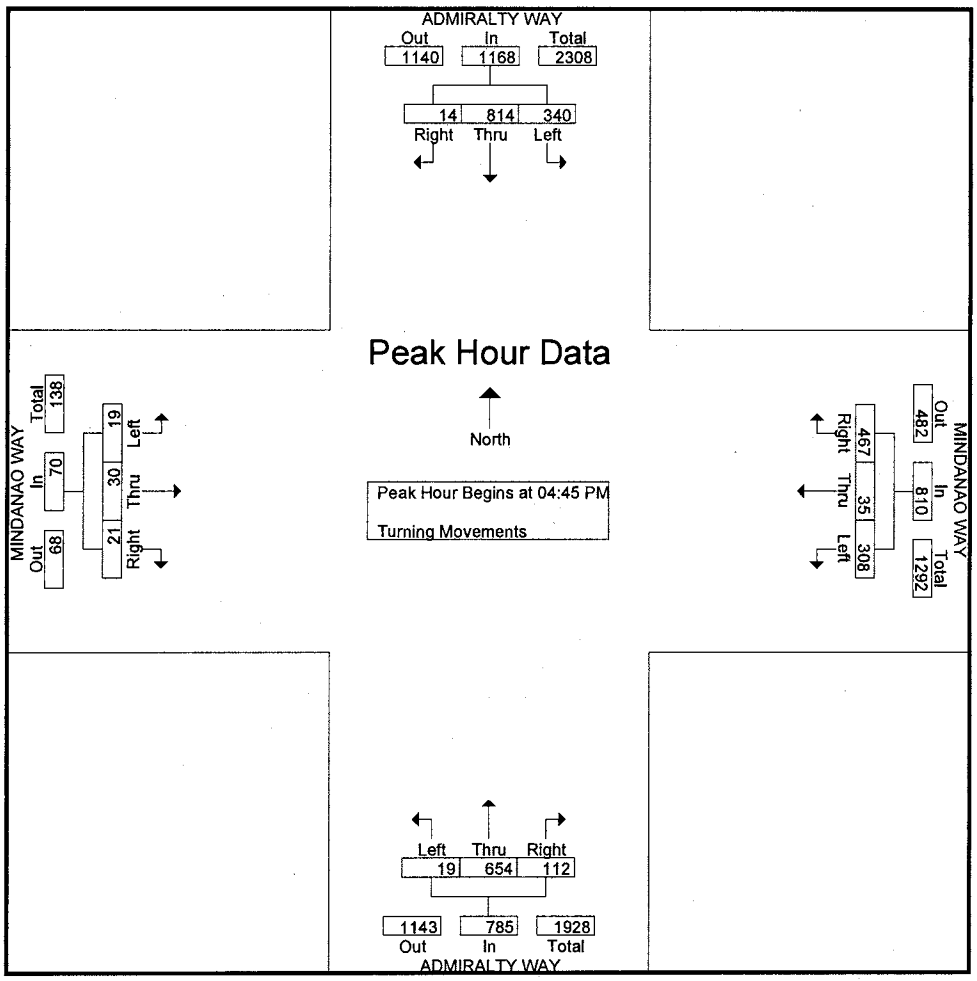
	ADMIRALTY WAY Southbound				MINDANAO WAY Westbound				ADMIRALTY WAY Northbound				MINDANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	134	79	217	113	8	33	154	8	145	3	156	2	15	8	25	552
08:15 AM	3	143	122	268	132	7	44	183	18	151	3	172	3	2	6	11	634
08:30 AM	7	125	90	222	118	8	38	164	10	126	5	141	4	2	6	12	539
08:45 AM	6	207	97	310	116	13	39	168	17	191	5	213	7	7	1	15	706
Total Volume	20	609	388	1017	479	36	154	669	53	613	16	682	16	26	21	63	2431
% App. Total	2	59.9	38.2		71.6	5.4	23		7.8	89.9	2.3		25.4	41.3	33.3		
PHF	.714	.736	.795	.820	.907	.692	.875	.914	.736	.802	.800	.800	.571	.433	.656	.630	.861



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003006
Site Code : 00000559
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				MINDANAO WAY Westbound				ADMIRALTY WAY Northbound				MINDANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	197	92	290	116	9	84	**209**	**32**	143	**9**	184	**6**	5	**7**	18	701
05:00 PM	5	158	72	235	115	**12**	69	196	25	154	4	183	5	6	5	16	630
05:15 PM	**6**	**230**	**98**	**334**	**121**	12	66	199	26	172	2	200	4	**13**	3	**20**	**753**
05:30 PM	2	229	78	309	115	2	**89**	206	29	**185**	4	**218**	6	6	4	16	749
Total Volume	14	814	340	1168	467	35	308	810	112	654	19	785	21	30	19	70	2833
% App. Total	1.2	69.7	29.1		57.7	4.3	38		14.3	83.3	2.4		30	42.9	27.1		
PHF	.583	.885	.867	.874	.965	.729	.865	.969	.875	.884	.528	.900	.875	.577	.679	.875	.941



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

#3

City: MARINA DEL REY
N-S Direction: ADMIRALTY WAY
E-W Direction: BALI WAY

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

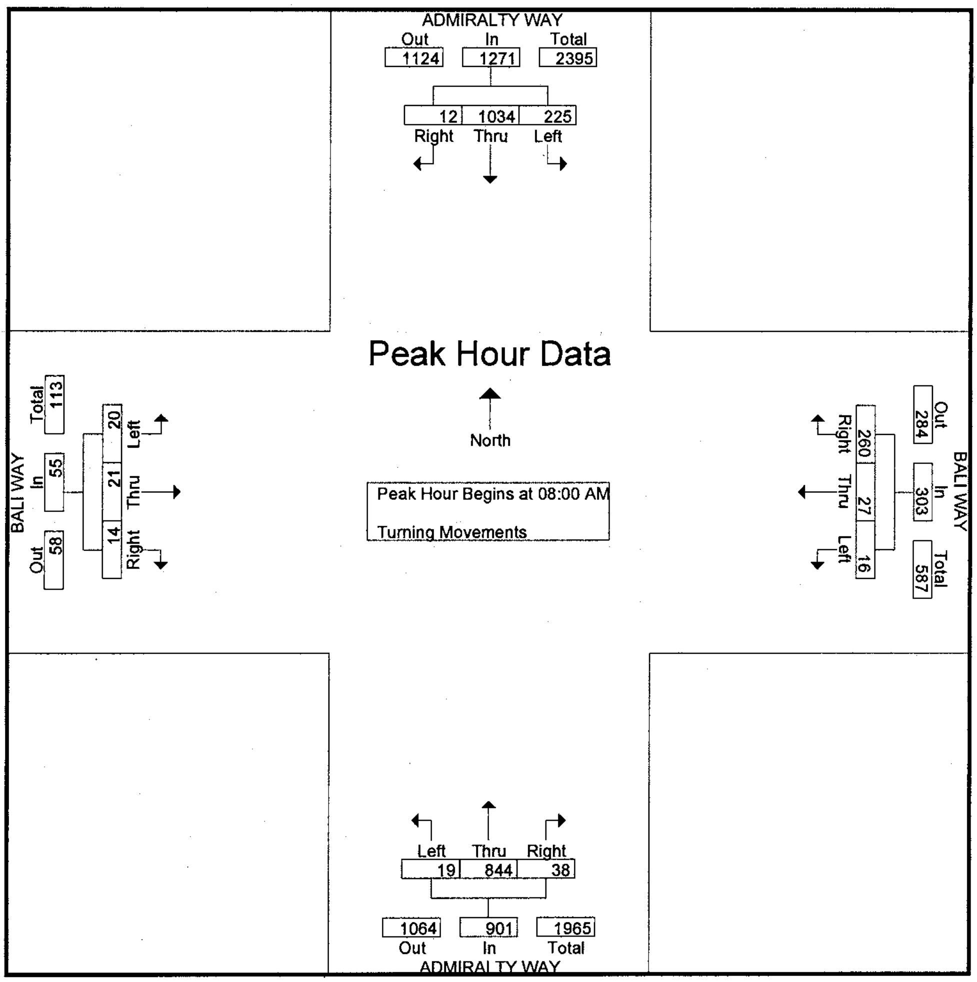
Groups Printed- Turning Movements

	ADMIRALTY WAY Southbound			BALI WAY Westbound			ADMIRALTY WAY Northbound			BALI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	166	27	30	6	1	3	117	2	2	2	0	356
07:15 AM	0	177	49	53	1	0	8	173	2	0	4	1	468
07:30 AM	0	202	43	50	2	4	2	250	5	1	4	3	566
07:45 AM	1	235	47	69	5	1	7	240	5	2	6	3	621
Total	1	780	166	202	14	6	20	780	14	5	16	7	2011
08:00 AM	2	247	44	65	5	4	8	208	1	0	5	3	592
08:15 AM	3	250	70	76	9	3	7	236	2	5	9	9	679
08:30 AM	1	243	50	59	6	2	12	181	2	3	3	5	567
08:45 AM	6	294	61	60	7	7	11	219	14	6	4	3	692
Total	12	1034	225	260	27	16	38	844	19	14	21	20	2530
*** BREAK ***													
04:00 PM	5	233	48	94	8	8	29	230	6	9	2	5	677
04:15 PM	4	223	52	90	10	8	34	206	2	3	6	5	643
04:30 PM	2	225	57	87	8	9	24	191	7	6	4	7	627
04:45 PM	3	257	51	91	4	3	32	211	5	3	7	2	669
Total	14	938	208	362	30	28	119	838	20	21	19	19	2616
05:00 PM	2	228	64	81	9	7	30	238	0	5	16	3	683
05:15 PM	3	283	50	117	4	8	28	260	4	6	3	2	768
05:30 PM	3	286	64	99	7	2	33	246	6	3	4	2	755
05:45 PM	3	266	80	108	2	10	25	230	1	2	2	5	734
Total	11	1063	258	405	22	27	116	974	11	16	25	12	2940
Grand Total	38	3815	857	1229	93	77	293	3436	64	56	81	58	10097
Apprch %	0.8	81	18.2	87.8	6.6	5.5	7.7	90.6	1.7	28.7	41.5	29.7	
Total %	0.4	37.8	8.5	12.2	0.9	0.8	2.9	34	0.6	0.6	0.8	0.6	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 2

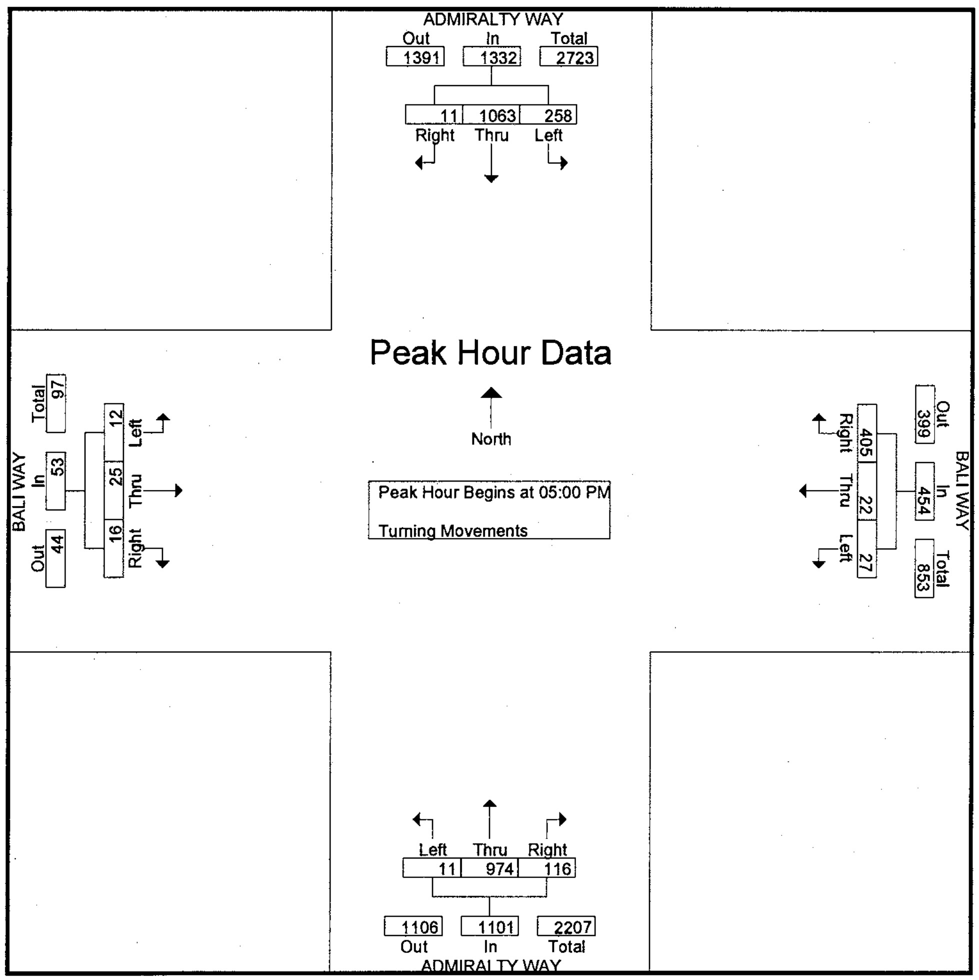
	ADMIRALTY WAY Southbound				BALI WAY Westbound				ADMIRALTY WAY Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	247	**44**	293	65	5	4	74	8	208	1	217	0	5	3	8	592
08:15 AM	3	250	**70**	323	**76**	**9**	3	**88**	7	**236**	2	**245**	5	**9**	**9**	**23**	679
08:30 AM	1	243	50	294	59	6	2	67	**12**	181	2	195	3	3	5	11	567
08:45 AM	**6**	**294**	61	**361**	60	7	**7**	74	11	219	**14**	244	**6**	4	3	13	**692**
Total Volume	12	1034	225	1271	260	27	16	303	38	844	19	901	14	21	20	55	2530
% App. Total	0.9	81.4	17.7		85.8	8.9	5.3		4.2	93.7	2.1		25.5	38.2	36.4		
PHF	.500	.879	.804	.880	.855	.750	.571	.861	.792	.894	.339	.919	.583	.583	.556	.598	.914



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003007
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	ADMIRALTY WAY Southbound				BALI WAY Westbound				ADMIRALTY WAY Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	228	64	294	81	**9**	7	97	30	238	0	268	5	**16**	3	**24**	683
05:15 PM	**3**	283	50	336	**117**	4	8	**129**	28	**260**	**4**	**292**	**6**	3	2	11	**768**
05:30 PM	3	**286**	64	**353**	99	7	2	108	**33**	246	**6**	285	3	4	2	9	755
05:45 PM	3	266	**80**	349	108	2	**10**	120	25	230	1	256	2	2	**5**	9	734
Total Volume	11	1063	258	1332	405	22	27	454	116	974	11	1101	16	25	12	53	2940
% App. Total	0.8	79.8	19.4		89.2	4.8	5.9		10.5	88.5	1		30.2	47.2	22.6		
PHF	.917	.929	.806	.943	.865	.611	.675	.880	.879	.937	.458	.943	.667	.391	.600	.552	.957



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

#4

City: MARINA DEL REY
N-S Direction: LINCOLN BOULEVARD
E-W Direction: FIJI WAY

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

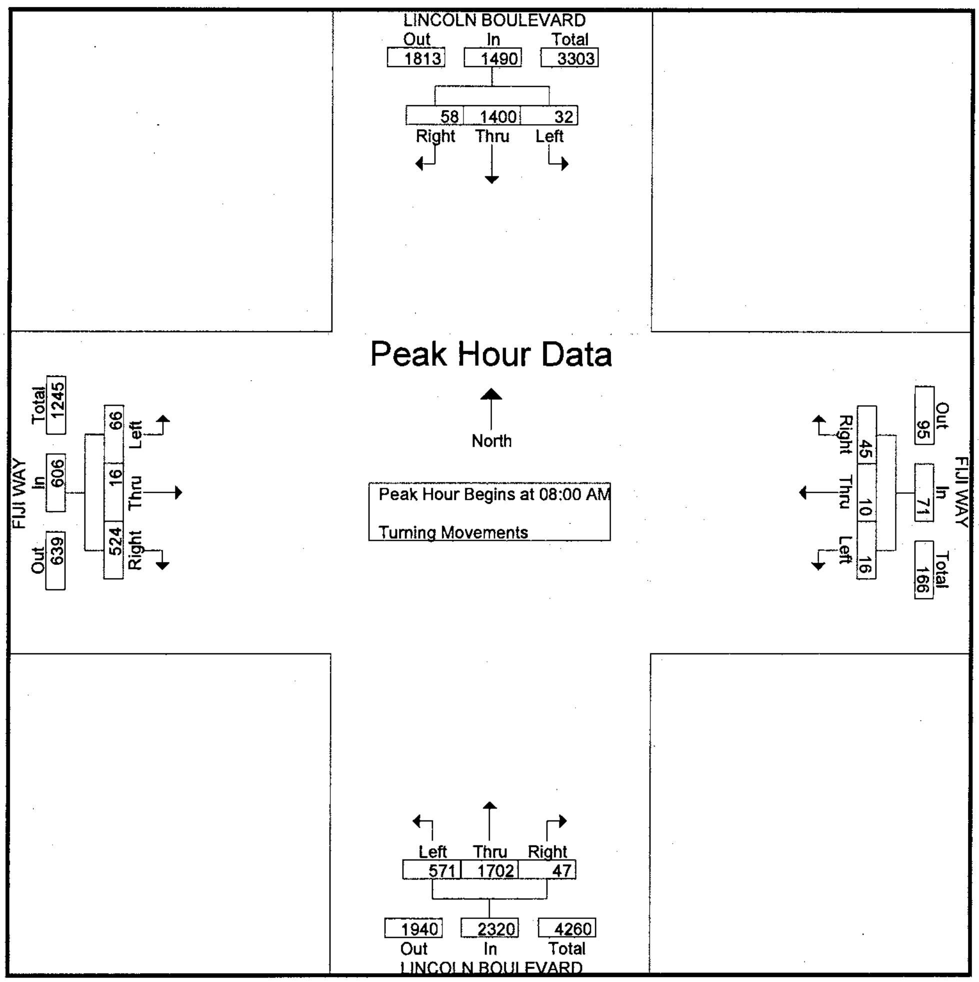
Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			FIJI WAY Westbound			LINCOLN BOULEVARD Northbound			FIJI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	15	175	5	6	2	5	4	325	91	86	4	19	737
07:15 AM	12	194	2	10	3	2	8	405	146	97	3	13	895
07:30 AM	7	258	6	5	3	3	8	471	175	102	4	16	1058
07:45 AM	12	280	7	12	3	3	13	476	184	123	2	20	1135
Total	46	907	20	33	11	13	33	1677	596	408	13	68	3825
08:00 AM	10	300	6	10	0	2	3	407	133	111	8	23	1013
08:15 AM	13	373	10	6	4	4	12	456	144	108	3	16	1149
08:30 AM	13	351	10	15	1	2	9	424	146	141	1	18	1131
08:45 AM	22	376	6	14	5	8	23	415	148	164	4	9	1194
Total	58	1400	32	45	10	16	47	1702	571	524	16	66	4487
*** BREAK ***													
04:00 PM	20	454	10	8	7	5	6	349	119	153	2	27	1160
04:15 PM	31	453	6	9	2	10	7	304	107	176	4	27	1136
04:30 PM	19	429	9	9	6	9	4	334	139	173	2	26	1159
04:45 PM	35	483	13	17	10	9	4	298	152	180	9	26	1236
Total	105	1819	38	43	25	33	21	1285	517	682	17	106	4691
05:00 PM	38	500	9	8	5	12	11	319	142	156	2	26	1228
05:15 PM	29	474	8	13	5	12	7	357	159	187	5	16	1272
05:30 PM	30	517	9	17	9	10	12	372	161	186	3	21	1347
05:45 PM	36	490	11	11	4	9	12	355	150	192	6	16	1292
Total	133	1981	37	49	23	43	42	1403	612	721	16	79	5139
Grand Total	342	6107	127	170	69	105	143	6067	2296	2335	62	319	18142
Apprch %	5.2	92.9	1.9	49.4	20.1	30.5	1.7	71.3	27	86	2.3	11.7	
Total %	1.9	33.7	0.7	0.9	0.4	0.6	0.8	33.4	12.7	12.9	0.3	1.8	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

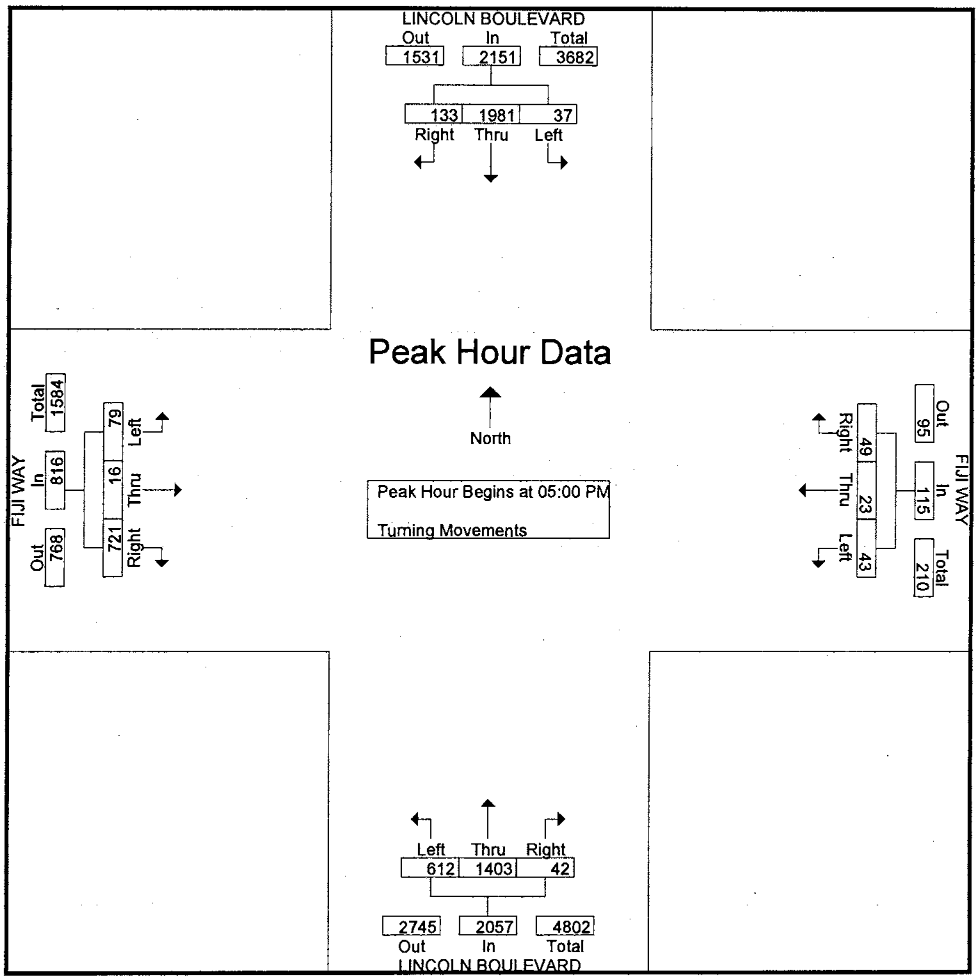
	LINCOLN BOULEVARD Southbound				FIJI WAY Westbound				LINCOLN BOULEVARD Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	10	300	6	316	10	0	2	12	3	407	133	543	111	**8**	**23**	142	1013
08:15 AM	13	373	**10**	396	6	4	4	14	12	**456**	144	**612**	108	3	16	127	1149
08:30 AM	13	351	10	374	**15**	1	2	18	9	424	146	579	141	1	18	160	1131
08:45 AM	**22**	**376**	6	**404**	14	**5**	**8**	**27**	**23**	415	**148**	586	**164**	4	9	**177**	**1194**
Total Volume	58	1400	32	1490	45	10	16	71	47	1702	571	2320	524	16	66	606	4487
% App. Total	3.9	94	2.1		63.4	14.1	22.5		2	73.4	24.6		86.5	2.6	10.9		
PHF	.659	.931	.800	.922	.750	.500	.500	.657	.511	.933	.965	.948	.799	.500	.717	.856	.939



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003002
Site Code : 00000559
Start Date : 3/11/2010
Page No : 3

	LINCOLN BOULEVARD Southbound				FIJI WAY Westbound				LINCOLN BOULEVARD Northbound				FIJI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**38**	500	9	547	8	5	**12**	25	11	319	142	472	156	2	**26**	184	1228
05:15 PM	29	474	8	511	13	5	12	30	7	357	159	523	187	5	16	208	1272
05:30 PM	30	**517**	9	**556**	**17**	**9**	10	**36**	**12**	**372**	**161**	**545**	186	3	21	210	**1347**
05:45 PM	36	490	**11**	537	11	4	9	24	12	355	150	517	**192**	**6**	16	**214**	1292
Total Volume	133	1981	37	2151	49	23	43	115	42	1403	612	2057	721	16	79	816	5139
% App. Total	6.2	92.1	1.7		42.6	20	37.4		2	68.2	29.8		88.4	2	9.7		
PHF	.875	.958	.841	.967	.721	.639	.896	.799	.875	.943	.950	.944	.939	.667	.760	.953	.954



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

City: MARINA DEL REY
N-S Direction: LINCOLN BOULEVARD
E-W Direction: MINDANAO WAY

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 1

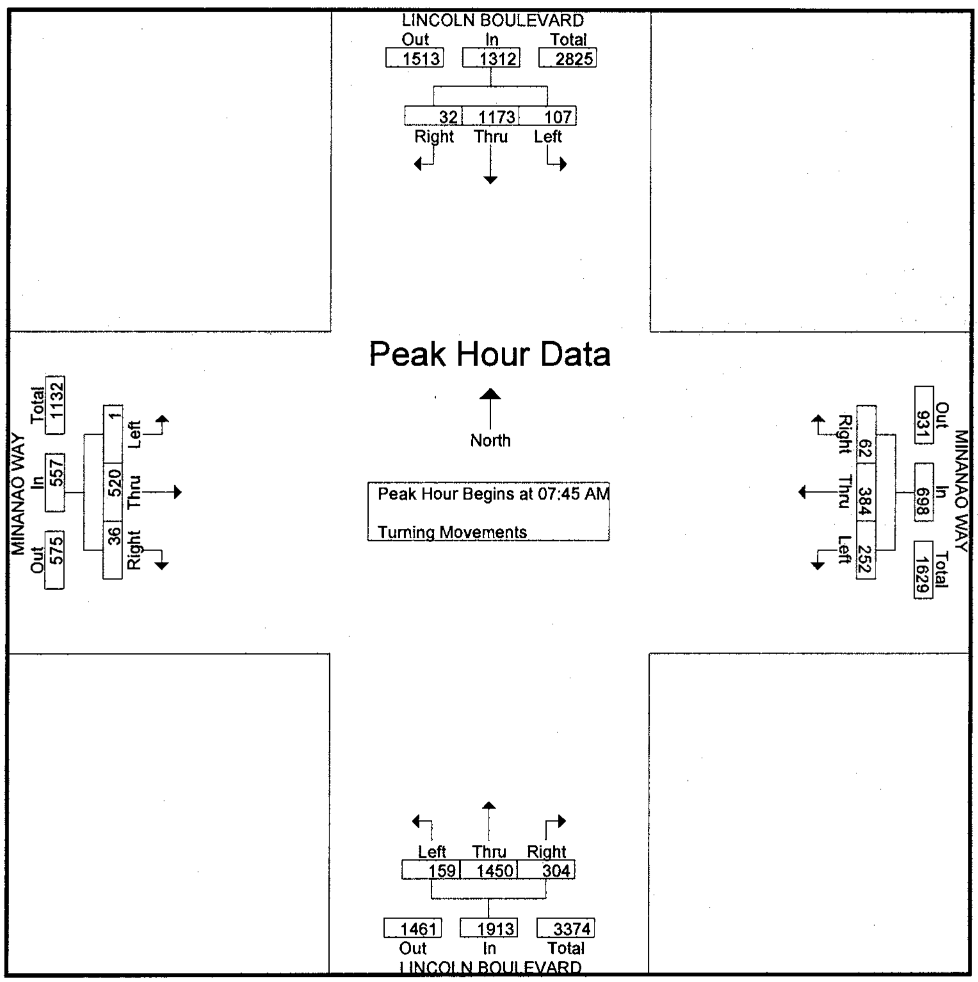
Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			MINANAO WAY Westbound			LINCOLN BOULEVARD Northbound			MINANAO WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	4	124	14	14	79	24	43	307	12	4	85	0	710
07:15 AM	4	184	14	12	68	28	66	424	17	9	71	0	897
07:30 AM	6	188	16	13	87	51	61	402	30	7	103	0	964
07:45 AM	8	290	24	11	90	63	73	418	39	11	134	0	1161
Total	22	786	68	50	324	166	243	1551	98	31	393	0	3732
08:00 AM	9	287	23	14	102	61	93	329	39	10	115	0	1082
08:15 AM	9	325	25	16	87	62	62	355	37	9	128	0	1115
08:30 AM	6	271	35	21	105	66	76	348	44	6	143	1	1122
08:45 AM	6	327	19	24	97	59	71	356	33	7	145	0	1144
Total	30	1210	102	75	391	248	302	1388	153	32	531	1	4463
*** BREAK ***													
04:00 PM	18	354	27	14	111	85	61	260	16	26	118	0	1090
04:15 PM	28	409	36	9	115	83	60	282	20	33	112	0	1187
04:30 PM	19	391	37	19	108	104	66	311	28	42	112	3	1240
04:45 PM	19	429	29	22	129	73	79	269	20	32	125	0	1226
Total	84	1583	129	64	463	345	266	1122	84	133	467	3	4743
05:00 PM	23	360	41	9	116	105	72	284	16	34	120	2	1182
05:15 PM	16	420	61	13	133	100	90	339	22	34	140	1	1369
05:30 PM	13	388	43	20	121	118	66	340	33	43	145	0	1330
05:45 PM	16	384	51	17	136	98	69	282	33	33	133	0	1252
Total	68	1552	196	59	506	421	297	1245	104	144	538	3	5133
Grand Total	204	5131	495	248	1684	1180	1108	5306	439	340	1929	7	18071
Apprch %	3.5	88	8.5	8	54.1	37.9	16.2	77.4	6.4	14.9	84.8	0.3	
Total %	1.1	28.4	2.7	1.4	9.3	6.5	6.1	29.4	2.4	1.9	10.7	0	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 2

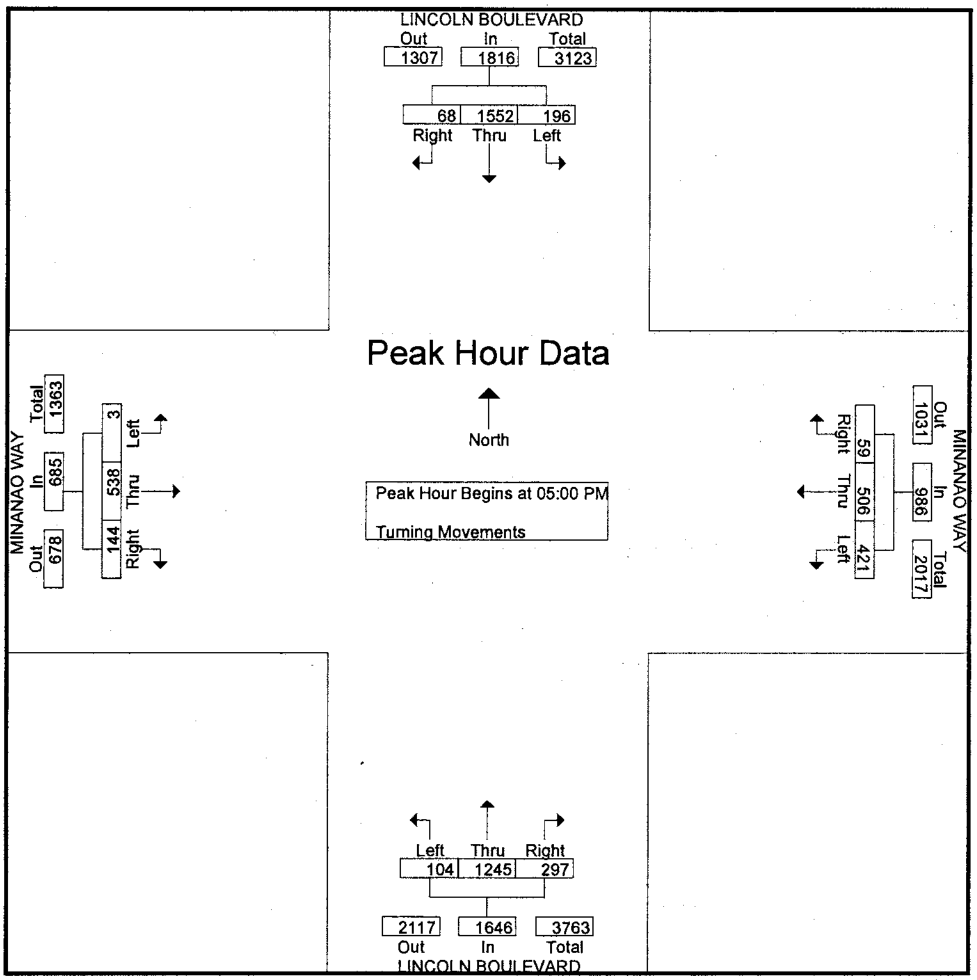
	LINCOLN BOULEVARD Southbound				MINANAO WAY Westbound				LINCOLN BOULEVARD Northbound				MINANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	8	290	24	322	11	90	63	164	73	**418**	39	**530**	**11**	134	0	145	**1161**
08:00 AM	**9**	287	23	319	14	102	61	177	**93**	329	39	461	10	115	0	125	1082
08:15 AM	9	**325**	25	**359**	16	87	62	165	62	355	37	454	9	128	0	137	1115
08:30 AM	6	271	**35**	312	**21**	**105**	**66**	**192**	76	348	**44**	468	6	**143**	**1**	**150**	1122
Total Volume	32	1173	107	1312	62	384	252	698	304	1450	159	1913	36	520	1	557	4480
% App. Total	2.4	89.4	8.2		8.9	55	36.1		15.9	75.8	8.3		6.5	93.4	0.2		
PHF	.889	.902	.764	.914	.738	.914	.955	.909	.817	.867	.903	.902	.818	.909	.250	.928	.965



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003003
Site Code : 00000559
Start Date : 3/11/2010
Page No : 3

	LINCOLN BOULEVARD Southbound				MINANAO WAY Westbound				LINCOLN BOULEVARD Northbound				MINANAO WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**23**	360	41	**424**	9	116	105	230	72	284	16	372	34	120	**2**	156	1182
05:15 PM	16	**420**	**61**	**497**	13	133	100	246	**90**	339	22	**451**	34	140	1	175	**1369**
05:30 PM	13	388	43	444	**20**	121	**118**	**259**	66	**340**	**33**	439	**43**	**145**	0	**188**	1330
05:45 PM	16	384	51	451	17	**136**	98	251	69	282	33	384	33	133	0	166	1252
Total Volume	68	1552	196	1816	59	506	421	986	297	1245	104	1646	144	538	3	685	5133
% App. Total	3.7	85.5	10.8		6	51.3	42.7		18	75.6	6.3		21	78.5	0.4		
PHF	.739	.924	.803	.913	.738	.930	.892	.952	.825	.915	.788	.912	.837	.928	.375	.911	.937



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City: MARINA DEL REY
N-S Direction: LINCOLN BOULEVARD
E-W Direction: BALI WAY

File Name : H1003004
Site Code : 00003871
Start Date : 3/11/2010
Page No : 1

Groups Printed- Turning Movements

	LINCOLN BOULEVARD Southbound			BALI WAY Westbound			LINCOLN BOULEVARD Northbound			BALI WAY Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	22	126	2	1	0	1	7	360	14	9	1	36	579
07:15 AM	23	169	2	3	0	1	4	412	27	6	1	39	687
07:30 AM	36	218	1	4	0	0	2	449	28	4	1	44	787
07:45 AM	37	282	3	5	0	2	8	354	29	11	0	53	784
Total	118	795	8	13	0	4	21	1575	98	30	3	172	2837
08:00 AM	37	280	2	3	0	0	7	340	45	8	1	57	780
08:15 AM	46	279	9	7	0	1	12	353	30	18	1	58	814
08:30 AM	46	324	10	5	0	2	9	404	27	9	0	58	894
08:45 AM	42	300	9	9	0	0	9	340	23	7	1	67	807
Total	171	1183	30	24	0	3	37	1437	125	42	3	240	3295
*** BREAK ***													
04:00 PM	67	341	11	18	1	3	5	268	27	20	1	70	832
04:15 PM	79	405	3	7	1	4	4	308	24	11	0	74	920
04:30 PM	88	379	14	8	0	1	7	338	22	14	1	70	942
04:45 PM	88	394	7	12	1	4	4	317	23	20	1	77	948
Total	322	1519	35	45	3	12	20	1231	96	65	3	291	3642
05:00 PM	94	336	8	10	0	2	3	283	18	18	1	81	854
05:15 PM	73	371	17	11	2	1	6	346	30	22	1	89	969
05:30 PM	83	371	12	11	0	1	1	364	27	11	0	86	967
05:45 PM	84	382	11	5	0	3	7	353	34	15	0	66	960
Total	334	1460	48	37	2	7	17	1346	109	66	2	322	3750
Grand Total	945	4957	121	119	5	26	95	5589	428	203	11	1025	13524
Apprch %	15.7	82.3	2	79.3	3.3	17.3	1.6	91.4	7	16.4	0.9	82.7	
Total %	7	36.7	0.9	0.9	0	0.2	0.7	41.3	3.2	1.5	0.1	7.6	

Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003004
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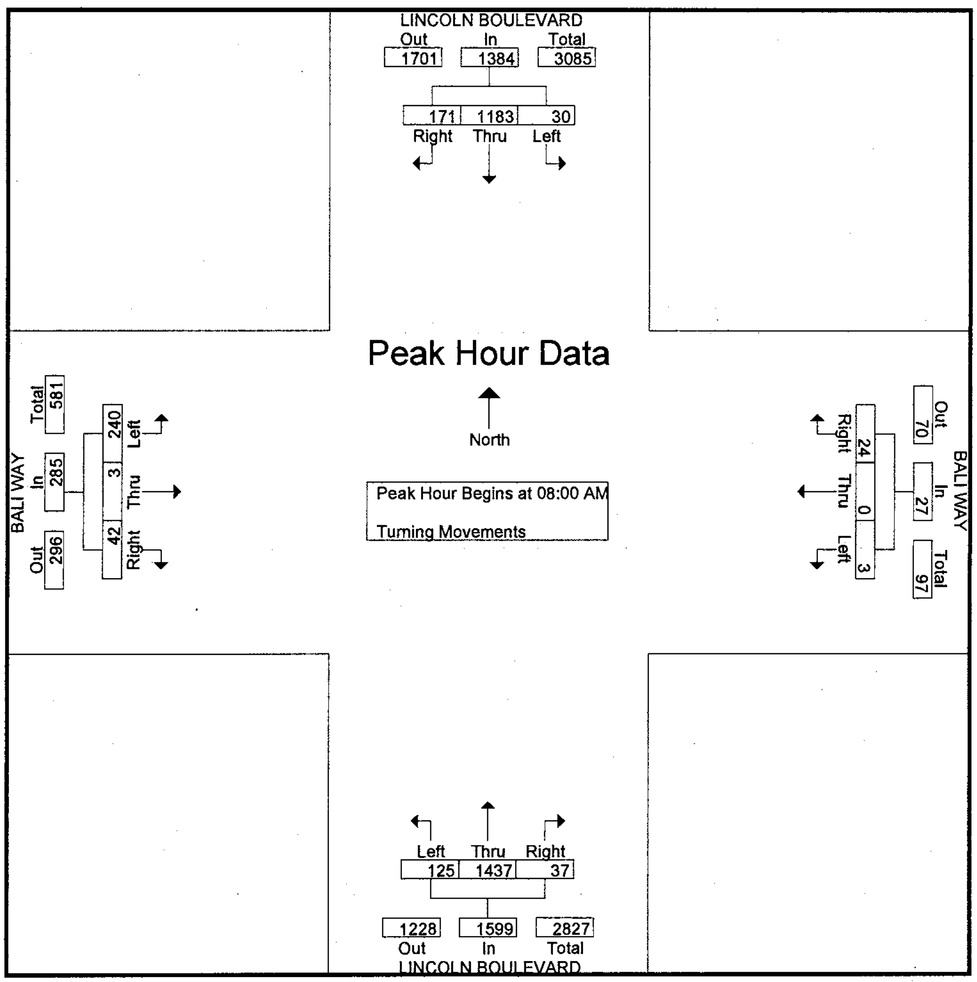
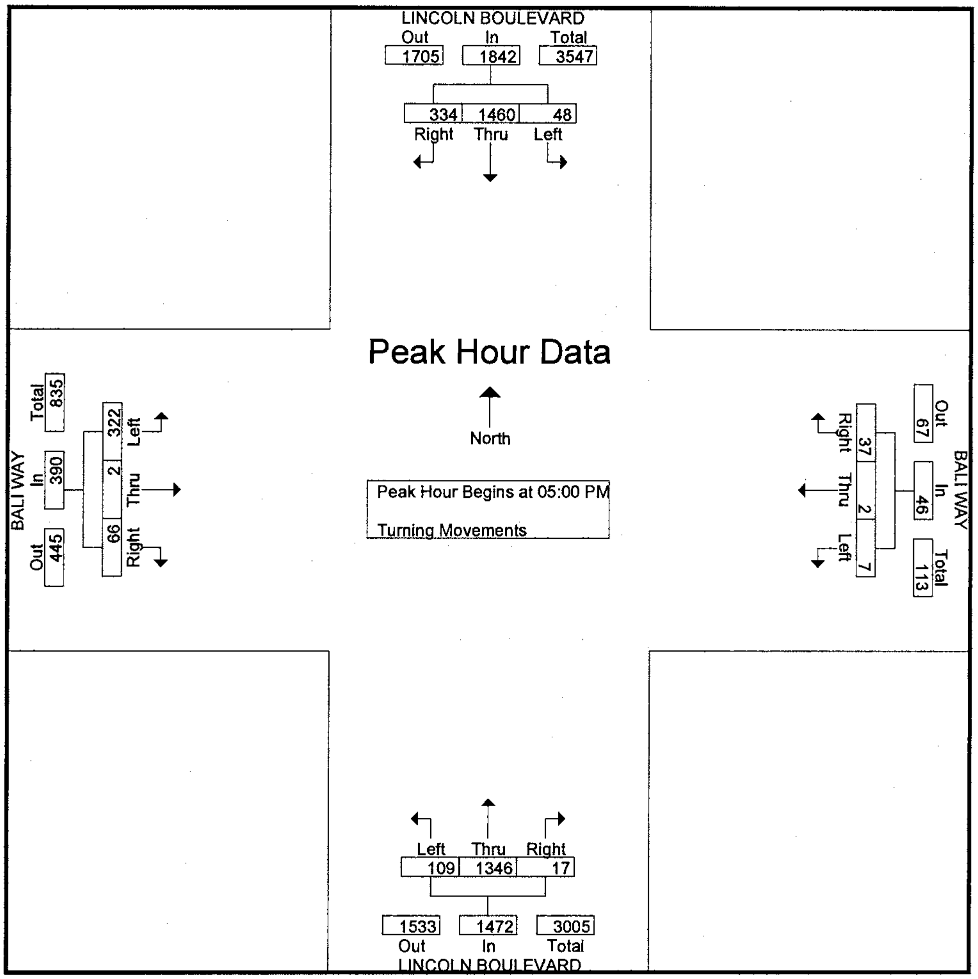
	LINCOLN BOULEVARD Southbound				BALI WAY Westbound				LINCOLN BOULEVARD Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	37	280	2	319	3	0	0	3	7	340	**45**	392	8	1	57	66	780
08:15 AM	**46**	279	9	334	7	0	1	8	**12**	353	30	395	**18**	1	58	**77**	814
08:30 AM	46	**324**	**10**	**380**	5	0	**2**	7	9	**404**	27	**440**	9	0	58	67	**894**
08:45 AM	42	300	9	351	**9**	0	0	**9**	9	340	23	372	7	1	**67**	75	807
Total Volume	171	1183	30	1384	24	0	3	27	37	1437	125	1599	42	3	240	285	3295
% App. Total	12.4	85.5	2.2		88.9	0	11.1		2.3	89.9	7.8		14.7	1.1	84.2		
PHF	.929	.913	.750	.911	.667	.000	.375	.750	.771	.889	.694	.909	.583	.750	.896	.925	.921



Transportation Studies, Inc.
2680 Walnut Avenue, Suite C
Tustin, CA. 92780

File Name : H1003004
Site Code : 00003871
Start Date : 3/11/2010
Page No : 3

	LINCOLN BOULEVARD Southbound				BALI WAY Westbound				LINCOLN BOULEVARD Northbound				BALI WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**94**	336	8	438	10	0	2	12	3	283	18	304	18	**1**	81	100	854
05:15 PM	73	371	**17**	461	**11**	**2**	1	**14**	6	346	30	382	**22**	**1**	**89**	**112**	**969**
05:30 PM	83	371	12	466	11	0	1	12	1	**364**	27	392	11	0	86	97	967
05:45 PM	84	**382**	11	**477**	5	0	**3**	8	**7**	353	**34**	**394**	15	0	66	81	960
Total Volume	334	1460	48	1842	37	2	7	46	17	1346	109	1472	66	2	322	390	3750
% App. Total	18.1	79.3	2.6		80.4	4.3	15.2		1.2	91.4	7.4		16.9	0.5	82.6		
PHF	.888	.955	.706	.965	.841	.250	.583	.821	.607	.924	.801	.934	.750	.500	.904	.871	.967



Appendix J3
Parking Utilization Assessment dated July 30, 2007 prepared by Hirsch Green Transportation Consulting, Inc.

HIRSCH
GREEN
Hirsch/Green Transportation Consulting, Inc.

July 30, 2007

Mr. Michael Pashaie
Gold Coast Village, LLC
c/o Pacific Ocean Management, LLC
13575 Mindanao Way
Marina del Rey, California 90292

RE: Parking Utilization Assessment for Parcel 52 Parking Lot in Marina del Rey

Dear Michael,

This letter documents our investigation into the typical utilization of the surface parking lot located on Parcel 52 in Marina del Rey, identified as "Lot 52" for purposes of this assessment. Observations were conducted during a normal summer weekday and a summer Saturday to determine several factors regarding the use of this lot, including the total number of parking spaces occupied at various times of the day, as well as an identification of the likely destinations or type of users parking in the lot. The methodology and results of our parking utilization assessments are summarized in the following pages.

Background

Lot 52 is located along the north side of Fiji Way, approximately 750 feet west of the intersection of Fiji Way and Admiralty Way. The lot provides a total of approximately 237 non-restricted parking spaces for use by various destinations within and near the Marina. Lot 52 is located immediately adjacent to the west of the Los Angeles County Department of Beaches and Harbors Administration Annex office complex and County Sheriff's Boatwright facility located on Parcel GG, and is used as employee and visitor parking for this use. Additionally, Lot 52 currently provides parking for Dock 52, which is used by several charter boat companies to load and unload passengers for fishing, dinner, and other local cruises, although the Dock 52 charter operations and associated charter patron parking spaces at Lot 52 are proposed to be relocated to the redeveloped Fisherman's Village commercial anchorage. Further, although not located directly adjacent to any specific destination uses, Lot 52 serves as a "free" public parking facility for visitors to the Marina, and is used by bicyclists and others wishing to walk through or otherwise enjoy the Marina. Finally, although posted with signage indicating "No Overnight Camping or Sleeping", County Department of Beaches and Harbors' parking management staff reports that "overnight *parking*" is not specifically prohibited, and a number of vehicles do utilize the lot for free "long-term" parking throughout the day. A number of recreation vehicles are also evident on Lot 52 throughout the day, with some persons actually living out of these vehicles; these vehicles are not allowed to park overnight, and are required to exit the lot between 2:00 and 6:00 AM, although they return to the lot as soon as allowed.

13333 Ventura Boulevard, Suite 204 Sherman Oaks, California 91423 Phone 818.325.0530 Fax 818.325.0534

Parking Utilization Determination Methodology

Based on these general use types, for purposes of this assessment, the Lot 52 user types were categorized as "County Office" (including both employees and visitors), "Dock 52" users, and "Public" parking. A separate category within the "Public" parking use was identified for vehicles parked overnight in the lot. Determination of the parking use type was based on observations conducted for the weekday (Thursday) between approximately 7:00 AM and 7:00 PM, and between about 10:00 AM and 9:00 PM on Saturday. Weather conditions during these surveyed days were typical of summer in Marina del Rey, with seasonably warm temperatures, no precipitation, and variable cloudiness/marine layer overcast skies, and as such, were not expected to significantly effect the operations or utilizations of Lot 52.

Vehicles entering the lot were counted, and the occupants observed to determine their destinations after exiting their vehicles; for example, persons walking into the "County Office" facilities were assigned to that use, persons walking to the Dock 52 facilities were considered to be associated with that specific use, and persons walking or biking away from Lot 52 not destined for either of these prior uses were considered to be general "Public" parking use. As described earlier, some vehicles were parked in the lot prior to the 7:00 AM start time of the counts, and many were observed to remain unmoved throughout the entire count period. These vehicles were identified as "Long-Term/Overnight Parking" vehicles, and since they were not observed to exhibit any direct connection with specific Marina-related uses, they were not considered to be "public" parking for the purposes of this assessment. Total parking utilization for Lot 52 was counted hourly; the number of "Long-Term/Overnight Parking" vehicles was estimated at various times of the day by subtracting the sum of the observed entry-vehicle observations from the total parking utilization. The parking utilization data and evaluation worksheets are contained in attachments to this letter. These worksheets identify the total use, individual component use, and percentage of total use for each component on an hourly basis for each of the surveyed days.

Weekday Utilization

The results of our investigations indicate that, during a typical summer weekday, a maximum of approximately 209 parking spaces, or about 88 percent of the total 237 spaces, were occupied in Lot 52, with this peak activity occurring between about 2:00 and 3:00 PM; utilization of the parking lot was relatively high throughout the afternoon, with between about 170 to 207 spaces occupied between 1:00 and 5:00 PM. Parking during the other observed weekday times was generally about 110 vehicles or less, with the minimum observed occupancy of the lot at about 84 vehicles, at 8:00 PM. However, as further described below, a substantial percentage of the parking utilization of Lot 52 was not related to actual "Marina-related" use of Lot 52.

A number of vehicles observed to use Lot 52 appear to exhibit “Long-Term/Overnight Parking” characteristics. Based on the parking counts conducted for this investigation, a peak of approximately 76 vehicles were observed to be parked in Lot 52 at the beginning of the count period, with many of these vehicles remaining in the same parking space throughout the entire 7:00 AM to 7:00 PM count period. Some of these vehicles did leave later during the day, and the number of vehicles diminished to approximately 46 vehicles by 5:00 PM, although subsequent weekday evening observations of Lot 52 (not documented for this assessment) indicate that this number remained reasonably constant over the next several hours, with a total of approximately 45 vehicles still parked in the lot until well after 11:00 PM. As noted earlier, discussions with Los Angeles County Department of Beaches and Harbors staff provide anecdotal evidence that, since "overnight parking" is not prohibited, most of these vehicles remain in Lot 52 for considerable periods of time. In addition to and separate from the “Overnight Parking” vehicles noted above, which consist primarily of typical automobiles, motorcycles, and pickups, a number of recreation vehicles or pickups fitted with “camper” shells also utilize Lot 52 for long-term parking, although they are prohibited from remaining in the lot continuously throughout the night. Recreation vehicles are required to leave Lot 52 between 2:00 and 6:00 AM, although most simply drive around during this period and return to the lot at 6:00 AM, thereby technically avoiding the overnight “camping” prohibition.

A review of the parking survey data would suggest that a number of “Long-Term/Overnight Parking” vehicles enter the lot during the late evening and early morning hours, increasing late night parking use from about 45 vehicles after about 7:00 PM to approximately 70 to 80 vehicles utilizing Lot 52 by the 7:00 AM survey start time. The total number of “Long-Term/Overnight Parking” vehicles represented between approximately 60 and 84 percent of the total parking utilization of Lot 52 prior to about 1:00 PM; between 30 and 35 percent of the total between 1:00 and 5:00 PM, and 45 to 55 percent of the total after 5:00 PM.

Of the remaining parking utilization of Lot 52, a maximum of about 17 vehicles were observed to be associated with the County Offices. This number was variable throughout the typical workday period (8:00 AM to 5:00 PM), but ranged from about eight (8) vehicles to the peak observed 17 vehicles between 8:00 AM and 3:00 PM; parking utilization decreased after 3:00 PM, with only 2 County Office-related vehicles in Lot 52 at 5:00 PM.

“Dock 52” parking was relatively light during the weekday morning hours, although as expected, utilization increased during the early afternoon and evening periods as dinner and entertainment cruises began. Peak weekday “Dock 52” parking occurred between about 1:00 and 2:00 PM, with a total of 83 vehicles, although utilization for this use ranged between about 70 and the maximum observed 83 vehicles between 1:00 and 5:00 PM. “Dock 52” weekday parking diminished significantly after 5:00 PM, with the number of vehicles decreasing to 37 by 6:00 PM, and dropping further to an evening low of 15 vehicles at 7:00 PM.

Finally, the “Public Parking” use of the lot, determination of which was the prime focus of this assessment, was observed to exhibit a peak utilization of approximately 55 spaces on the surveyed weekday, during the mid-afternoon period from 2:00 to 3:00 PM. “Public Parking” utilization varied throughout the weekday, but was generally about 30 vehicles or more between 10:00 AM and 5:00 PM. Although “Public Parking” use decreased after 5:00 PM, it did rebound slightly after 6:00 PM, but did not return to the midday utilization levels. “Public Parking” use represented a maximum of 25 to 26 percent of the total actual parking utilization during the weekday survey period, and about 23 percent of the total available Lot 52 parking supply.

Saturday Utilization

On Saturday, the total parking utilization of Lot 52 was substantially lower than on the observed weekday, with a maximum of only 156 spaces, or only 66 percent of the total available spaces, between about 3:00 and 4:00 PM, although the overall utilization “curve” was much more constant than during the weekday observations, with total parking throughout the day ranging between about 110 vehicles (at 6:00 PM) to the maximum observed 156 spaces.

Like the weekday conditions, the number of “Long-Term/Overnight Parking” vehicles was quite high in relation to the total number of spaces utilized; the initial “Long-Term/Overnight Parking” use on Saturday morning was 99 vehicles, which diminished to a low of about 51 spaces from 6:00 PM until the end of the observation period. Additionally, since the actual number of “Long-Term/Overnight Parking” vehicles was generally higher than observed during the weekday counts, and the total number of vehicles in Lot 52 was less than during the weekday observations, the percentage of “Long-Term/Overnight Parking” vehicles in relation to the total use of the lot was consistently higher than during the weekday, ranging from a maximum of 78 percent at 10:00 AM to a low of about 38 percent at 8:00 PM. Again, these vehicles do not exhibit any direct connection to Marina-related parking, and therefore are not considered to be “Public Parking” in this regard.

The remainder of the Lot 52 Saturday parking use was primarily associated with the “Dock 52” and “Public Parking” uses; as expected, the number of County Office-related vehicles was substantially reduced from the weekday observations, with a maximum of eight (8) vehicles observed at about 11:00 AM; after about 2:00 PM, parking for this use was nominal.

During the Saturday observations, “Dock 52” parking utilization of the lot began to show noticeable use (more than 10 vehicles) beginning at about 12:00 noon, and generally ranged from about 15 to 25 vehicles until about 6:00 PM. Parking for this use began increasing to a maximum of 58 spaces at about 8:00 PM, and remained at or near this level through the end of the count period.

On Saturday, the “Public Parking” use of the lot was similar to that observed during the weekday counts, with a peak utilization of approximately 63 spaces during the mid-afternoon period from 3:00 to 4:00 PM. “Public Parking” utilization throughout the observed Saturday varied throughout the day, and was higher during the 2:00 to 4:00 PM period (44 vehicles at 2:00 PM, the maximum 63 vehicles at 3:00 PM), although parking use generally ranged from about 25 to 35 vehicles during the afternoon and evening period (between about 4:00 and the end of the survey period at 9:00 PM). The “Public Parking” use represented a maximum of approximately 40 percent of the total actual parking utilization during the weekday survey period, although it accounted for only about 27 percent of the total available Lot 52 parking supply of 237 spaces.

Summary and Conclusions

To summarize the results of the Lot 52 parking utilization surveys, the data indicates that the most significant use of the available parking on both weekdays and weekends occurs due to “Long-Term/Overnight Parking” activity, with a minimum of approximately 45 vehicles parked overnight or utilizing the lot for long-term non-Marina parking in a manner inconsistent with its intended purpose. Additionally, a number of persons actually live out of their recreation vehicles parked in Lot 52, and these vehicles are parked in the lot throughout the day. Although the County prohibits overnight camping and sleeping at Lot 52, and these vehicles must leave the site between 2:00 and 6:00 AM, they return as soon as allowed. Therefore, even though both the long-term and recreation vehicle parking are technically a “public” uses of the lot, these vehicles do not exhibit any direct connection to “Marina-related” activities, and are not considered as viable from a “Public Parking” assessment standpoint; rather, these users are “opportunists” seizing the rare opportunity for free long-term daytime or overnight parking, or in effect living from their recreational vehicles in a public parking lot simply because of a lack of current regulation providing the County with enforceable measures to prevent or minimize this unintended use of the Lot 52 public parking spaces.

Actual “Marina-related” utilization of Lot 52 included true “Public Parking”, “County Office”, and “Dock 52” charter boat parking. The parking surveys show that on weekdays, the “Dock 52” use is the most heavily utilized, with approximately 83 vehicles during the mid-afternoon period; Saturday use of the “Dock 52” parking was somewhat lower, with a peak use of about 58 vehicles, and occurred during the late evening (after about 8:00 PM).

The “County Office” use of Lot 52 was relatively minor during the weekday and weekend observations, with between 10 and 20 vehicles using the parking lot throughout the weekday workday period (8:00 AM to 5:00 PM), while on Saturday, the utilization drops as would be expected, with a maximum of fewer than 10 vehicles during the mid-morning, and only nominal use after about 2:00 PM.

Finally, the true “Public Parking” use of Lot 52 ranged from a maximum of about 55 vehicles during the weekday mid-afternoon periods to about 63 vehicles on a Saturday mid-afternoon. “Public Parking” use on this lot was relatively stable during the weekday observations, with generally between 20 and 30 vehicles parked between the hours of 9:00 AM and 7:00 PM, except for the mid-afternoon peak from about 1:00 to 3:00 PM, when about 50 to 55 vehicles were observed. On weekends, “Public Parking” was relatively light during the morning period, and then generally ranged between 25 and 35 vehicles throughout the remainder of the day (1:00 to 9:00 PM), except during the mid-afternoon peak from 2:00 to 4:00 PM, when the number of vehicles increased to between 45 and the maximum 63 vehicles.

Therefore, based on these observations, it can be concluded that the typical maximum “Public Parking” utilization of Lot 52 is fewer than 70 vehicles at all times, while “Dock 52” charter fishing boat and dining cruise activities account for a maximum of about 85 vehicles during the peak times. “County Office” use is relatively light, with a maximum of fewer than 20 vehicles at any time. “Long-Term/Overnight Parking” exhibits the highest use of the lot, with approximately 100 vehicles observed.

Please review the above and attached information regarding the empirical parking utilization assessments for Lot 52, and feel free to call me if you have any questions or comments.

Sincerely,

Ron Hirsch, P.E.
Principal

Cc: Aaron Clark, Armbruster & Goldsmith

Margaret Partridge
Associate Planner
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, CA. 92656

Re: Proposed Dry-Stack Boat Storage Facility at 13483 Fiji Way, Marina Del Rey, CA 90292

Dear Margaret.

I have reviewed the Initial Study and Notice of Preparation letters on the above stated project. Listed below are our Service Availability/Capacity Comments.

- Waste Management Inc. currently supplies no service to the location listed above.
- We are able to provide construction debris boxes and Construction and Demolition (C&D) debris recycling services on the project, throughout the duration.
- I am not aware of any negative impact on current or future expansion plans.
- Waste Management Inc. is able to provide hazardous material hauling and disposal for any hazardous materials generated on-site. Upon completion of the project we will provide permanent trash and recycling services to the tenants and occupants of the facilities, such as pick up waste from the visitor lounge and Sheriff/Lifeguard facility.

If you have any questions or comments regarding this Will Serve Letter, contact me at 818-581-9799. Thank you.

Sincerely,

Vince Sabotin
Outside Construction Sales Manager
Waste Management Inc.

Appendix K –
Responses to Services Letters

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL℠ Company

1721 22nd Street
Santa Monica, CA 90404

February 5, 2009

CAA Planning
Margaret Partridge
85 Argonaut, Suite 220
Also Viejo, CA 92656

SUBJECT: 13483 Fiji Way, Marina Del Rey

Dear Ms Partridge:

This is to advise that the subject property is located within the service territory of the Southern California Edison Company (SCE) and that the electrical loads of the project are within parameters of projected load growth, which SCE is planning to meet in this area.

Our total system demand is expected to continue to increase annually; however, excluding any unforeseen problems, our plans for new distribution resources indicate that our ability to serve all customers' loads in accordance with our rules and tariffs will be adequate during the decade of the 2000's.

Current conservation efforts on the part of SCE customers have resulted in energy savings. Optimization of conservation measures in this project will contribute to the overall energy savings goal.

If you have any additional questions, please feel free to call me at 310-315-3214.

Sincerely

Marcus Bland
Service Planner

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

March 3, 2009

IN REPLY PLEASE
REFER TO FILE: SM-1

Ms. Shawna L. Schaffner
Chief Executive Officer
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, CA 92656-4105

Attention Ms. Margret Partridge

Dear Ms. Schaffner:

SERVICE REQUEST AND PROJECT REVIEW FOR A PROPOSED DRY-STACK BOAT STORAGE FACILITY, NOTICE OF PREPARATION FOR AN ENVIRONMENTAL IMPACT REPORT

As requested, we have reviewed the subject document and offer the following answers to your questionnaire:

1. **Please describe the existing sewer services provided to the project site.**

   The County of Los Angeles Department of Public Works Marina Sewer Maintenance District is responsible for the operation and maintenance of the local sewers within the unincorporated Marina del Rey. As-built sewer plans of existing sewer system facilities within the projects' vicinity may be obtained at our Survey Division's 4th Floor Public Counter located at 900 South Fremont Avenue, Alhambra, California 91803.

2. **Are upgrades or improvements to the existing service system required in order to adequately serve the proposed project? If so, what mitigation measures would the District implement for the project?**

   The Environmental Impact Report should discuss the collection and disposal of the wastewater that would be generated by the proposed project, especially its potential impact on the available capacity in the existing local sewer lines for both peak dry- and wet-weather flows pursuant with the Statewide General Waste Discharge Requirements (Order No. 2006-0003). The Environmental Impact Report should also discuss the impact of the proposed project on the existing local and City of Los Angeles' trunk sewer facilities.

Based on the recent Marina Sewer Improvement Study conducted by our Design Division, the existing sewer is able to accommodate the proposed project.

3. **Will the project negatively impact any current or future facility expansion plans for the project area?**

   Please see Question 2 above.

4. **Please provide any additional water service related issues, questions, and comments pertaining to this project.**

   Water services for the project area are provided by the Marina del Rey Water System. Please contact Mr. Ramy Gindi of our Waterworks Division at (626) 300-3349 or at rgindi@dpw.lacounty.gov for comments pertaining to this project.

If you have any questions, please contact Ms. May Hong at (626) 300-3388 or at mahong@dpw.lacounty.gov.

Very truly yours,

GAIL FARBER
Director of Public Works

Manuel Del Real

MANUEL DEL REAL
Assistant Deputy Director
Sewer Maintenance Division

MH:kk
1634

B & E ENGINEERS
an NJS Company

CIVIL ENGINEERING · SURVEYING · LAND PLANNING

24 W. Saint Joseph Street
Arcadia, CA 91007-2854

Tel: (626) 446-4449
Fax: (626) 446-6566

August 10, 2007

Mr. Tom Hogan
Pacific Marina Development, Inc.
3416 Via Lido, Suite G
Newport Beach, CA 92663

Subject: Boat Central Facility
Lease Parcels 52R and GG, Marina Del Rey
Oil and Gas Wells

Dear Sir,

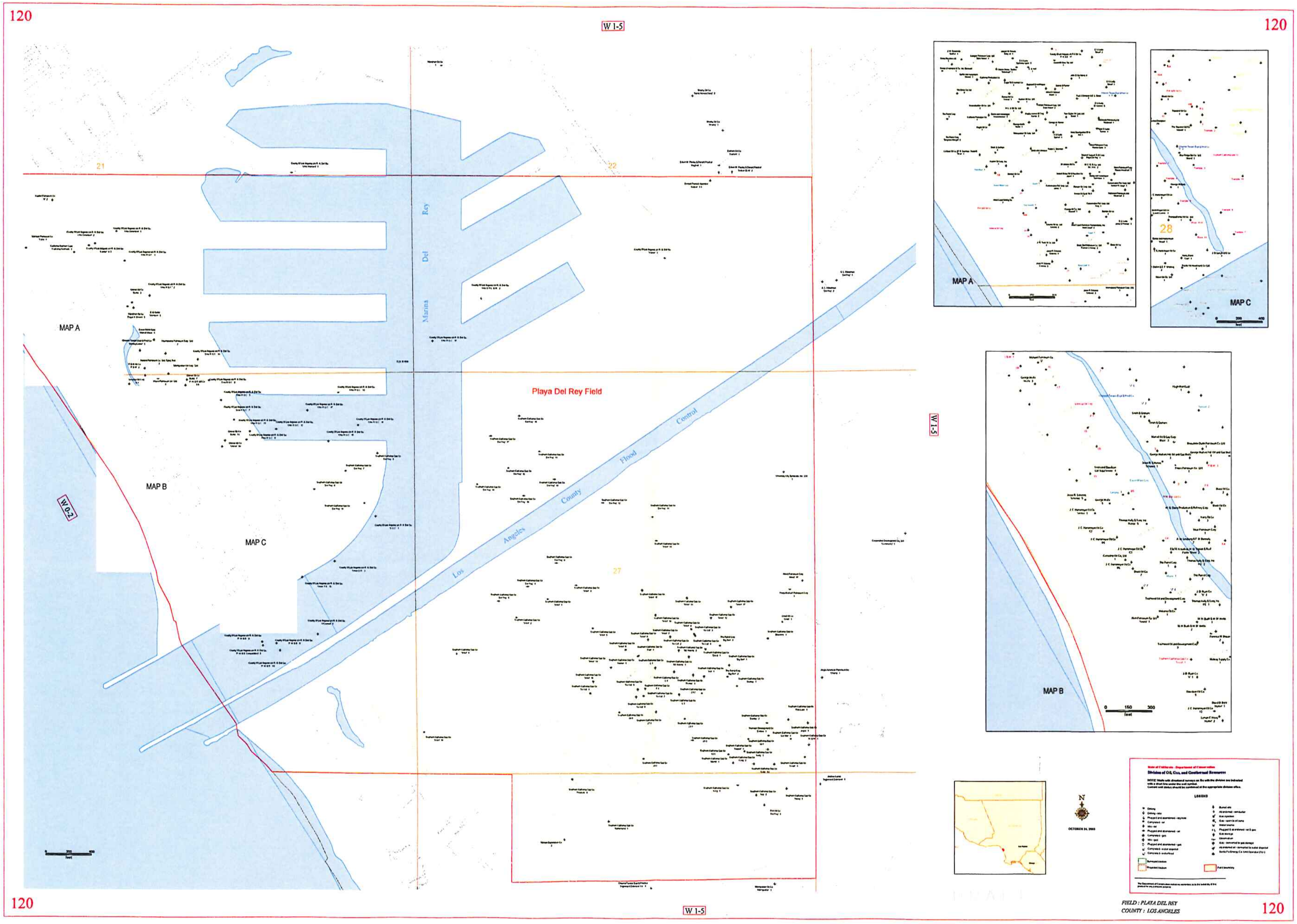
The proposed development comprises a dry-stack boat storage facility on Parcels 52R and GG, located on Fiji Way just west of Admiralty Way.

We conducted preliminary research of the proposed development site for the presence of active, idle or abandoned oil and gas wells, with the California Department of Conservation, Division of Oil, Gas and Geothermal Resources, District 1.

Map 120 of District 1 was obtained, which indicates the location of active, idle and abandoned wells in the Marina Del Rey Area. Further location details of the four wells nearest to the proposed development were requested and received from the Division of Oil and Gas. The information received indicates that these wells are not located on the site of the proposed development.

Sincerely,

Steve Matsler
B & E Engineers


120
W 1-5
120
21
22
Marina
Del
Rey
MAP A
MAP B
MAP C
W 0-2
Playa Del Rey Field
Los
Angeles
County
Flood
Control
27
28
W 1-5
MAP A
MAP C
MAP B
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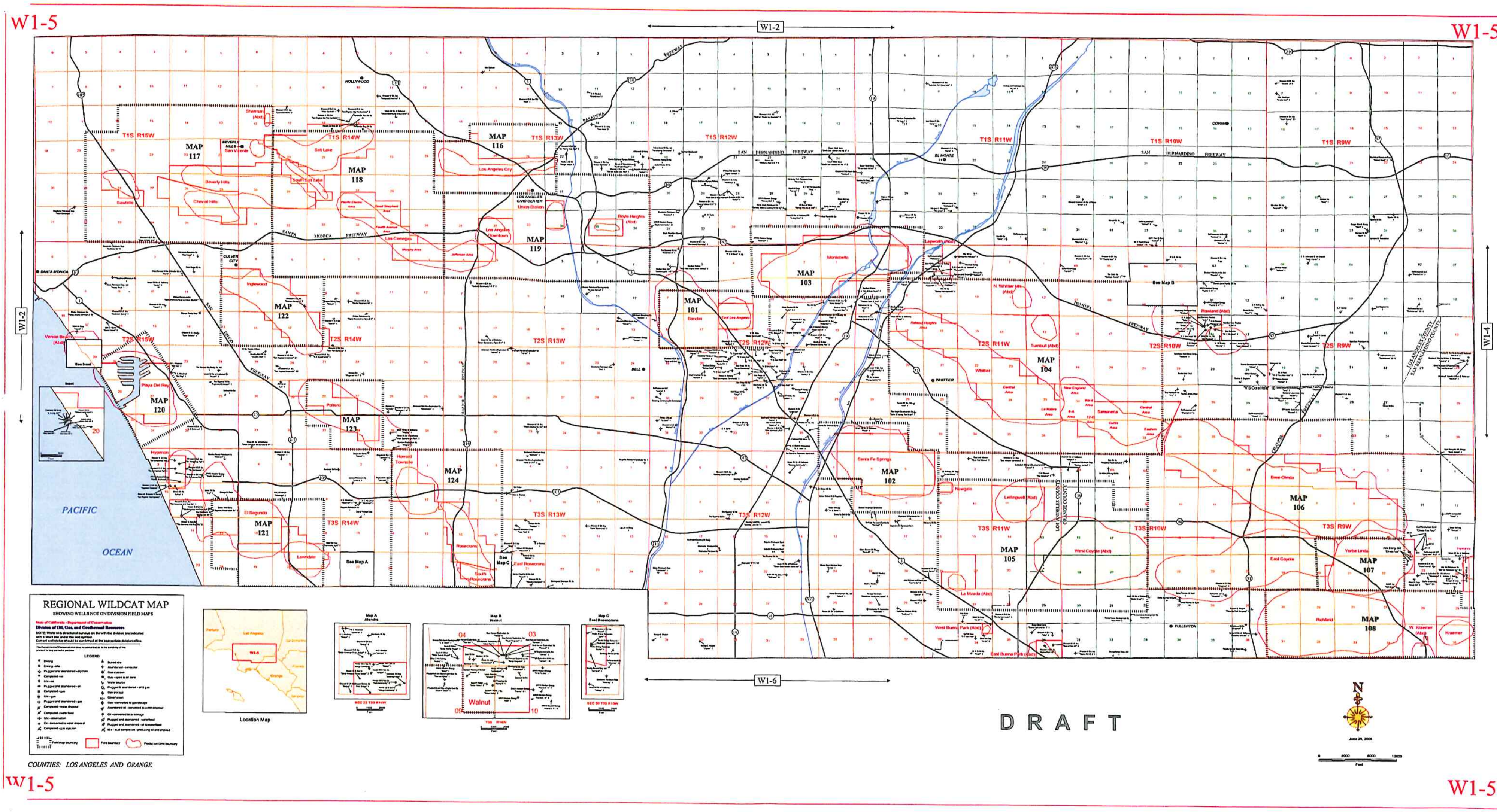
150
300
feet
N
OCTOBER 24, 2003
Division of Oil, Gas, and Geothermal Resources
LEGEND
120
W 1-5
FIELD : PLAYA DEL REY
COUNTY : LOS ANGELES
120


W1-5
W1-2
W1-4
W1-6
REGIONAL WILDCAT MAP
SHOWING WELLS NOT ON DIVISION FIELD MAPS
State of California - Department of Conservation
Division of Oil, Gas, and Geothermal Resources
LEGEND
Location Map
Map A
Map B
Walnut
Map C
COUNTIES: LOS ANGELES AND ORANGE
DRAFT
N
PACIFIC
OCEAN
MAP 101
MAP 102
MAP 103
MAP 104
MAP 105
MAP 106
MAP 107
MAP 108
MAP 116
MAP 117
MAP 118
MAP 119
MAP 120
MAP 121
MAP 122
MAP 123
MAP 124
T1S R15W
T1S R14W
T1S R13W
T1S R12W
T1S R11W
T1S R10W
T1S R9W
T2S R15W
T2S R14W
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T2S R9W
T3S R14W
T3S R13W
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T3S R10W
T3S R9W
SAN BERNARDINO FREEWAY
SANTA MONICA FREEWAY
POMONA FREEWAY
HOLLYWOOD
SANTA MONICA
CULVER CITY
BEVERLY HILLS
EL MONTE
COVINA
WHITTIER
BELL
FULLERTON
LOS ANGELES CIVIC CENTER
Union Station
LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
See Map A
See Map B
See Map C
Santa Fe Springs
Montebello
Beverly Hills
Cheviot Hills
Salt Lake
Los Angeles City
Inglewood
El Segundo
Playa Del Rey
Hyperion
Potrero
Rosecrans
Lawndale
Whittier
Richfield
West Coyote (Abd)
East Coyote
Yorba Linda
Brea-Olinda
La Mirada (Abd)
West Buena Park (Abd)
East Buena Park (Abd)
Leffingwell (Abd)
Bandini
East Los Angeles
Boyle Heights (Abd)
Rowland (Abd)
Turnbull (Abd)
W Kraemer (Abd)
Kraemer
N Whittier Hts (Abd)
Venice Beach (Abd)
Sherman (Abd)
San Vicente
Howard Townsite
East Rosecrans
South Rosecrans
Los Angeles Downtown
Jefferson Area
Las Cienegas

FORM 105. 38752 11-27 5M
CALIFORNIA STATE PRINTING OFFICE

DIVISION OF OIL AND GAS
RECEIVED
MAR 4 - 1930
LOS ANGELES, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND MINING
DEPARTMENT OF PETROLEUM AND GAS

037-13801

Notice of Intention to Drill New Well

This notice must be given before drilling begins

County of Los Angeles

Los Angeles, Cal. March 3rd 1930 192

Mr. E. Huguenin

Deputy State Oil and Gas Supervisor

611 New Orpheum Bldg., Los Angeles, Cal.

Dear Sir:

"Ohio D.R.L. + W. "2

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well number ~~2~~, Section 22, T. 2S, R. 15W, S.B. B. & M., Del Rey Oil Field, Los Angeles County.

The well is ______ feet N. or S., and ______ feet E. or W. from See attached sketch
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor above sea level is 9 feet.

Well to be known as Del Rey Land & Water Co. ~~No.~~ 2

We propose to use the following strings of casing, either cementing or landing them as here indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	New or Second Hand	Depth	Landed or Cemented
18-5/8"	84.5	New	700' ±	Cemented
$11\frac{3}{4}$"	54.	"	3800' ±	"
8-5/8"	38.	"	6000' ±	"

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

We estimate that the first productive oil or gas sand should be encountered at a depth of about - - - feet, more or less.

Respectfully yours

Address 1250 Subway Terminal Bldg.
Los Angeles, California

Telephone number Mutual 3251

The Ohio Oil Company
(Name of Company or Operator)

By M. W. Woolery
General Superintendent

ADDRESS NOTICE TO DEPUTY STATE OIL AND GAS SUPERVISOR IN CHARGE OF DISTRICT WHERE WELL IS LOCATED

Reference to file of data

Map	Book	Card	Cards	Forms
AMJ	4-8			

Lease consists of: 292.95 acres

AMJ 3-6-30

Form 105 ... (California State Printing Office)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice must be given before drilling begins

037-13820

County of Los Angeles

Los Angeles Cal. January 10th 1936

Mr. E. Hugeunin

Deputy State Oil and Gas Supervisor

Los Angeles Cal.

DEAR SIR: "Ohio R.G.C." 18

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well No. 18 (Recreation Gun Club), Sec. 22, T. 2S, R. 15W, S.B. B. & M., Playa del Rey Oil Field, Los Angeles County.

The well is 400 feet N. or S. and 278 feet E. or W. from SW. Corner of sec. 22 (See plat attached)
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor above sea level is 8 feet.

We propose to use the following strings of casing, either cementing or landing them as here indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	New or Second Hand	Depth	Landed or Cemented
11 3/4"	45	new	700'±	Cemented
7"	30	"	6400'±	"

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 6400'± feet, more or less.

Respectfully yours

THE OHIO OIL COMPANY
(Name of Company or Operator)

Address 1250 Subway Terminal Building

Telephone number Mutual 3251

By Paul L. Henderson
Paul L. Henderson, Chief Geologist
Pacific Coast Division

ADDRESS NOTICE TO DEPUTY STATE OIL AND GAS SUPERVISOR IN CHARGE OF DISTRICT WHERE WELL IS LOCATED

Lease consists of: 258 acres known as Recreation Gun Club Tract

42
RHW

FACSIMILE TRANSMISSION

FORM 108

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice must be given and surety bond filed before drilling begins

037-13836

County of Los Angeles

621 So. Spring St.
Los Angeles Calif. July 23, 1939

DIVISION OF OIL AND GAS

Los Angeles Calif.

"Vulcan" 1

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well No. Del Rey 1, Sec. 22, T. 2-S, R. 15-W, S.B. B. & M., Playa Del Rey Field, Los Angeles County.

Lease consists of 288 Acres - Lots 5,6&7 Pradero Tr., Los Angeles County

The well is 225 feet ~~N. or S.~~ Northwesterly at Rt. Angles to Southerly line of lot 7, and 265 feet ~~E. or W. from~~ Southwesterly from C.L. Lincoln Blvd.
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor / ground above sea level is 12 feet.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 7200 feet.

We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	Grade and Type	Depth	Landed or Cemented
13"	45.#	Seamless "C"	700'	Cemented
7"	30.#	" "C"	7200 ±	" *

*If productive zones encountered

Well is to be drilled with rotary / ~~cable~~ tools.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

Address Room 507
621 So. Spring St. Los Angeles

Telephone number TR 0211

Vulcan Oil Company
(Name of Operator)

By James Nichols (Pres)

ADDRESS NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL IS LOCATED

Reference to file of data

Map			Cards	Forms	121
42					
JRC				✓	✓

Bond 7-28-39

Form 105, 24789 3-33 10M
California State Printing Office

4✓ DIVISION OF OIL AND GAS
RECEIVED
DEC 15 1936
LOS ANGELES, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

037-14021

Notice of Intention to Drill New Well

This notice must be given before drilling begins

Southern California Gas Co.

Dominguez, Cal. December 7th, 1936

Mr. Huguenin,

Deputy State Oil and Gas Supervisor

Los Angeles, Cal.

Dear Sir:

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well No. Del Rey #16, Sec. 27, T. 2 S, R. 15 W S.B. B. & M., Playa Del Rey Oil Field, Los Angeles County.

Location: From N.W. Corner of the Vidor Lease go 3416' N'E'ly along the Vidor-Del Rey lease Line, thence 2100' N'W'ly at right angles.

The well is 3416 feet N'E'ly 2100 feet N'W'ly from N.W. Corner of Vidor Lease.
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor above sea level is ______ feet.

We propose to use the following strings of casing, either cementing or landing them as herein indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	New or Second Hand	Depth	Landed or Cemented
11-3/4	54.0	New	750	Cemented
6-5/8	26.0	"	6100	"
100' of 4-3/4"	16.0	"	6170	Landed

Well is to be drilled with rotary tools.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 6100 feet, more or less.

Respectfully yours

Address P. O. Box 511, Compton, California.

UNION OIL COMPANY OF CALIFORNIA
(Name of Company or Operator)

Telephone number Compton 2051

By S. Grinsfelder
S. GRINSFELDER, District Engineer.

Address Notice to Deputy State Oil and Gas Supervisor in Charge of District Where Well is Located

42
RCM

Book 12/15/36 PCM

B & E ENGINEERS
an NJS Company

CIVIL ENGINEERING · SURVEYING · LAND PLANNING

24 W. Saint Joseph Street
Arcadia, CA 91007-2854

Tel: (626) 446-4449
Fax: (626) 446-6566

August 10, 2007

Mr. Tom Hogan
Pacific Marina Development, Inc.
3416 Via Lido, Suite G
Newport Beach, CA 92663

Subject: Boat Central Facility
Lease Parcels 52R and GG, Marina Del Rey
Sewer Service

Dear Sir,

The proposed development comprises a dry-stack boat storage facility on Parcels 52R and GG, located on Fiji Way just west of Admiralty Way. An existing 10" diameter public sewer is located on the property and would continue to remain in service subsequent to construction of the boat stack facility.

Existing public facilities will be displaced by the proposed development, and as a result there will be no net increase in sewage generated as a result of the proposed project. The sewage capacity requirements of the proposed project can therefore easily be met by the existing 10" diameter sewer.

Sincerely,

Steve Matsler
B & E Engineers

B & E ENGINEERS

an NJS Company

CIVIL ENGINEERING · SURVEYING · LAND PLANNING

24 W. Saint Joseph Street
Arcadia, CA 91007-2854

Tel: (626) 446-4449
Fax: (626) 446-6566

August 10, 2007

Mr. Tom Hogan
Pacific Marina Development, Inc.
3416 Via Lido, Suite G
Newport Beach, CA 92663

Subject: Boat Central Facility
Lease Parcels 52R and GG, Marina Del Rey
Water Service

Dear Sir,

The proposed development comprises a dry-stack boat storage facility on Parcels 52R and GG, located on Fiji Way just west of Admiralty Way. An existing 12" diameter public water main is located on Fiji Way immediately adjacent to the property.

Existing public facilities will be displaced by the proposed development, and as a result there will be no net increase in daily water use generated as a result of the proposed project. The water capacity to serve the daily needs of the proposed project can therefore easily be met by the existing 12" water main.

Sincerely,

Steve Matsler
B & E Engineers

Southern California Gas Company

A Sempra Energy utility℠

Will Serve Letter

March 31, 2009

Ms. Margaret Partridge
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, CA 92656

Subject: Gas availability – Fiji Way, Santa Monica

Dear Ms. Partridge;

This letter is not to be interpreted as a contractual commitment to serve the proposed project, but only as an information service. Its intent is to notify you that the Southern California Gas Company has facilities in the area where the above named project is proposed. Gas service to the project could be served without any significant impact on the environment. Gas facility additions for the expansion would be in accordance with the company's policies and extension rules on file with the California Public Utilities Commission at the time contractual arrangements are made.

The availability of natural gas service, as set forth in this letter, is based upon present conditions of gas supply and regulatory policies. As a public utility, the Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. We can also be affected by actions of gas supply or the condition under which service is available, gas service will be provided in accordance with revised conditions.

Estimates of gas usage for non-residential and residential projects are developed on an individual basis and are obtained from the Commercial-Industrial/Residential Market Services Staff by calling (800) 427-2000. We have developed several programs, which are available upon request to provide assistance in selecting the most energy efficient appliances or systems for a particular project. If you desire further information please contact the Gas Company's call center at 1-800-427-2200.

Sincerely,

Debra Wilson

Debra Wilson
Pipeline Planning Assistant
(310) 605-7958
DWilson2@semprautilities.com

From: Lopez, Fernando [mailto:fernando.x.lopez@verizon.com]
Sent: Thursday, March 12, 2009 12:24 PM
To: Margaret F. Partridge
Cc: Cooksey, Julia; Maresca, Michael D (MICHAEL); Feingold, Zachary (Zach); Olsen, Richard E
Subject: FW: Verizon Will Serve Letter for the Boat Central Project
Importance: High

Hello Margaret,

Please see below (blue) in response to your request.

Service Availability/Capacity Questions and Comments:

1. Please describe the existing telephone services provided to the project site.

Verizon Communications currently has two underground cables entering the parcel at 13483 Fiji Way, Marina Del Rey CA.

- One 24 gauge, 100 copper conductors (50 pair) with color coded plastic insulation incased in filling compound, wrapped with clear plastic, under a metal shield with on outer alpeth sheath. Know in the industry as "AKF 50-24" or "ANMA-50".

- One 24 gauge, 200 copper conductors (100 pair) with plastic insulation NOT incased in filling compound, wrapped with clear plastic, under a metal shield with on outer alpeth sheath. Know in the industry as "AE 100-24" or "BKMA-100".

The two cables branch off and service the following addresses. 13483, 13481, 13834 and 13837 Fiji Way, Marina Del Rey.

2. Are upgrades or improvements to the existing service system required in order to adequately serve the proposed project? If so, what mitigation measures would Verizon Communications implement for the project?

No.

3. Will the project negatively impact any current or future facility expansion plans for the project area?

No.

4. Please provide any additional telephone service related issues, questions, and comments pertaining to this project.

On the parcel half of the existing telephone facilities will require removal at developer/owner expense. Please notify my office when you wish Verizon to open up a cost study. The other half will require protection in place.

Please don't hesitate to give me a call for any questions or concerns.

Thank you

Fernando Lopez
Outside PlantEngineer
1450 S Bundy Drive / 2nd Floor
Los Angeles, CA 90025
Office # 310 264-5125
Office # 310 264-5128
Fax # 310 264-5101

WASTE MANAGEMENT

Think Green.

Margaret Partridge
Associate Planner
CAA Planning
85 Argonaut, Suite 220
Aliso Viejo, CA. 92656

Re: Proposed Dry-Stack Boat Storage Facility at 13483 Fiji Way, Marina Del Rey, CA 90292

Dear Margaret.

I have reviewed the Initial Study and Notice of Preparation letters on the above stated project. Listed below are our Service Availability/Capacity Comments.

- Waste Management Inc. currently supplies no service to the location listed above.
- We are able to provide construction debris boxes and Construction and Demolition (C&D) debris recycling services on the project, throughout the duration.
- I am not aware of any negative impact on current or future expansion plans.
- Waste Management Inc. is able to provide hazardous material hauling and disposal for any hazardous materials generated on-site. Upon completion of the project we will provide permanent trash and recycling services to the tenants and occupants of the facilities, such as pick up waste from the visitor lounge and Sheriff/Lifeguard facility.

If you have any questions or comments regarding this Will Serve Letter, contact me at 818-581-9799. Thank you.

Sincerely,

Vince Sabotin
Outside Construction Sales Manager
Waste Management Inc.

From: Even, Greg [mailto:GEVEN@dpw.lacounty.gov]
Sent: Wednesday, March 04, 2009 5:23 PM
To: Margaret F. Partridge
Cc: Gindi, Ramy; Eng, Tom
Subject: Dry-Stack Boat Storage Facility - NOP questions

Ms. Partridge,

Waterworks District comments to EIR for Boat Storage Facility

At 13483 E. Fiji Way, Marina Del Rey

The subject property is on the north side of Fiji Way, approximately 1,000 feet southwest of Admiralty Way. There is an existing 12-inch diameter asphalt-cement water main fronting the property with public fire hydrants on the same side as the subject property. There is also a water meter currently serving this property.

The following is our responses to the four questions cited in the CAA Planning letter dated January 20, 2009:

1. There is an existing 12" AC water main fronting the property with public fire hydrants on the same side as the subject property. This water main can provide for fire flow of up to approximately 3,500 gpm (a fire flow test may be needed to confirm this). There also an existing water meter serving domestic water this property.

2. Submittal of the Fire Department's requirements will be needed to determine if there will be any required upgrades to the public water system. If there are onsite fire protection requirements, additional facilities will be required to be constructed. In addition to the fire protection requirements set by LA County Fire, the applicant will also need to provide to Waterworks the peak hour and maximum day demands for the facility to determine if the existing service or water system facilities will need to be upgraded.

3. The District is currently not expanding the water system in the vicinity of this project. However, the District does have future plans (> 2 years) to upgrade the transmission water main in Fiji Way. To determine it impact of your project on the existing and future water system facilities we would need to know additional information as described responses #2, and #4.

4. The District needs to be provided with specific information regarding the project's fire flow requirements (public and private onsite), fire sprinkler requirement (as applicable), and domestic water demand (flow and minimum pressure needed) in order to determine if any water system improvements will be required for this development.

Greg Even

LAC Waterworks Districts

Appendix L–
Letter from Tom Bazley, PE, BLUEWater Design Group re Landside Dry Stack Boat Storage Capacity

2500 Via Cabrillo Marina, Suite 200
San Pedro, CA 90731
Phone (310) 548-3132

BLUEWater Design Group

CAA Planning
65 Enterprise, Suite 130
Aliso Viejo, California 92656

Subj: MARINA del REY – Landside Dry Stack Boat Storage Capacity

Dear Ms. Shawna Schaffner,

This letter has been prepared at your request to estimate the number of boats that could be accommodated within a drystack boat storage building with the following dimensions and specifications:

- Total rack height: 42 feet,
- Building length: 280 feet,
- Building width: 182 feet,
- Maximum building height: 52 feet,
- Two forklift access aisles, each 70 feet wide, 182 feet long,
- Four boat storage rows, two with 30-foot deep bays and two at 40-feet, each row with six 30-foot wide bays,
- Accommodates a mix of boats from approximately 18 - to 40 - feet in length.

<u>Overall Summary</u>

Based on the analysis described below, it can be estimated that a building with the specifications above could accommodate between 252 and 288 boats.

<u>Analysis</u>

For this analysis, it is assumed that the four boat storage rows are parallel to the 182-foot length of the building, each row has six 30-foot wide bays. The other direction has a 40-foot deep storage bay, a 70-foot aisle, two 30-foot storage bays, a 70-foot aisle and a 40-foot storage bay.

In general, these stack boat storage systems are built with the ability to adjust the heights of the racks within each bay to accommodate the actual demand for the numbers and type of boats that will actually occupy the spaces. For planning purposes, please consider the following:

For the 40-foot long by 30-feet wide storage bays, the general configuration would be four racks with varying clearance. The lower level would be 15-feet high, second level at 10-feet, third level at 9-feet leaving 8-feet for the fourth level. The first and second level would store two boats each at a vessel length up to 40-feet. The third and fourth level could store three vessels each from 20 to 30 feet in length. This results in 10 vessels being stored in each of the 12 forty foot bays for a total of 120 vessels.

For the 30-foot long by 30-feet wide storage bays, the general configuration might be five racks with varying clearance. The lower level would be 12-feet high, second level at 8-feet, third level at 9-feet leaving 7-feet for the fourth and fifth levels. The first and second level would store two boats each at a vessel length up to 30-feet. The third, fourth and fifth levels could store three vessels each from 20 to 30 feet in length. This results in 14 vessels being stored in each of the 12 thirty foot bays for a total of 168 vessels.

However, this would represent a very large number of small and low profile vessels. A more realistic approach would be to consider a four level configuration similar to the 40-foot bays that would store two vessels on the first row and three vessels on the three above, resulting in 11 vessels per bay. This results in 132 vessels stored in the 30-foot bays.

Therefore, with 120 vessels in the 40-foot bays and 168 in the 30-foot bays, 288 vessels are stored. With 120 vessels in the 40-foot bays and 132 in the 30-foot bays, 252 vessels are stored. These are planning level estimates with nominal tolerances for structural members of the building and rack systems.

Discussion

A significant factor in the design of such structures is to provide the flexibility to accommodate berths that are tall enough to accommodate the height of the vessel superstructures that are common to ocean-going power boats. Also to provide sufficient maneuvering room for the forklift is available to place and retrieve these boats.

As this is a new technology for the Marina del Rey area, it is difficult to accurately determine the actual demand for these storage option. It is certain that there is significant demand for the various fishing boats, but the actual demand for a large number of 18 to 22 foot vessels is difficult to assess. Therefore the need for flexibility in the rack configuration.

I believe this analysis proposes a realistic scheme that would accommodate the widest variety of the power boats found in Marina del Rey. Let me know if you have any questions regarding this assessment.

Best Regards,
BLUEWater Design Group

Tim Bazley

Tim Bazley, P.E
Senior Engineer